XII INTERNATIONAL CONGRESS OF THERAPEUTIC RIDING

XII CONGRESSO INTERNACIONAL DE EQUOTERAPIA





COMPLETE TEXTS



TEXTOS COMPLETOS

XII INTERNATIONAL CONGRESS OF THERAPEUTIC RIDING



COMPLETE TEXTS





Brasília – Brasil 2006

PRESENTATION

The Organizing Committee of the XII International Conference of Therapeutic Riding carried out by both The Federation of Riding for the Disabled International (FRDI) and Associação Nacional de Equoterapia (ANDE-BRASIL), is pleased to announce the collection of complete texts of most papers presented in the Conference.

For different reasons, some texts were not received by the Committee, therefore, they are not being published in this Collection.

It would be interesting to point out our wish to deliver the present material during the Conference. It brings great satisfaction, specially for the practical aspect.

Another way, with no hurry, maybe could favor more the quality of written papers. It would certainly involve consultations and debates with some authors, asking them for some analysis and eventual reformulations. It is worth to remind you about the difficulties some people have to write in the official language of FRDI – English - as it differs from their mother tongue.

The Organizing Committee has chosen the first alternative, reproducing the texts according to the way they were initially sent, under the responsibilities of their authors, in accordance to Instructions previously published.

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ORAL COMMUNICATION

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HOLISTIC THERAPEUTIC RIDING: RE-EDUCATE IN AN ECOLOGICAL AND INTEGRATIVE MANNER TO A NEW CONSCIOUSNESS ERA

Author: Claudia Tannus de Mesquita - Brazil

OVERVIEW: HORSE AND MEN – FRIENDS IN CONTACT EVER SINCE

Man and horse's destinies have been developing from long time ago, ever since man and horse got in touch in the beginning of times. The horse has been known and admired as valuable to man, for its relevant contribution to the development of the human kind in all the ages. In the past, horse was an invaluable instrument in feeding, since it was hunted for food; as an instrument of transportation, it changed the perspective of man since it turned possible to travel unimaginable distances in time; since then, conquering turn to be men's labor, and for that reason he used horse for war. In our days, hopefully, horse's role has changed. Horses have been largely noticed as agents on the rehabilitation process of people with "disabilities" or those with special needs. Most recently it is also been, little by little recognized as an important tool to reconnect men with **the essence of human being:** qualities of the **spiritual intelligence** and **metaphysic abilities of transformation**.

The ones who practice Therapeutic Riding may reach a state of union to their horses that will enable them to act as a unity, by establishing a sincere and harmonic relationship between both. Affectivity and trust certainly grow along this process. This connection not only creates the environment for physical rehabilitation, but most importantly, **regenerates de soul**, **the spirit**, **the connection with the vital energy**. In the quantum vision of physics, this energy is translated as **quantum energy**, **the essence of life**.

BENEFITS OF THIS CONNECTION: WHO ARE THE SPECIAL PEOPLE?

The willing to research and to find new solutions to men needs has made possible to develop activities into the educational context of Therapeutic Riding, which have lead to the improvement of **quality of life** to **very special people**.

And here, we would like to make some very interesting questions:

- Who are those who are called "special people"?
- Are only the disabled in capacities that can be verified in a medical diagnosis, the only persons in need of a **healthy and healing interaction**?
- Are those who need medical support, the only ones that can apply for the enormous advantages with **alternative therapeutic and educational programs in horse riding**?
- Aren't man kind in general in need of a very important reconnection of consciousness, as an aspect of holistic health?
- Can't we also be beneficiaries of the valuable help of the horse riding, to **develop important complementary educational skills in multiple intelligences**?

ARGUMENT: WE NEED CONTACT AMONG OUR OWN SELVES AND OTHERS

We are all aware of the need for a **multidisciplinary education** in the new world we are living. The new era o consciousness demands an urgent balance of values, interests, goals, politics, education, etc. It demands a real and solid evaluation of those values that northern the decisions of the future of the planet. We have been awakened to the importance to **develop multiple intelligences**, **mental and emotional skills** that are not present either in schools, al least traditional ones, neither in medical or psychological assistance in most countries.

To be able to **provide and improve essential values for the new generation**, new kind of **complementary educational programs are needed**. Our task is not only educating people for the threatening environment of the globalized reality. But mostly, because the difficult task that is to create a social environment of harmony and balance nowadays, help family, schools and health professional with new tools for consciousness.

DISEASE OR ENVISIONING

We all can see in various aspects, how unbalanced our planet is. Culture is focalized in information. Modern man uses almost 100% of their time in making money, no mater how much they already have. Most of the times, this activity don't bring them the happiness they are searching for. In their little spare time, men and women are spending the money they make, buying, acquiring goods; this doesn't seem to make them happy either. There must be something wrong. There must be something that got lost in the past centuries, and is about to **come back to surface in the present era**. **There must be new Values**. **Essential values that will connect men to their real spirit**. Bringing reconnection to a life style that can bring back men to a lost quality of life.

No technology could substitute the lack of "nature" men are experiencing. Technology is fine, medical advances too, but what about **ability to respond by our own selves**. Where did it go? We are all attached so much to external help that we can't even survive to a head ache without taking some chemical drugs, without even asking: "What's going on with me?"

The idea that we can manage to administrate our own quality of living is so far away..., we are all so victimized by what is around us, that we don't even know what it is to be free anymore. Even to be free of an analgesic for pain. Our quality of life is reduced to a minimum space that is almost disappearing. We don't feel comfortable to choose, we don't know what we are and what we really want. We say to ourselves that we want something, go on working all the month to save money to acquire it, and right after buying it, the pleasure is already gone.

Quality of life is most of all, an ecological consciousness, and development of bases for values and abilities that can respond to all of those demands of individual and collective needs.

It starts from a contact, a very deep and profound contact. A contact with a friend. The first friend we had since we where born. This first friend we have the duty to reconnect to our personal values and intelligence: **To be our own best friend**!

CONNECTION BETWEEN FRIENDS STARTS FROM INSIDE OUT.

There is no way to tech a child or a young man to be friendly, to be socializing in a healthy and cooperative way, if they don't have a **harmonious contact and communication among their own selves**.

In the modern world we can see a great number of disharmonies of behavior, lack of values, lack of interpersonal skills, and these disharmonies are not necessarily diagnosed as diseases. So they are not necessarily treated as health problems. Because we still understand **health** as something medicine can recognize as "absence of disease".

Meanwhile, various "disharmonies" like: lack of adaptation, mental and emotional inflexibility, lack of personal value and low self esteem, excessive shyness, lack of physical energy, lack of interest in learning, aggressiveness, excess of competitiveness, etc, are manifesting as true "**diseases**" in our children and young people, and also in most adults. And they are mostly unattended, or if though, are treated with chemical interference, that generally suppresses the symptoms, but don't go forward to find the real cause. Of course chemical industry has a very important interest that this practice goes on and on. So maybe, we can just try to imagine why **budgets for education** are so absurdly low in most of the called, third world or in development countries. Those countries, most of all, are buying their "**health**" from chemical multinational corporations.

No school tells the students that the possible cause for those "disharmonies" are associated with their disconnection with their **spirit**, with their real **life porpoise**. No doctor evaluates what is happening to that child in the most deep aspects of their inner life, they just go on evaluating their physical bodies, and at least, their psychology, but treat it as if it was also strictly physical or behavioral.

In a **holistic health view**, most of the time, the cause is connected with the **abandonment of the inner child dreams**. But those dreams are abandoned long time ago for whole humanity. The mechanicist era, the technological ages throw men kind in a fragmented way of perceiving themselves and the world around. Like if men were similar to a clock, and can be "repaired" by changing some of its parts or oiling some others with drugs.

Hopefully, there is still a seed of conscience into a hidden part of our intelligence. That seed is calling, it is calling for help. For that reason, some new ways of experiencing life and life styles are emerging all over the planet. A new medicine is appearing in various forms and places of the Earth.

It is time to bring this consciousness back to surface, it is time to run again against the winds, and find a new way to live and to be healthy. From inside out. From our dreams to our personal vocations. To what we have come to be and to do here on earth. For our talents and abilities that are unique. This is to be healthy and happy.

CONNECTING OUR PERSONAL INNER DREAMS: A PATH TO HEALTH

What a wonderful chance to connect the inner child dreams galloping on a horse back. Holistic Therapeutic Riding is one of the most wide open tools for an educational program of complementary teaching. It brings the chance to make real the soul vision, because it connects the man with his nature, with his ancestral knowledge, with his visionary skills. It also brings a new signify to life, freedom and abilities to experiment to turn into our own commander in chief. It connects leadership into a context of higher good, of cooperation and a fair play, where all have the same chance to win.

With the exercise of *"being one"*, that is present in the horse back riding practice, rider and horse can experiment and respond, in a way that no other teaching can do, values like:

cooperation, flowing, honesty, positive thinking and self esteem. It also brings out the experience of feeling that we are all connected in this planet. It also connects the knowledge about making choices. It teaches that making choices creates waves that affects others and environment no matter how far from us they are.

There is no other way to succeed, except for listening and acknowledging the others needs, including environment, and try to "dance like the music" and "to walk in others moccasins". Do it the ONE exceptional and UNIQUE way of the individual with the respect for effects we area creating. This consciousness of identity (no ego) is the only one that responds with ability (=s responsibility) to a real modern world education, if we are pointing to create and build a new era of environmental consciousness, generosity, and peace in the planet.

CONNECTION BETWEEN FRIENDS STARTS FROM INSIDE OUT

From an inside out experience men can carry on the learning throughout their new abilities to their lives:

- · Connect with their own selves in an exercise of shearing love;
- This leads to create and maintain peaceful relations;
- Cooperative leadership;
- Intentional empathy;
- Generous and creative personality;
- Abundance consciousness and happiness.

And those are all experiences that in Educational Therapeutic Riding are anchored and recognized in cognitive skills. Because learning from own experience is the only true way to learn. Because knowledge without action is not wisdom, is just information. We need more than information in the consciousness era, we need transformation.

CONNECTION BETWEEN FRIENDS GOES EVOLVING TO CHANGE THE WORLD

The unique relation that horse brings to men is very vivid, is very unlike any other. It is imperative that we recognize that new role of the horse in our lives as human beings with a brand new vision and quest. Horses are not anymore instruments of war, but our guardians of peace. They help us find that peace where it has been hidden for so long: inside our own souls and hearts. The affectivity and the love we develop in connection with horses compared with other pets, witch also teach us important lessons, have an important difference. Dogs for example, are so unconditional that even when we behave badly with them, they are trying to teach us unconditional love and fidelity, so they come to us always in good mood to play, and they teach us to receive. Cats, in their own uniqueness, teach us to be always at their disposal, since they only do what their in the mood to do, whenever they want to. So they teach us to take steps to our true, to take care of our own selves, to be generous and to give. Horses teach us both ways, and the way to discern the difference between them, how and when to do, so they are teaching us to be wise.

Consciousness is to go forward throughout the good and the bad. Is not only to be able to give or to receive, but to be aware of when and how to do it. Learning the rhythm of life, its cycles, it natural knowledge can bring us back to where we really belong. Horse riding with a therapeutic approach gives us the chance to create quality of life through learning discernment and balance. It teaches us to choose a better life, step by step. Same way as the horse chooses his path, step by step and in a cadenced rhythm. As we observe him, we go on learning how to live a life like this: stepping and listening. We go discerning weather to go forward and to stop, to diminish speed and to accelerate. And if there is anytime that we don't know **where** to go, or **what** to do, just **leave the reins to the horse**, and he will know how to bring us the way back home. Paraphrasing Dory in *"Finding Nemo"*: Just keep on riding... keep on riding... Keep on riding, riding, riding...

PROYECTO WAKAN TANKA® EDUCATIONAL THERAPEUTIC RIDING DEVELOPMENT OF VALUES AND MULTIPLE INTELLIGENCES

PROYECTO WAKAN TANKA®: INNOVATIVE PRINCIPLES AND IMPORTANT DIFFERENCES

With the practice of therapeutic riding, the connection created with the "spirit" is what makes possible to special people to go forward and cross the line of the impossibilities. The vision of a healthy life for the *Proyecto Wakan Tanka*® is that health comes from consciousness. This program creates and permits through therapeutic riding possibilities to a better perception of self, leading participants to this consciousness and that "spirit".

Program is focused not only in "special needs" publics in general, but also in people who apparently don't suffer any kind of "disabilities". It is designed for people that are dealing in their day by day with their "problems", doubts and discontentment. Those that are the modern "diseases", not always recognized as causes for those disharmonies. Those disharmonies are threatening people with feelings of emptiness. People are mostly not able to identify from where those feelings really come, but those are leading them to abandon their dreams, not to feel enthusiasm for life, not to be happy.

The *Proyecto Wakan Tanka*® in its practice of Therapeutic Riding with educational focus in development of **values and multiple intelligences** is available into Ce. Na. F.R.E. (Centro de Fomento y Rehabilitación Ecuestre), and takes place into the environment of Escuela de Equitación del Ejército, "Grito de Asencio" in Uruguay.

In this educational center there is already a Therapeutic Riding Rehabilitation Program that is taking place for more than ten years. The *Proyecto Wakan Tanka*® comes to sum its experience to that center, amplifying its activities to that new vision: **Complementary Education**, the human growing and development into Values and Multiple Intelligences teaching program.

This is a very innovative program. In the South American countries it recently starts to have more transcendence. There are still very few professionals in that area of education connected with Therapeutic Riding for people that not necessarily suffer visible and physical "special needs".

The *Proyecto Wakan Tanka*® has as porpoise bring to that innovative manner for Therapeutic Riding, students, children and young people that have the desire to bring better quality of life and perceive the need to develop themselves as individuals to be able to live better in that threatening world like the one we are living in, as well as for adults with same perspective of their needs and possibilities.

CALL OF THE WILD – PSYCHOTHERAPY WITH HORSE

Author: Monika Mehlem - Germany*

INTRODUCTION

"Become what you are" is a greek saying and ",become ,what you are" is also one of the main ideas of modern psychotherapy.

"Become, what you are "- this sentence contains for one the orientation in the presence, in the "Here and now", which is contained in the part "what you are", in this very moment. We are talking about a state of attentive perception for yourself and for everything around you, a state of presence, awareness and "mindfulness" (i.e. open mind and open heart) at all times.

The second aspect next to the Being is the Becoming:

Before the leaf of a plant enfolds, an energetic field of this leaf already exists and contains already the futureform of the leaf.

The leaf enfolds into its form, just like a person can grow into his potential, unless fears, handicaps and avoidance keep him back. This movement is found in "Become… (what you are").

Those four words contain the "Being" (who am I) as well as the Becoming (what could I be, using all my potentials).

Psychosomatic symptoms and mental suffering arise when a person is disturbed, weakened or blocked in her flow of life. Very often the cause of an illness lies in the (unconscious) attempt of a person to be somebody different than she is.

New research shows that people in professions, where they have to be extremely socially adapted, for example flight attendants, show a statistically higher risk for illnesses.

Becoming healthy means to start looking for the core of the being, the meaning and destiny of each individual life. There is no better companion on the path to oneself than the horse. The horse, without worrying about the future and always living in the present, brings the person back into the Here and Now and in contact with herself.

The horse, with its incomparable fine senses discovers the true emotions of a person behind the facade.

The horse recognizes the person even there, where the person does not know herself.

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The person finds her own truth, her true nature in the mirror of the horse. Step by step, through meeting the horse, she can rediscover and recapture repressed, neglected or unlived parts of her personality and find to a healing unity.

PSYCHOTHERAPY WITH THE HORSE – THE BASICS

Development in Germany

In 2001 a group called "FAPP" (i.e.: a team of specialists working with horses in psychotherapy) was founded in Germany.

About 20 psychotherapists, who are working with horses, came together with the goal to research, to describe and to develop the concept "psychotherapy with the horse".

After many discussions and based upon my own 20 years of experiences of therapeutic working with horses the following ideas may describe what I mean when I talk about 'psychotherapy with the horse':

PSYCHOTHERAPY IS ALWAYS AN INDIVIDUAL PROCESS

"The life of every person is worth a novel", says the title of a book about gestalt therapy by Erving Polster. Each therapeutic process, each therapy session, each new connection between client and horse is a new chapter and another step on the path of the development. Therapy means 'service' or 'accompanying on the path' and I see myself as a helper and escort for the client in the search for herself, which has started with the help of the horse.

Not one session is like the other and I don't know ahead of time what is going to develop between the person and the horse. But we can assume that a topic will surface, that is 'mature' and important for the development of the client. The client is invited to let herself being guided by her spontaneous inner impulses, upon which the horse reacts directly. If the person and the horse are in harmony, we can assume, that the person is connected well with herself and is 'authentic'. If there are dissonances we will start a search process, which usually leads to repressed and unconscious topics.

AN EXAMPLE:

A young woman wanted nothing more than to canter. Her horse was on the longe line but despite many tries to get him to go faster, the gelding refused. On the contrary, he went slower and slower until he finally stopped and dropped his head. The woman was baffled. At first she was angry and then desperate in her helplessness. Upon the question if there was anything else she wanted to do, she dropped down onto the neck of the horse and cried for a long time.

This short but impressive incident made the woman realize that for years she constantly expected too much from herself. She tried to achieve success and recognition through performance and risk taking while she did not acknowledged her needs for surrender and support.

During the following session the horse was happy to oblige and offered her a joyful canter.

THE SETTING:

Balance between Safety and Freedom

The therapeutic setting should be as safe as possible. Safety is one of the basic needs of a person and the prerequisite for the client to be able to trust and open up.

Safety means that the horse is reliable and well trained. That does not mean that the horse can't be perceived as a personal threat.

Safety means protection from physical harm as well as from spectators and the public. Safety also means a trustful relationship to the therapist, who can mediate and translate between client and horse and, if necessary, protect.

Safety means also that the situation with the horse does not initiate new fears or threats but leaves enough space to recognize existing fears and conflicts.

On the other hand the therapeutic situation should be as free as possible for the client as well as for the horse.

The person is allowed to find the closeness or distance to the horse she needs, but the horse also must be free to show his reaction to the person.

The horse should be free to move in a fenced in area (paddock, riding arena, round pen etc.) when he is encountering the client.

Even if a horse is held, lead or longed, he needs enough freedom to express his own state of mind and reaction to the client (within the boundaries of safety) and he should be able to confront and mirror the client.

This ensures the psychological well being of the horse on one hand. On the other hand a therapeutically important event can only occur when the client can experience the horse's personal reaction to her. This is not possible if the horse is for example tied with cross ties during grooming or longed with tight side reins.

For the therapy it is very important that the horse works voluntarily. Many of my clients have experienced open or hidden physical and psychological violence in their lives. Because the clients identify themselves very often with the horse it is necessary that we do not topic the horse (consciously or unconsciously) to something similar that possibly made our clients ill in the first place.

Nicole, a severely traumatized young woman, describes her feelings, while she identifies herself with the horse:

"A horse is not a safe horse for me if he is forced to do something. Eventually the horse will break out. It is important for me that I can be here and the horse can be here and he does not have to function like a machine.

A horse has a right to show his own nature and have a mind of his own... "

DIFFERENT LEVELS OF THERAPEUTIC WORK:

Here and Now - Regression - Potential

The basis of the therapeutic work with the horse is ,connection'. Connection between a person and a horse on the horizontal plane (facing), connection of a person with herself in form of consciousness here and now (centering) and connection of a person to her unconscious psychological parts in the vertical plane of the intrapersonal level of regression.

In 'Here and Now' the horse teaches the person attentiveness and awareness. Only if the horse feels the presence of the person, he is interested in a connection and is willing to work together.

The person learns how to listen like the horse and how to communicate with the slightest body language. During the encounter with the horse the acquired patterns of how the person forms relationships are surfacing:

- Who initiates and who leads?
 - Where are the boundaries to closeness and distance?
 - Where is the 'correct distance'?
 - What topic is dominant during the contact (Attraction,
 - power vs.powerlessness, fear, helplessness,
 - resignation,
 - autonomy vs. dependency, connection, confluence,
 - projection, etc.)
- What new experiences are possible within
- relationships?

Psychological conflicts are always caused in a relationship and therefore can only heal within a relationship. In the relationship between a client and a horse it becomes apparent how the person has learned to structure her relationships in order to protect herself from (old and new) injuries.

The horse reacts directly and is not envolved in emotions and countertransference like a therapist. Therefore the client's part is much more visible and for herself obvious.

Many times people look younger than they really are while sitting on the horse or being in close contact with the horse. The horse awakens childish energies and spontaneous regression, possibly, because the sitting on the horse reminds of the feeling of being carried as a baby. Another explanation might be that the horse offers movement and contact that corresponds with deep feelings and spontaneous reactions, which are often buried in adulthood. If the client follows these spontaneous impulses to move, they may lead her through blockades and fixations to forgotten sources of vital energy.

VARIATIONS OF THE RELATIONSHIP TRIANGLE:

Client - Therapist - Horse

There are several constellations in the relationship triangle between client-therapisthorse. Usually the focus is on the relationship between the client and the horse. Especially if the therapist works with her own horses, the client may see the therapist and the horse as a unit or as a couple, in the best scenario as good parents or caring friends. The therapist helps and allows the client to build a relationship with the horse. If there is a strong emotional connection between the therapist and the horse, it might be a gift for the client to be allowed to work with the therapist's horse and to experience the therapist on a more personal level than it occurs in a verbal therapy. (Barbara Groth). On the other hand, narcissistic insults can surface which can result in feelings of competition, rivalry and powerlessness like' the therapist likes the horse more than me' or 'the horse only listens to the therapist, not to me' etc.

The horse is irreplaceable for the psycho-dynamic diagnosis as well as a co-therapist during the healing process. If the therapist knows how to read the signals of the horse she can get hints regarding the psycho dynamic of the client. These are much more specific and exact than any other diagnostic tools. The horse reacts to the tone of the body, the posture, the charisma, the energetic being of the person. Where we are fooled by the language or external appearances the horse already recognizes the 'soul' of the person. The horse unveils the unconscious dynamic and the hidden but essential topics. They become accessible and are ready to be changed.

Aspects of the body orientated therapy

Body, mind and soul can never be separated form each other. Psychotherapeutic interventions that concentrate only on the verbal and cognitive aspects neglect the physical aspects of emotions and produce an artificial separation. While working with the horse, which always involves touching, moving and being aware, this separation is dissolved and the access to the client's suppressed topics can be reproduced.

We are assuming that the body stores all experiences and memories of the person in its cells, muscles and liquids, independent from the fact, if they are accessible, suppressed or split.

Psychological and physical protection mechanisms lead to suppression that means that frightening and unbearable emotions are pushed from the conscious awareness.

It takes energy and muscle power to keep this so suppressing up and can lead to chronic physical problems (tension, breathing problems etc.) The healthy potential is available underneath the protective layers but often the person has no access to it.

Such suppressed memories can be reactivated through connection, for example through touch, movement, breath, increased awareness and then can be integrated in a healthy way into the personality. To change these protective layers permanently it is necessary to discover and renew the connection with emotions, that caused them originally.

It is known that the success of a therapy does not depend in the first place on the methodology. It depends mainly on the relationship messages of the therapist and on her respect, love and acceptance, together with courageous confrontation. Better than any therapist the horse can provide these qualities:

- Unambiguous physical touch (no encroachments)
- Feeling of being carried
- Direct feed back and response, without insulting
- because there are no narcissistic interests
- Interest and curiosity
- 'Blunt' confrontation
- Stable accompanying through all levels of the
- emotions

It is the task of the therapist to support the process and to play the role of a catalyst in the relationship between the horse and the client. Compared to a traditional therapeutic relationship the therapist stays more in the background during the work with the horse. She supports, explains, translates and sometimes, when it is necessary, interprets to support the client's awareness of the emotional process.

THE THERAPY HORSES

A therapy horse, working within the psychotherapy needs to have special traits and abilities. Of course he needs to be reliable and stable. He should be interested in people without being afraid or submissive. Instead of blind obedience we are looking for a horse with individuality, responsiveness, self esteem and sensibility. The therapy horse should not just react to learned signals. Instead of just function, he should cooperate. He should adjust individually and independently to each new contact.

To be able to cope with this difficult task, he needs to fully trust his owner (in the ideal case this would be the therapist).

For this reason I prefer to work with intelligent and rather dominant horses.

The therapy horse needs to know his boundaries, but may express himself within these limits freely. For example, a good therapy horse will not listen to the aids to walk on if the rider herself has not really decided to walk on even though the aids might have been applied correctly.

Only if the horse helps to confront the client with her invisible impulses, can the unconscious dynamic become the topic in the therapeutic process.

Besides the importance of certain stable management (open stalls/run in sheds and a life in a consistent herd situation) there are training methods which help promote the special traits I mentioned before. For example the TT.E.A.M. – Training of Linda Tellington-Jones is ideal.

The training supports the self esteem of the horse and the feeling for his body. It teaches the horse to be more aware of himself and to develop a stable balance. While the horse becomes a true partner and co worker, the trainer needs to possess a high level of self reflection and needs to abstain from power.

THE THERAPIST

Psychotherapy with a horse demands a lot from the person of the therapist. Her basic psychotherapeutic training should include body orientated psychotherapy or she should have extensive further education or experiences in the area of body orientated psychotherapy. She needs to be able to recognize and interpret body postures and movement patterns and to develop interventions, which initiate, support and conclude the psychodynamic process on the physical level.

She needs to be secure in training and handling horses. She must be able to understand and translate/interpret horse behavior and horse language. She should know the horses, she is working with, well. In the ideal case those horses belong to her. The advantage of working with own horses is that the therapist knows her horses so well, that she can recognize the very small signs and reactions and can compare them to those in other situations.

The horses are better motivated if they have a good relationship to the therapist. They are basically co workers and know exactly where they are needed. If the relationship between the therapist and the horses is on a good basis the horses work more independently and the therapist has more freedom to attend to the needs of the client.

It is important that the therapist knows not only how to ride but is also familiar with the self awareness process, she is accompanying the client through.

In the relationship to the horse she needs to be able to have enough authority so the horse feels safe at all times and acts accordingly. The safety during the psychotherapy with the horse mainly depends on the trust between the horse and the therapist.

A supervision is helpful because the therapist might be involveded on a very personal level. If the horses are very close to her, she becomes vulnerable through offering her horses to the client.

She is challenged to constantly reflect her own parts and differentiate between transference, identification and reality while at the same times she needs to demand and allow mutual respect between horse and client.

The praxis of psychotherapy with the horse shows that the different styles of the therapists are very personal, individual and different. The therapy is shaped by the choice of method as well as by the choice of horse and environment. It is not possible to speak of THE psychotherapy with the horse.

Psychotherapy with the horse is a new and young therapeutic intervention, a direction from which we certainly can expect a lot in the future. Because of the special constellation it allows for an effective, deep emotional work. The presence of the horse does not allow us to think in pathological terms but reminds us every moment of the always-flowing lifestreams.

SUPRAPARADIGMATIC INTEGRATIVE MODEL: THE GATHERING POINT OF THE PSYCHOLOGY IN THE RIDING THERAPY

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INTRODUCTION

The Riding Therapy is an educational and therapeutic method based on the Theory of the Neuroplasticity, and neurorestauration, that utilizes the horse as curative agent or of stimulation, inside a Multidisciplinary approach in the areas of the Health, Education (Psico-Educational) and horseback riding, with well definite roles, programs and proposed elaborate sequentially; seeking the development BIO-PSICO-SOCIAL of people portadoras of disability and/or with special needs. (Barboza C.).

This youth and private therapeutic alternative fights permanently by observing the fulfillment of the definitions and academic frameworks of each one of the interdiciplines that integrate it in order to being accredited (Lauhirat 2004); Since this point is born the need to prosecute the development of the Equinoterapia in a framework of integral rehabilitation as part of a process guided by a team interdisciplinario in which the psychologist complies a role Fundamental.

The Psychology in the country of the equestrian rehabilitation is practically new, and the specialists psychologists formation in the quite scarce area, al year 2003 date in which the XI International Congress was carried out of Riding Therapy of the FRDI (Federation Riding For Disabled International) in Budapest-Hungary, Brazil would present the quantity of 280 psychologists reputable specialists by ANDE BRASIL in comparison to the 506 pecialists physical therapists (Proenca G.); My country To the date not yet counts on psychologists specialists with formal studies in the area, what carries us to recognize that an important role as the psychologists who work in the Riding Therapy , is that of finding an I balance dynamic as for conjugating the different Psychological paradigms, in order then to be applied inriding therapy.

Under this perspective will be important to recall our main actor, "The Horse", which is defined in the faculty of medicine of Bobigny, by the psychologist Claire Mauchard as: medium, couple, mediator, maternal structure, emotional function and source of illusions. So many descriptions, an endless number of investigations, works and results in which the population benefited by the Riding Therapy is multiple: the world of the mental illness and psychological inconveniences, of the social maladjustments and of the physical disabilities.

Prado Juliana.(2004) during the development of the first Latin American Congress of Equoterapia, would present a first approximation as soon as al role of the psychologist as part of a team interdisciplinary, Thesis of Degree validated besides in the University of Mackenzie (Brazil), in said investigation could be observed that the psychologist inside its role would perform the following activities: orientation and aid in the family, backup for the team, development of the interviews anamnesis Of the patient al program, development of

the potentialities of the patients, contact and approximation of the patient with the horse, planning of the sessions, Development of the new capacity to face situations, development of the capacity to tolerate the frustration, and other as expression of feelings, socialization, self-esteem etc. Nevertheless the psychologists would not present a definite role inside the team of equinoterapia, a lack of communication would be observed among them and a lack of coherence in the way as attend their patients oriented since their personal epistemology and model in Psychology. Not existing unificación of paradigmatic criteria for the work in Ridin Therapy.

Consistent with the previous thing and having present that so much the techniques and methods applied in the therapy Iran in direct relation with the characteristics you diagnose, sicopatology and type of disability that present the patient, would be impossible to undertake the therapy based on a single model or paradigm, motive by which important will be to rescue al patient and to position it as only objective in the Therapy since a perspective bio-psico-social, based on Supraparadigmatic Integrative Model (SIM) in Psychology.

DEVELOPMENT:

A paradigm refers to an assembly of supposed generals that give form to the employed methodology in investigation, to the conception of the nature of the theory that goes to to be used and to the types of worthy problems of study. A paradigm shared or integrated not alone facilitates the communication but also offers order through a background etiológico that will give lines for future works and investigations on a Horse Riding Therapy; will imply an open attitude, a method, a clear epistemology and a comprehensive framework. A model integrativo permits to include any valuable knowledge as is it the riding therapy and should predict basic criteria to select and to deliver a general framework to contextualize it.

This model assumes that in psichoterapy some types of know-how are better than other and that the task of the clinical one is to discover which action will be framed of the best form in determined situation. In the case of the riding Therapy , the correct methodology will depend on the type of patient with the one that we are working, for example a good procedure to work the conducts in the patients in riding therapy could be a badly procedure for work the emotions.

Of this paradigm would derive the concept of environmental biological Cognitive Unit, which maintains that biological components (activity of the nervous system) and environmental components (stimuli, experiences) exist in each unit of knowledge and both do an all cognitive.

The integrative model will assume that the IF SAME will deliver meaning to the experience and the psicoterapeutas will try to seek and to create meanings in the patients. The Model present understands the following clearly applicable paradigms to our objectives in riding therapy, these they are:

1.- THE BIOLOGICAL PARADIGM:

Which says that the genetic characteristics, and neurofisiológicas which they can influence the genesis of the cognitions emotions and conducts, under this paradigm we can recognize and to evaluate in the interviews anamnesis preceding as organicidad, use of medicines of the patient, medical conditions, in synthesis axis III of the DSM-IV.

In the riding therapy we would be able to take it as base to understand the work with patients with Syndrome of Down among others.

In riding therapy that decisions to take under this paradigm?

- In the interview anamnesis, morbid antecedents.
- Employment of farmacoterapia.
- To Observe presence of some type of medical counter-indication.
- Situations of cerebral organic Damage in order then to apply test in the patient (Ej:.Luria Nebraska).

2.- THE PARADIGM ENVIRONMENTAL CONDUCTUAL:

Which says that characteristic you specify of the environment they can influence the emotions cognitions genesis and conducts, under this perspective we can include the condicionamiento classical and condicionamiento operating; applied in equinoterapia above all in patients with deficit atencional with hypercritical. In this paradigm we can evaluate the reinforcements to employ in equinoterapia, the expectations of autoeficiacia, the stress etc.

In riding therapy that decisions to take or tasks to carry out under this paradigm?

- To Assess al instructor of horseback riding in the implements to employ in the therapy.
- To Evaluate that type of reinforcements to apply to achieve the change in the conduct in the harmonious patients to its characteristics (Ej: Deficit Atencional)
- To Evaluate the dynamics to employ in the riding school in order to work the attention and retention. In the patients.
- To Employ techniques of modeling, programs of successive approximations and linkage employing the own stimuli of the riding therapy.

3.- THE EMOTIONAL PARADIGM:

It implies that emotional events and their structures can influence in the genesis of the cognitions, emotions and behaviors. The emotions can infer in the process to think, they facilitate certain memories, they influence the concentration and attention. In Equinoterapia we can evaluate under this paradigm anxiety in ours patient, motivation, aggressiveness, tolerance to the frustration etc.

In Riding Therapy, that decisions to take or tasks to carry out under this paradigm?

- To Decide to work with some significant figure of I attach: for example in Back Riding basing on the Therapy of contention.
- To Evaluate in case of children with inconveniences of the development (AUTISM) the criterion I diagnose but significant to undertake, to be the emotional one, to work with the maximum direct contact with the horse based on the principle of the

corporal heat (39° of the horse) as base for the development of the emotion (Teoria of Harlow).

• Ideal to work with children in situation of abandonment or social risk.

4.- THE UNCONSCIOUS PARADIGM:

Activities in which the patient does not realize and that operate out of the "awarnes" they can influence in the genesis of the feelings, thoughts and emotions, under this paradigm we will be able to evaluate in equinoterapia patient with defense mechanisms, and clearly the not verbal language above all al to be in contact with the horse.

In Riding therapy ,that decisions to take or tasks to carry out under this paradigm?

- In patients with inconveniences of the development and emotional to work the effect creadiling, and retrotraer to the primary emotional communication.
- To Work on the base of the archetypes and unconscious fantasies of the boy toward the horse (Joung).

5.- THE SISTEMIC PARADIGM:

A system implies a totality and these alone they can be understood as a function of the total system, the parts interact in form reciproca; in equinoterapia we can observe the system "team interdisciplinario", in which each member will present roles and limit permeable. In this paradigm he will be the Homeostasis the tendency al equilibrium of the system.

In riding therapy, that decisions to take or tasks to carry out under this paradigm?

- The influences of the subsidiary paternal relations, the styles of parents and as they can affect positive or negatively in the development of the therapy, example: very apprehensive parents that limit the development of the process or in another extreme absent parents.
- To Evaluate the reason of the possible fears to present for the patient: be these toward the horse, the height of the animal or to the separation of the significant figure.
- To Evaluate if is recommendable or not the work with brothers being these integrated al development of the sessions.

6.- THE COGNITIVE PARADIGM:

Activities or specific cognitive events can influence in the genesis of thoughts and emotions, when these structures are seen affected they carry to cognitive errors, automatic thoughts, cognitive distortions etc. Under this paradigm in equinoterapia will be able to evaluate car image, cognitive structures, styles atribucionales, example: Attributing certain virtues or properties al horse.

In Equinoterapia that decisions to take or tasks to carry out under this paradigm?

• Work in cognitive base conductual applicable above all in patients in social risk, and addicts.

- To Evaluate its thoughts and cognitive distortions in order then to develop intervention strategies. And extinction of conducts.
- Evaluation as for Intelligence test application. Before and after process terapeutic.

THE SELF:

The model integrativo assumes that the 6 paradigms seen previously are connected coordinated and integrated with the IF SAME of the person, being these the point of encounter of the Psychology applied in equinoterapia; The fundamental functions will be: Identity, significant experiences, control and sense of the life.

CONCLUSIONS:

To the Psychologists specialists in riding therapy, requires us a constant updating in the area deepening the study and the investigation, what will contribute in equinoterapia to that this be but validated by the science.

The paradigms of the **SIM** contribute to the psicoterapia commodity that the system SELF of the patient transforms into ESTIMULS TROOPS; this is, in mobilizing experience of change the previous thing facilitated in an own environmental middle of the equinoterapia as change of "setting" terapeutico al of the traditional therapy.

The supraparadigmátic Integrative model applied to the riding therapy, enables the to go generating a PSICHOTERAPY INTEGRATIVE that go beyond a mere eclectic approximation.

It Permits to agree to a PERCEPTION OF THE 360 DEGREES of the psychological dynamics and to rescue every force of change aportativa, any be its origin.

It Permits to contribute to present the adequate questions, to orient the investigation, to order the data, to use a common language, to promote the psichoterapy.

This Model manages to INTEGRATE as a form to gain depth in the theory and power in the forces of change.

The riding therapy, enables the work of the HERE AND NOW still when the history is integrated like source of diagnosis, of "awareness" and of learning.

Finally and according to it previously exposed we can contribute a new definition of Equinoterapia since the Psychology:

Ecuestrian Rehabilitatión or riding therapy (Equinoterapia=Spanish)

"Psichoterapy Integrative supraparadigmatic complementary, in strict severity sistémic because to integrate to interdisciplinary teams, family, voluntary and the horse as the agents of change, the previous thing under a context humanist in which the main characteristic will be the change of setting terapeutico and the principles of the humanism (Burgental); employing in its intervention direct cognitive techniques conductuals in children and adult bearers of some physical and/or mental disability and with special educational needs; to the active participation of a horse which according to his natural characteristics and therapeutic principles will intervene under the unconscious paradigm as figure transcicional of I attach (Winniecot) and arquetípic exactly such." (Urra F, 2005)

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THE PROFISSIONAL OF THE PSYCHOLOGIST IN THE EQUINE THERAPY: ACTIVITIES, TECHNICS AND DIFFICULTIES

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1. PRESENTATION

The first contact with Equine Therapy happened during my graduation in 2000. I didn't have any idea that I could conciliate two distinct areas of big passion, to me, psychology and riding a horse **therapeutical riding method that works with deficient people with the aid of horses. The** interest in searching about equine therapy began in 2001.

At this time, I used to act as a volunteer in a center of equine Therapy in Sao Paulo – Brazil and the contact with it practices arose some questions about the **adopted methodologies**: how is the practice of **psychologists in others centers of equine** therapy? Will **the used** techniques be the same practiced by other centers of equine therapy? Are there any techniques that I don't know whice have great results and are satisfactory? How can I contribute for the development of Psychology in equine therapy? The reflections on the practice by a psychologist of the equine therapy team allowed the search of bigger knowledge by means of courses, readings, debates with the professionals of the team and with other professionals of health, education and riding. These contacts arose my curiosity and interesting in knowing the practical of the psychologist in the several centers next to my area of performance. The first research ("The practical of the psychologist in the equine therapy") was made in 2002/2003, as work of conclusion of Psychology course at Mackenzie University (São Paulo - Brazil), as part of requirement for the attainment of the degree of psychologist. With the spreading of this work in the electronic magazine of equine therapy, in Meeting of Scientific Iniciation and presentation of course of extension on the subject, I have made innumerable contacts with psychologists and students of Psychology in Brazil interested in knowing the work of the professional of Psychology in the equine therapy. Thus, in August of 2003, when I initiated the master degree in Riots of the Development, I got great contact with scientific materials and readings that made possible better criticism, reflections and concerns about the research initiated in 2002.

Concomitantly, in this period I initiated my professional career and I moved to a region where the practice one of the equine therapy is little developed, essentially about the performance of the psychologist, although there is a rich and stimulating ambient for presenting great extension of green area and creation of horses. Thus, these factors have stimulated me, still more, to search about the practice of the professional of Psychology with the objective of verifying the techniques used in other centers of equine therapy. Moreover, there was a great interest in knowing the activities of this professional and the obstacles and difficulties found in its practice in order to facilitate and to divulge the work of the professionals who act in the equine therapy. Area therefore, I opted for carrying through this work on the activities, techniques and difficulties found for the professionals of Psychology in the equine therapy area, through a research with 6 (six) psychologists who work in 6 (six) centers of equine therapy of the city of São Paulo (Brazil).

2. INTRODUCTION

The Equine Therapy has been getting some special attention and some significative divulgation by all means of communication all over Brazil. Due to the fact that it presents some rich contact with nature and it works with horses in a pleasant and ludical way, it has become an alternative for the therapeutic treatment. Literature deals was several therapeutical and rehabilitation methods to work with people who present some deficiency. The equine therapy, although being a method recently implanted (1989) in our country, has been developed in the practical , ethical and scientific aspects, becoming a significant source of studies, having more and more frequent works in this area. The interest for the subject has been shown by the different professionals who work with it, amongst them, professionals of Psychology.

3. OBJECTIVE

This work has had as its objective, to characterize the actuation of Psychology professionals who work in Equine Therapy centers in the city of São Paulo. The specific objectives have been: identifying and describing the techniques applied to the patient's treatment in Equine Therapy; learning difficulties and obstacles faced by the professional in his/her daily practice. This study has the following survey question: how does the psychologist develop and direct his/her techniques towards the patient with disability and/or special necessities in Equine Therapy?

4. METHODOLOGY

The research data have been collected through semi-structured interviews with six psychologists who work in Equine Therapy centers in São Paulo city. They have interviewed 4 (four) psychologists who act in the centers of equine therapy registered by the ANDE-BRASIL (National Association of Development of the Equine Therapy - Brasilia - Brazil) and two psychologists who act in the centers of equine therapy which ate not registered, but recognized regionally. A not-structuralized script has been used by means of which the interviewed person was requested to express himself/herself freely on the boarded subjects in the interview, being possible to discover the implicit and determinative factors in the studied phenomena. In this way, it was possible to get information about the experiences, the attitudes, the opinions, the difficulties and obstacles, and the behavior of each professional of Psychology that acts in the main Centers of Equine therapy in the city of São Paulo. The content analysis has been used and it has led to three categories with fourteen sub-categories which have been stipulated taking into account the biggest number of similar answers in relation to the raised content.

5. RESULTS

It is possible to notice that the psychologist, in the equine therapy, initiates his/her performance with the psychological evaluation of practitioners, by means of analysis with the parents or practitioners, playful comment and psychological tests, depending on the responsibility and the age of each individual. It is possible to notice that the interviewed psychologists work with Equine Therapy according to the affective contents emerged by the
practitioner or projected onto the horse, and signal the main aspects to be worked in the patient through verbal form or by means of ludical activities according to the theoretical referential, age, commitment and objective of each practitioner. As far as to the courses of formation in equine therapy and the proper demand of practitioners in equine therapy centers are concerned, they are not greatly related to the emotional aspects. Many centers of equine therapy, as those where the interviewed psychologists act, deal physical deficiencies, prioritizing, by this way, the physical, the habilitation or rehabilitation of the practitioners. Moreover, the partner-economic reality of each center of equine therapy is a factor that has to be taking into account, therefore, depending on the characteristic of the institution (Philanthropic or Private), it will be possible to have problems in the quality of the attendance, since great amount of practitioners is taken care of in a short period of time.

6. CONCLUSION

The use of the theoretical referential is not sufficient to base the psychologist's practice in Equine Therapy since, in many cases, they are essential for the creative usage, intuition and clinical experience, and as it works in an environment so different from the conventional one, the psychologist can have a greater spontaneity and flexibility in relation to neutrality. Many professionals of psychology who work in the equine therapy present doubts about their own role and question: "Am I doing it tight?" We can notice that there is a lack of communication and spreading of technician-scientific research among the professionals of psychology who act in the equine therapy. It is still necessary, to say that, due to delimitation of this work, the gotten results do not have to be generalized, therefore the general objective of it was to characterize the performance of the professionals of Psychology in the centers of equine therapy of the city of São Paulo. Thus, the gotten and analyzed results are referring to the reality of the equine therapy centers, in which the interviewed psychologists work. It is expected with this survey, a contribution to raise in the involved professionals the consciousness of the importance of developing scientific theoretical surveys propritiating a greater development, knowledge and usage of this therapeutical method.

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Key words: Equine Therapy; Psychology; Disability; Rehabilitation.

PRE SPORT RIDING THERAPY – A HORSE AND A FRIEND

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THE PRACTICE OF RIDING THERAPY IN THE PERSONAL DEVELOPMENT OF YOUNG PEOPLE WITH MENTAL DEFICIENCY DIAGNOSIS BY MEANS OF THE PRE SPORT PROGRAM

INTRODUCTION

In the year 2003, the City Hall of Concepción, initiated a program of six months of treatment with riding therapy, destined to stimulate the personal development of young people with special needs. The attention was offered to two special schools, one for young blind people and a disciplinary center for children and young people in social risk

After four months of therapy, three out of the six students pertaining to the Escuela Especial Chile España diagnosed with moderate mental deficiency, managed to be incorporated to the pre sport program, continuing their participation the years 2004 and 2005. Their advances in the physical, social and intellectual, were remarkable, surpassing barriers that nobody imagined they would obtain in their personal development. At the moment they continue participating, in recognition to their effort and by the merits in work of support to their classmates.

This project counted with the supervision of a psychologist from "La casa de la familia", dependent organization from the City Hall, ordered to coordinate the work of the Riding Therapy Instructor, with the special teachers of the Escuela Especial Chile España, two assistants in Riding Therapy and 6 assistant students, from the special education Career of the University of Concepción.

DEFINITION OF MENTAL DEFICIENCY

Throughout the years, different terms have been used to describe the phenomenon. Among others it fits to mention terms like idiotic, imbecile, mental weakness and subnormality, and has been added more or less lucky adjectives to them when the intention was to precise their adaptive possibilities. The definitions are numerous (Bijou 1963, Dunn 1968, Mercer 1970, Kolstoe 1972), but none of them seems to be free of critics. Those that obtain greater approval between the authors, are the ones offered by the A.A.M.D. (American Association for the Mental Deficiency). In this the mental delay of the following form is defined: " mental deficiency talks about general an intellectual operation significantly inferior to the coexisting average along with the deficit of adaptive conduct and is observed during the development process. (Grossman 1983)

Inicial objective of the Project:

To stimulate the development of young people with mental deficiency, in the perspective of improving their self valence, through their functional, structural, cognitivo development - affective - social, sensorial and of communication, by means of the execution of a program of psycoeducational **Riding Therapy**, with pre sport projection that is complemented with the development of their school activities.

PRESENTACIÓN OF THE CASES INDIVIDUALLY:

Felipe G.L: Young people of 16 years, was selected to be part of the Program "Equinoterapia un recurso Rehabilitador 2003" of the City Hall (IMC), because the equino therapeutic work was considered presented a good alternative to improve his quality of life. At the beginning it was evident his lack of communication; in spite of being very anxious, he did not speak much and his face expression did not show his emotional state or psychic. Little by little he became more self confident and in the moment he discovered his capacities, his vocabulary was increased simultaneously and at the same time his desires to communicate with the rest. For his treatment the following specific objectives were presented :

Functional character:

- To diminish excessive motor restlessness

Cognitivo, affective and social character:

- Improving the capacity to surpass the frustration
- Improving the self-esteem

Structural character:

- Improving position and self image

Sensorial character and of communication:

- Stimulating and to improve the vocabulary through more effective communication.

Andrés P.T: Young of 19 years, was selected to be part of the Program "Equinoterapia un recurso Rehabilitador 2003", mainly like a form to increase his self security. Initially in the riding therapy, it was necessary to work with two lateral assistants, since the lack of security in himself and the fear to fall from the horse, was so, that he shouted whenever the horse took a step. With time, he was improving his balance until managing to ride without help. For his treatment the following specific objectives were presented:

Functional character:

- Improving the muscular tone.

Cognitivo, affective and social character:

- Increasing the disposition to obey and capacity of concentration
- Improving the capacity to surpass the frustration
- Increasing the self-esteem

Structural character:

- Improving position and self image

Sensorial character and communication:

- Stimulating and improving the vocabulary through communication.

Catalina H.C: Young of 18 years, was selected to be part of the Municipal Program, mainly like a form to improve her verbal communication and social contact. At the beginning her interaction was minimum. She only rode, but to make her speak it was necessary to stimulate her very much. For her treatment the following specific objectives presented:

Functional character:

- Improving the walk, coordination and balance.

Cognitivo , affective and social character:

- Increasing the disposition to obey and capacity of concentration
- Developping the affectivity, social contact and emotional stability
- Increasing the self-esteem

Structural character:

- Improving position and self image

Sensorial character and communication:

- Stimulating and improving the vocabulary through communication.

PROCEDURE

For the execution of the project, we worked initially in the psycoeducacional program, in that participated an instructor of therapeutic riding, 2 **Riding Therapy** assistants and three special teachers, with the support of 6 assistant students from the special education career of the University of Concepción.

The Program was developed with a frequency of twice per week, in individual sessions of 30 to 40 minutes.

During the development of the psycoeducational program and after four months of work, the three riders that fulfilled the specific objectives of the project, were promoted to the pre - sport program.

The evaluation criterion and the goal to initiate the following step, was according to the observations made by the multidisciplinary team:

- To demonstrate remarkable achievements according to the specific objectives presented at the beginning of the program.
- To improve their school capacities
- To have the capacity to control and to direct their horse independently in the arena.

PASSAGE TO THE PRE SPORT PROGRAM:

YEAR 2003:

DURATION: 2 month - two sessions per week

Objective of the Pre Sport Program

Improving physical and social capacities obtained during the psycoeducacional program by the students promoted to the pre sport program , working in places properly qualified (elliptical arena of jump) in order to obtain skills in the individual conduction, to the step and horse trot, to improve their abilities in exercises of turn around and in addition to fortify their capacities to relate socially with their teammates and therapeutic team were all objectives of the program.

In the pre sport work , the three young people began to work together. Although the passage of psycoeducacional program is not simultaneous for the three of them, it takes place with difference of weeks between each other, the first to be promoted was Felipe, later Catherine and finally Andrés.

The work is directed by the Riding Therapy Instructor from Centro de Equinoterapia Concepción, who works with the support of two assistants in Riding Therapy. The supervision of the program was charged to a Psychologist from the City Hall but was evaluated by special teachers from the Chile España Special School.

Andrés in spite of his fears and with certain weaknesses in the horse trot, advanced to a pace a little slower in comparison to the other young people, nevertheless, their achievements are very similar in realtion with the demands.

As a form to give security to this work, it was begun to work in the elliptical arena of jump at the hand. In this track, the possibilities that a horse runs or looses control are minimum, for that reason it was chosen to begin working evolutions of the steps to horse trot, with saddle to ride, in order to obtain the form of raised horse trot. Once obtained, this goal, already with the capacity to lead their horses in the arena, the riders initiated their work in steps of cavalletti to horse trot, to conclude the program, with a circuit of cavalletti to horse trot, in the normal arena.(20×60 mts)

The abilities and skills obtained in this program fully surpassed the objective projected for that year, the step of cavalletti was not considered, nevertheless it was included, because of the well-known advance and the desire of the riders to make entertaining new things which implied a greater challenge. The students were also motivated when they saw how other young people of the competitive team of the René Varas Asenjo Riding School, which made their practices daily in the arena.

The voulting work was also developed with great success in this arena, obtaining the development of skills never predicted to obtain in such a short time, such as putting themselves on top of the saddle, exercise of bell return (turn around on the back of the horse and fall standing on the ground) and other similar exercises.

YEAR 2004.

DURATION: 6 months - two sessions per week

Objective of the Pre Sport Program

The objectives of the program were improving physical and social capacities obtained during the previous year by the youngsters from the pre sport program, assigning to them tasks that mean responsibilities in front of their companions in the roll of conductors of the horse on foot, and offering them the additional possibility of practicing the equitation as a sport as a way of a stimulus by his performance as a part of the therapeutic team.

In the year 2004, the three young people were not considered in the municipal program, since this benefit is granted for only a year as a way to give opportunities to other children with special necessities. Due to this and previous analyses with the City Hall of Concepción, the Escuela Especial Chile España and the therapeutic team from the CEC, and the achievements obtained by these young people during the year 2003, they were offered the opportunity to continue attending the therapy twice per week, but this time in another category, like *"conductors of horses on foot."* This idea was analyzed by the members of the therapeutic program and after coordinating some details, mainly of security, it was decided to carry out the project. With the correct precaution and suitable direction, everything was done without any problems. The young people fulfilled their task under the direct and immediate supervision of the riding therapy instructors.

Since then, the new members of the support team have begun to work with a specific horse, about which they had to worry to clean it up and to equip it. Little by little the bond with the animal became more intense and the work of the conductors of horse on foot like the one of the riders developed in an atmosphere of affection and special bond. The moment of the farewell was every time intense and full of caresses; the carrots were never absent, like the hugs and kisses.

Attending like part of the work team, this time in benefit of their classmates and having a horse under their responsibility, that is to say "their horse", gave these young people another tatus within the school. They no longer played the sole role of students, but rather were assistants in the therapy and in exchange for their work. They received equitation classes, which considered the following :

- Conduction to the step, horse trot and gallop.

Work in arena, everybody together, in order to obtain capacity of coordination and group discipline.

- Step of logs

First phase before the jump, obtaining to perceive the distances between a log and another, as a form of preparing for the later work in the step of cavalletti.

- Step of cavalletti

Jump of cavalletti, starting to a height of 15 cms. To finish at the end of the program with 50 cms. This exercise requires a lot of coordination, balance and self confidence, which allows measuring visually the distance to the obstacle and reacting with the bend of the body the moment of the jump.

- Vaulting

The vaulting exercises , allowed to reinforce the self-esteem and self confidence of the riders; little by little the demands were increased so that they progressed without stress nor excess of pressure. The exercises made were: to kneel down on the saddle, to put themselves on top the the saddle, to cross the legs on top of the saddle and ride again , returned from bell (sit sidewards, pass the legs over the head and fall standing on the ground). Two of the riders managed to make scissors (sit on the saddle, cross the legs backwards in order to be riding looking backwards).

The exhibition of these skills in front of their classmates from the psycoeducational level, each time that it was needed to make a demonstration, made them feel that they were better than the rest. Without being arrogant, they showed their satisfaction for the achievements obtained, reinforcing their self-esteem. On the other hand, they were thankful with that "friend", the horse, which allowed them to ride on its back and to make the skills that were admired and celebrated by their classmates.

Demonstrations in front of parents, teachers and authorities, costume parties and shows, completed the pre sport program of the year 2004. Showing themselves publicly in front of other people not part of the program, being interviewed by the local press and to appear in television, showing their skills and abilities, without any doubt , contributed in the personal growth of these young people, who became the face of the riding therapy in the special schools of Concepción.

YEAR 2005.

DURATION: 6 months - one session per week.

Objective of the Pre Sport Program

Keeping physical and social capacities obtained by the riders included in the program during the previous year, progressing in the allocation of tasks that mean responsibilities in relation to their classmates, offering them the possibility of practicing the equitation, increasing the commitment to cooperate in the work of support to the riders included in the program the year 2005 by means of personal example were just some of the objectives of the program.

During this year, they continued participating with the same designated horses from the previous year, increasing the bond and attachment with their horses. The friendship with this animal after several months of absence by cease of the program only strengthened their commitment to each other. "I take care of you and you take care of me", that was the slogan of the riders, in the sense of taking care of the horse and this one took care with its harmonic movements that the ride and work became pleasant.

The cleanliness of the horses, to equip them and feed them, were assumed activities as an extra responsibility. Often the school bus had to wait because of the accuracy with which the riders worried about spreading the food in the feeding-trough.

Felipe and Javier, continued participating in the riding therapy program for third consecutive year as conductors of horses on foot. This task, which requires capable people from any point of view (the responsibility that means to control a horse in the work of riding therapy) was done in excellent form by these young people and although they were closely by an equitation instructor that participated in the therapy next to them, their suitability in the subject was a part of the persistence, dedication and conscience of responsibility that they demonstrated, all worthy to mention.

Catalina could not continue attending together with her riding classmates, although she continued the activity. Once a month she visited the Center, on weekends; her boyfriend went with her, a young person pertaining also to the Escuela Chile España, that rode next to her, becoming another rider of the young people who were part of the group of riders of the Centro de Equinoterapia Concepción.

CONCLUSION:

The riding therapy demonstrated a remarkable experience of development and growth, in every aspect for Catherine, Felipe and Andrés. Before initiating their work of riding therapy, their face expressions showed a sensation of emptiness and lack of self confidence. The first time they rode a horse their fear by the proximity to such a big and physically powerful animal frightened them very much and made them feel physically unstable. The riding therapy was an important experience that deeply marked their lives; the bond with the equitation instructors and the horses is something that they will hardly forget.

The love towards the horse, the affective bonds with it and with its help and with the rest of the terapeutic team and their classmates changed their way to see life. Their horse was the form that enabled them to communicate in the language of solidarity with everybody who was part of this process.

Today, Felipe and Andrés are assistants in the school. Their sense of responsibility allows them to carry out an important duty that that is directly related with the security of the facility, reflecting a remarkable development. These two young people who have surpassed in comparison with their classmates and coincidently they both are part of this program of the riding therapy . In the case of Catalina, having a boyfriend, demonstrates her growth in the capacities of social relationship, that are reinforced when participating periodically in riding activities that she enjoys.

The growth of these young people, is not a coincidence. The received affection from their teachers and riding instructors (a key ingredient in this therapeutic modality), their persistence produced results beyond those that were expected.

Their horse, the unconditional friend which does not know about intellectual , social or physical differences, has become an important part of their lives. That horseshoe behind the door of their rooms or the tuft of horsehair that one day they took as a souvenir, is like having close the presence of the echinus friend, the friend that always waited for them with its ears ready for caress, the one that never bothered by an order badly issued or an involuntary pull of reins, the one that carried them on its back without asking them where they lived or what was their last name. Without doubt the experience will always live in their hearts, occupying a place that surely many people will never obtain.

This is first experience with this type of work that is known in our country and we considered that it represents an excellent manner to help those who need a little push to go beyond expectations (to surpass themselves). Not only because they can, but because they deserve it, because we think that Andrés and Felipe can become more than merely door helplers or Catalina can have more than a family... because we are *"moving mountains"*.

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ASPECT AND ANSWER - Manual of Narha.

ANNEXED:

- Photographic testimonies
- Certified from the Principal of the Escuela Especial Chile España.

MAGDALENA BUDGE DEL PINO Psychologist Riding Therapy program

JOSE MIGUEL MANZO RUIZ Riding Therapy Instructor Riding Therapy Program

HORSES AND PSYCHOLOGY - THE SEARCH FOR IMPROVING THE QUALITY OF LIFE OF PERSONS WITH NEUROSES AND PSYCHOSES

Author: Gabriele Brigitte Walter - Brazil Co-author: Ute Hesse

The questions are: with a horse or on a horse? In group or alone? How to define the most adequate equestrian activity to fit "that" person? The answers are contained in the study of the various affections in the area of psychology. The way they work and with physical and/ or emotional and social structures are damage in the various pathologies will indicate the best approach within the equotherapy. To know and to recognize the individual necessities of the person is imperative to the correct therapeutic programming.

The aspect of self-control, self-esteem, life experience of failures and frustrations, as well as dealing with fright and anxiety and learning how to negotiate social integration, are some of the many facets dealt with in equoterapy. The similarity of ethological behavior of horse and human being can be utilized for the necessary self-knowledge that is essential for knowing and accepting the necessities and management of same. The ability of analyzing and supervising the actions, foresee attitudes and proper planning are necessary aspects for an effective learning of living.

The correct use of the resources supplied by the horse will bring internal changes built step by step during and after a lesson, introducing the search for cure.

Actually, the lesson begins for the purpose of showing up at the premises: leaving the external world to enter the real and alive world of the horse. Also, after the lesson, have to experience parting (leave-taking) which means the loss of the recently conquered which many times is a non-pleasant perspective. During therapy one experiences the acknowledgement of the answers to the questions as well as the opportunity to transfer them to daily usage, where they will show the expected result.

The therapeutic riding takes over, (in a broad meaning) psychic diseases, in an intermediate position among medicine, psychology, pedagogy and sport. The multi-utility seen from the point of view of its genesis of psychic diseases, demonstrates the possibility of numerous approaches to establishing a diagnosis, treatment and prognosis. The correct identification of these facets is of utmost importance for the correct usage of the therapeutic equitation. It is advisable to use a different therapeutic approach when there are mental retard, drug addiction, psychosis, borderlines, neuroses and psychosomatic diseases, each of these conditions requires a different approach, which will be studied in the present work.

For being the study of therapy of emotions and feelings, psychiatry is a field of medicine but presents points of contact with psychology, psychotherapy, pedagogy and philosophy. In this sense one may consider that psychiatric diseases cover a very broad range and must be addressed in a particular and personalized manner. Seen through this perspective, the treatment of a psychiatric patient lies in a field covered by medicine, psychology, pedagogy and sport with alternated focuses, assuming importance according to the phases of pathologic expression.

The approach originally started with psychoanalysis seeking initial treatment directions without the simultaneous use of psychotherapy. That approach has changed and now we seek a multiplicity of therapeutic perspectives. It is from that perspective that therapeutic equitation assumes its mediating role connecting medicine, psychology, pedagogy and sport. Specifically, when addressing mental diseases, one can perceive its diagnostic, analytical, psychodynamic and learning importance with an individualized procedural orientation.

The multiplicity of diagnoses, the need to know the diagnostic origin and the pathologic causality will indicate the approach and the objective of each phase of treatment. Knowing the diagnostic origin, the structuring and manner of development of each diagnosis is fundamental for the structuring of this approach. There is, however, a common point in psychiatric diseases: a change, which is different in each process, in the capacity of intraand inter-personal relationships. This is when the horse comes in.

Mental and emotional diseases or "the suffering of the soul" are expressed into a set of body symptoms and behavioral changes. Social relations and/or the working capacity are significantly affected in many cases. The causes and origins of those symptoms may be investigated in the beginning of an individual development and – as a rule – they are related to the first experiences of relationship and interpersonal relations. That social relationship experience in the infancy is "stored in the body" and is hardly ever verbalized. Those experiences are expressed, for example, in the body posture, self-knowledge (therefore, self-perception) or altered inter-knowledge, perception of reality or establishment of contacts. They are kept in the subliminal non-verbal field, hidden in the remote area of memories and, therefore, without the possibility of being experienced, that is, in the abstract mind.

The relationship with others brings the feeling of danger for the fear of "reviving" traumatic and stressing experiences that could trigger a neurotic or psychotic episode.



AGE	NEED	PSYCHOLOGICAL CHARACTERISTICS	ADULT PERSONALITY DEVIATIONS	ATTITUDES CONDUCT
NFANCY UP TO 18 months	Complete physical andemotional care	Complete and aggressive dependence from adults at least in the first 6 months	Resentment against childrenFear of failing as a mother Rejection to the biological function of being a mother	Overprotection Anxiety Rejection Kejection
CHILDHOOD FROM18 months to 3 years old	Training Need for love in attitudes	Rebel in dependence	Compulsion or demands Lack of interest	Perfectionism Language Abandonment Sociability Manipulation
PRESCHOOL	Sociability. Interest in external things and acceptance	Sexual curiosities – hostility to family authority	Sexual problems Problems in accepting hostility	Seduction Hostility Schooling
SCHOOL	Identification with parents	Reduced dependence. Adequate identification	Education difficulties	Educational Malformations Tantrum anxiety
ADOLESCENCE	Emancipation, flexibility of adults in acceptance	Tempestuous. Independence, dependence (child and adult)	Defense of parents against delinquent impulses in himself/herself Fear of parents' aging Immaturity of parents who are unable to assume responsibilities	Rigidity Refusal Excessive permissibility

ETIOLOGICAL CLASSIFICATION

A horse becomes useful at this point because it is clearly different from people of previous or current relationships. The horse enables the relationship experience without the fear of reencountering traumatic relationship experiences, whether of repulse or dependence; it keeps away the fear of rejection and incomprehension. The patient can now experience a relationship through his/her real SELF, feeling something like "harmony" without the need for disguising or dissimulation. The horse may help the psychotic patient establish a contact outside reality by meeting the patient's need for complicity without any censure and show the path to reality.

In such case the top priority is not necessarily riding the horse but establishing a relationship with the horse. It is an opportunity for a schizophrenic patient or an adolescent or a child with a serious behavioral disorder, through the contact with the horse to have a chance of establishing a relationship in a logic and happy manner with reality. The patient with a very frail and weakened EGO (psychoses, depression, autism, etc.) will have a chance to strengthen self-esteem, which will help him/her not to seek to escape into regression and negation of reality.

As an activity for that pathologic population, for example, one may work with treating, conducting, riding a horse, etc., in other words, dealing with the horse, therefore "forcing" the patient to communicate with others to be able to work with the horse.

The neurotic patient, on the other hand, suffers for submitting his/her desires, needs and aspirations to a rigid superego that requires an unreachable perfection. Here we can make a correlation between pathologies such as phobias, neurotic depressions, psychosomatic diseases, dependencies. In this case, the horse assumes the figure of projection of repressed desires, needs, and anguishes. It is the patient's chance to bring questions to the conscious mind and provide answers.

By orienting the therapy to being conducted on horseback, the patient has the experience of letting himself/herself to be carried, expressing trust, improving self-esteem and feeling secure. That experience may mobilize the recall of previous experiences where the patient felt secure or insecure leading him/her to a verbalization or graphic expression.

By getting aware of the mechanism that governs the pathologies that lead to a neurotic or psychotic episode one may perceive more clearly how to organize a schedule in the sphere of therapeutic horse riding.

DEVE	ELOPMENT OF FEAR			
BI	OLOGICAL FEAR			
DCVC				
PSIC	HOLOGICAL FEAK			
CO	NDITIONED FEAR			
Loss	of intellectual control			
	•			
	ANXIETY			
	РНОВІА			
DEPF	RIVATION OF LOVE			
Need or search for love				
External attit	ude Internal attitude			
Desire to attract attenti	on Desire to remain as a child			
Showing-off	Emotional immaturity			
Need for company	Dependence on the family or environment			
	Desire to maintain sources of love			
	Suggestibility			

USE OF THE HORSE

• Observation: observing the horse in free action enables the patient to detect differences and similarities, from a distance, remaining in a safe and "protected" area. The patient sees how the horses form a group, how they defend themselves, how they relate to one another. Curious horses approach spontaneously seeking contact and accepting the challenge of a contact response. The galloping of a free horse fascinates, scares, and mobilizes emotions that may be recognized and dominated. The "fear of the unknown" may be addressed here. Dreams that didn't come true are also triggered by the horse. It is a field of reflection on reveries and

taboos using the symbolic archetype of the "Great Mother" who carries but also "swallows", of the "Wise Father" who is a provider but also punisher; it is the challenge to the child's animus seeking protection, courage and freedom.

- Treatment/feeding and saddling: this requires a strict contact with the field of reality and mastering logical sequences. It enables observation of each horse's reactions. The fear of physical contact with the "gold" is gradually dismantled.
- Roundup: in the horse without the girth (equipped only with the roundup belly band), roundup will enable a close contact with the horse's movement. The body feeling gets into the field of consciousness enabling the integration with the body scheme in a very positive manner.
- Mounting: independent, it ends by being a natural consequence of the process. The therapeutic work has the purpose of leading to self-recognition, perseverance, improved mastering of the self in unexpected situations, improved management, and decision-making capacity. The use of training/drilling, using figures and paces, is a very good exercise for this purpose. The surrounding of nature provides the joy of living and the feeling of liberation and freedom (that must also be managed by the rider).
- Conducting: by hand, performed by the patient, is an exercise that addresses the patient's condition to manage his/her own leadership impulses, promotes perseverance and dominance of the self that is recognized during the task. The opportunity to test, promote and be subjected to orders, as they are expressed and interpreted, such as dealing with the frustration of non-obedience of the "other" are themes to be addressed in this exercise.

In all those exercises the diversity of personalities of the horses is of paramount importance, and may reflect the sub-conscious behavior of the rider.

Individual or group riding? This is a question that will be defined according to the diagnosis standard. For example, individual assistance to psycho-motility weakness is important in the beginning because the student presents a better response not being confronted with the group. In spite of the individual assistance, the patient is already confronted with and has to manage a group: the horse and the therapist. Such relationship determines the dynamics of the session. Transference and counter-transference occur through a third element – the horse – with an important significance in the context. This is a group where students soon learn to be a supporting rather than a confronting group. They learn to curb the anguish of being observed and "evaluated" in their performance.

On the other hand, by dealing with an individual with psycho-mobility inhibition, the group assistance favors a better response because such inhibition is overcome when the individuals are placed in confrontation situations.

THE THERAPIST:

One should be aware of the professional training required for the therapeutic riding approach. No matter how pleasant and exciting such approach may seem one can never forget the difficulty and particularity involved in the treatment of a psychiatric patient. Therapy using horses assumes, first of all, a very good knowledge of mental diseases and their psychodynamics, considering that not everything that is done with the best intentions is truly useful to the positive development of the patient's personality. Here we should warn

about the so-called "help syndrome", that is expressed each time the therapist, in his/her intent to help the patient, actually seeks a solution for his/her own relationship problems. The knowledge that the horse alone cannot change the problems or provide the cure is essential. Loving the horse and a great deal of common sense, are certainly necessary but not sufficient for an effective approach on the part of the therapist. In addition to a basic training, theoretical and practical knowledge in the field of psychiatry is required. We should also point out the need for a personal psychotherapeutic monitoring on the therapist himself/herself.

When we mention horse knowledge we are not referring merely to knowing how to ride a horse but knowing the "horse" in the broadest sense of the word. The horse is our instrument of work and must be recognized as a co-therapist; therefore, the therapist needs a deeper knowledge on the horse's origins, way of life, symbologies, approaches and handling.

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THE INFLUENCE OF RIDING POSTURE AND HORSE'S GAIT SPEED AT LUMBAR ERECTORS MUSCLE ACTIVATION TROUGHT SURFACE ELECTROMYOGRAPHY

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ABSTRACT

Subject: Once riding a horse, individuals get exposed to its movements, receiving neuromotor stimuli, transmitted by the back of the horse, while this maintain a regular gait. These stimuli provides muscle adjustments at human trunk, objecting control muscle activity and maintaining the most possible alignment in each patient on therapeutic riding seated posture. The exercise variability that physical therapists use during riding therapy includes not only postural changes, but includes too horse's gait velocity variability, with slow or fast steps. Surface Electromyography is a measurement technique to verify muscle activation with quantitative values. Objective: The aim of this study was verify influence of horseback riding posture variation and horse's walking speed, at lumbar erectors muscle recruitment, using surface electromyography. Methods: Using Surface Electromyography MIOTEC® and a software Myography with 4 channels, bipolar circle surface silver electrodes Medtrace® spacing=2.5cm, at erector lumbar muscle motor point, according to technique suggested by Cram et al. 1998. Horse's walking speed variabled as slow and fast steps, 20 meters straight. Data were analyzed considering average maximum recruitment in each task, using Wilcoxon Test including significance level of 0,05 (5%). Results: The results showed by surface electromyography, comparing the average of muscular recruitment being subjects seated frontal related to the horse's head, during horse's slow walk, were $30,0\mu V$ and $38,0\mu V$ at horse's fast walking (p=0,009). The average of maximum peak recruitment values were 57,11µV at slow, and 67,44µV at horse's fast walking (p=0,107). Seated dorsal, performing a slow speed walking, the average of muscle recruitment was 56,89µV, and 77,22 µV at fast horse's walking speed (p=0,001). For the average of maximum peak recruitment performing slow walking seated dorsal was 103,11µV, and 142,44µV for fast speed walk (p=0,004). Checking values, and comparing frontal and dorsal horseback seating at fast walks peed, is possible see a average recruitment of 38,0µV frontal at fast horse's walking speed, and 72,22µV at dorsal (p=0,002). For average of maximum peak values were 67,44µV frontal, and 142,44µV at dorsal seated position with horse's fast walking (p=0,006). Discussion/ Conclusion: The knowledge of physiologic process involved in posture control and values founded during therapeutic riding session are essential for a stabilized, effective and safe therapeutic intervention. Results showed that the most activation of extensor muscle occurs when horse's faster walking speed. So that, considering average and peak, there're significant differences between speed at dorsal seated position. It's possible to note that in both situations, the most important average was always horse's walking speed performed by fast steps. This applicability is important for physiotherapists who use methods of postural improvement at central nervous system area. Know tonus variability is a procedure base, guiding these patients who aims a trunk extensor control improve, being positioned preferred at dorsal horseback

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position. Then, when possible and safe, results showed that horse's steps speed increased solicit more extensor trunk muscle. Considering many therapeutic possibilities with horses, quantitative scientific resources are important to Hippotherapy program improvement.

Key words: 1. Hippotherapy 2. Surface Electromyography 3. Biomechanical Analysis

INTRODUCTION

The normal motor development has as its main characteristic the acquirement of cranialcaudal and proximo-distal senses, that is, gaining postural control by using the cervical muscles, followed by trunk and pelvis. Proximo-distal development starts in the articulations that are closest to the medial area, towards the lateral ones. According to Kandel; Schwartz and Jessel (1997), human's axial (trunk) and apendicular (limbs) muscles are used in maintaining postural balance, whereas distal muscles are used for manipulative activities. Postural control and balance maintenance are paramount for the good performance of fine motor activities, such as prehension, reach and writing.

Thus, according to Medeiros e Dias (2002), the motor action is based in two activities: feeling and perceiving, and performing movements. By stimulating the three sensorial systems (vestibular system, visual system and proprioceptive system), Therapeutic Riding will favour motor learning, giving rise to changes in the organization and number of neural connections, called neural plasticity.

The vestibular system is stimulated by endolimph flow. Vestibular organs detect the balance senses, and is composed of a system of tubes and chambers in the bony labyrinth, in which lies the membraneous labyrinth, composed of cochlea, three semicircular channels and two large chambers called utricle and saccule, responsible for the balance.³

The three semicircular channels are sensitive to angular accelerations (rotations). The utricle and the saccule are sensitive to linear accelerations (translations and gravity). Both systems combined ensure the perception of all possible accelerations.

Vestibular stimulation process starts with the concept of similarity between human and horse walking. It is by means of the known tridimensional movement that horses promote in the bodies of individuals riding them that torso muscles are activated, in order to avoid falls caused by constant oscillation.



Riding a horse, subject is exposed to these oscillations in a very particular way. Considering the animal still, and the movement starting with the right lower limb, the next limb to move will be the left anterior leg. This way, the rider's pelvis detects these movements, triggering the muscle recruiting process and tonic adjustment to avoid falling.



In case of neurological injuries, where these reactions will be limited, the horse favours motor learning through the repetition of pelvis and torso oscillating movements.

Hippotherapy, being essentially a rehabilitation-driven technique, is designed for people who have physical and/or mental impairment.⁹ The adequate choice of animal, that is, the walking pace, is vital to obtain the adequate postural responses for each patient.

The animal that presents a higher number of steps per minute will activate the intrafusal proprioceptive receptors, that only respond to fast stimulus, as well as the articular receptors that respond to pressure, enlarging the torso, which is indicated to hypotonic patients.

On the other hand, when the horse presents a low walking pace, it will decrease the speed of proprioceptive stimulus inputs, keeping the movements rhythmical and harmonious, stimulating the vestibular system slowly, contributing for the reduction of muscular tonus, being indicated mainly to hypertonic patients.



For a better analysis of the muscular activities performed in these therapies, individuals without neurological problems were observed initially, so that only muscular recruiting

variations would be analysed, without possible interferences of muscular spasms or postural deviations.

METHOD

SUBJECTS

Nine subjects were part of this study, aged between 20 and 25 years old, females, with no motor alterations. The selection criteria was based on the general condition of individuals, without posture pains or disorders.

The riding was performed on a 13 year-old female mare, with no defined breed, at a 20 X 60 meters, sand-grounded ring.

MATERIAL

For the quantitative result analysis, the *MIOTEC*[®] Surface Electromyography device and the *Myography*[®] software with 4 chanels were used.

For the riding, "gallop" pad, with no handles nor stirrups was used.

PROCEDURE

The collection started with the positioning of *Medtrace*[®]circular pre-gel silver chloride electrodes, 2.5cm far from each other, on the motor point of the lumbar erector muscles, according to the technique suggested by Cram et al. 1998. Individuals were observed firstly on the ground, to only later ride the horse.

All postures were collected on the same day, the order of collection being, respectively: with the horse at the pace at which the individual was riding facing forward, always having as reference the horse's head, and with the back to the horse's head – dorsal. With the fast-paced horse the same postures were collected, in a linear 20 meters track.

During this period, individuals were all the time supporting themselves without any help from the therapists; however, they had by their side two therapists, for their safety, and a horse leader.

For data collection, a notebook was used, connected to the electromyographic device on a stable but mobile rack, which followed the horse during collections.

For data analysis, it was considered the muscular average recruitment average in each task. The study was based on the analysis of data obtained from the electromyography result; the statistical analysis used was the Wilcoxon Test, which has a significance level of 0,05 (5%).

RESULTS

Analysing the obtained data, the following postures were compared, starting from the results of Frontal position movement comparison:

	Averag	ze	Peal	k
	Slow	Fast	Slow	Fast
	Frontal	Frontal	Frontal	Frontal
Average	30,00	38,00	57,11	67,44
Medium	25,5	28,5	47	65,5
Standart Deviation	21,40	24,70	39,20	31,12
Inferior Limit	20,11	26,59	39,00	53,07
Superior Limit	39,89	49,41	75,22	81,82
p-value	0,0)09	0,	107

We have concluded that there is a statistically significant average difference between the paces for the Frontal position only at the Average values, in which, by the way, the high speed average is actually higher than the low speed average. For Peak no significant difference was found between the paces.

	Average	•	Peak	(
	Slow	Fast	Slow	Fast
	Dorsal	Dorsal	Dorsal	Dorsal
Average	56,89	77,22	103,11	142,44
Medium	47,5	56	75	85,5
Standart Deviation	44,92	61,31	89,81	120,77
Inferior Limit	36,14	48,90	61,62	86,65
Superior Limit	77,64	105,54	144,60	198,24
p-value	0,001		0,004	

We will continue comparing the paces, considering now the Dorsal position.



For Dorsal position, we have concluded that there is a significant difference between the paces, for both Average and Peak. We have also noticed that, in both situations, the higher average is found at the higher speed.

Now, comparing Frontal position and Dorsal position for fast pac	Now,	ring Fro	ontal p	position	and	Dorsal	position	for	fast	pace
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	Averag	e	Peak	C C	6
	Slow	Fast	Slow	Fast	
	Frontal	Dorsal	Frontal	Dorsal	
Average	38,00	77,22	67,44	142,44	14 (Mar)
Average	28,5	56	65,5	85,5	
Standart Deviation	24,70	61,31	31,12	120,77	
Inferior Limit	26,59	48,90	53,07	86,65	
Superior Limit	49,41	105,54	81,82	198,24	Hida Des
p-value	0,002		0,006		BBursal Laute BBBursal Rapide

We have noticed that for fast pace there is also a difference between the statistically significant positions, both Average and Peak. We have also observed that Dorsal position average is always higher than Frontal position average.

DISCUSSION

This study was carried out only with individuals without motor problems, with the intention to exclude possible tonus or balance alteration interferences. The comparative analysis was carried out through individual statistical tests, that is, the muscular recruitment variation was observed according to the individuals' data against themselves, to only later be compared to the others'.

Therefore, we were able to observe the direct interference of the horse's walking pace in the muscular recruitment degree, as well as the posture change significantly affecting the muscular recruitment.

The horse's pace variation, speed, direction stimulation and balance have as response the patient's gravity center displacement, favouring the posture stabilization dynamics and the motor disorder rehabilitation.^{1,4,7,8} Therefore, it is necessary that the patient increases the muscular recruitment to ride the horse, which can be observed in the muscle activation difference analysed in any of the postures, compared in both fast-paced and slow-paced horses – always keeping walking to the pace.

The Central Nervous System interprets these unbalances as postural unsteadliness capable of causing falls, responding with an enlargement of postural tonus. This way, the spine erectors are activated as a way to keep balance reactions. Gusman and Torre (1998) define that balance reactions adjust posture, keep and recover balance before, during and after gravity center displacement.

The study of muscular activity during horse's pace movements is extremely important to physical therapists, who can, from this data, change postures in a more adequate way to each patient. With the results obtained, we could conclude that dorsal posture always required more muscular activation from lumbar erectors; consequently, it is the posture that will work torso control more intensely.

In clinical practice we deal with some patients who present aticular limitations, arising out of severe spasticity, muscular shortening, and other complications. Such limitations usually hinder posture changes that could be done in a Hippotherapy session. Thus, the work based on the horse's walking pace becomes essential for the motor gaining expected for certain patients.

It could be seen in this study that muscular recruitment has significantly varied according to changes in the horse's walking pace, which means that, even without changing the posture on the horse, we can recruit torso muscles in different ways and intensities, varying the intensity of posture work, without having to displace patient on the horse.

This way, future studies applied to different pathologies are suggested, defining the most adequate therapeutic conduct to each pathology.

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SAFETY VEST FOR THERAPEUTIC RIDING

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ABSTRACT

The development of new products and equipments has an important meaning to our society. In fact, designer professional come up in this context with a main goal to recognize user needs and seek reliable solutions. New designs must fit solving problems in the best way to accomplish our needs. Design is a result of some researches and studies which aesthetics aspects are not so important as well psychological and functional. They include constructive techniques, materials, ergonomics and design methodologies. In this sense, some authors like Baxter and Löbach have a systematic approach for solving problems issues. It is relevant to design activities as a professional. This paper has a main goal related to equipment development provide help in the therapeutic riding treatment, seeking an improvement life quality for special needs carriers and to help the professionals to get better results during this therapy. The product design had an interdisciplinary approach with physiotherapists. The research project took place during academic activities of Design Course – Product Design - Centro Universitário Franciscano - UNIFRA, Santa Maria/RS. Its development was followed by professional team from Physiotherapy Course, Equestrian School of Santa Maria Federal University – UFSM and the Therapeutic riding center of the Minuano's ranch society. This proposal has a market target to child between three to eleven years old. The methodology adopted was ergonomics analysis. It is characterized by activity, task and contest evaluation with some diagnosis steps and product development of a new product. As a result it was created equipment that allows safety, movements freedom to the users, also helping the professionals to do their work. The problem related to the professionals is the muscle stress caused by in appropriated posture during the therapy. In the evaluated using of the equipment it was checked that attends the needs wich it was projected for.

INTRODUCTION

This research is part of the activities of the project disciplines of the Course of Design of the University Center Franciscano - UNIFRA, had its development followed by professionals of the Course of Physiotherapy and the School of Riding of the Federal University of Santa Maria - UFSM/RS and Center of Riding therapy of the society of the ranch of the Minuano. Initially it was identified the demand, the task and the activity identified that had been more proven in the adopted therapeutic procedures

In the accomplishment of the exercises during the therapy, even with all the cares with the security, accidents can occur. Thus, the objective of the research is the development of an new equipment that security guard supplies, (mainly to prevent falls) to the users in treatment and that also provides to the therapists one better execution of his work. Specifically, this

equipment comes in assists of the mobility of the patient and the actions of the involved professionals in the sessions.



01, Characterization of the scene, with the involvement of the professionals.

In the register of figure 01 the daily one of the sessions of Riding therapy is characterized. The special attention is given to prevent that the fall occurs. The uncomfortable position of the therapist is also noticed

The public of the research possess age that varies of 3 the 11 years. Because it is from the 3 years of age that the child can initiate the treatment, until the 11 years, when the child already starts to have autonomy and balance on the horse with safety.

The research involves different areas, as the Physiotherapy, Riding therapy, Psychology and Design, looking, with the use of new materials and the development of new equipment, a bigger security and comfort by means of ergonomic adequacy.

BIBLIOGRAPHIC SEARCH

To follow, subjects for the development of the project.

"The Riding therapy is a therapeutic and educational method that uses the horse with a interdisciplinary boarding, in the areas of the health, education and riding, searching the biologic, psychological e social, development of the carrying people of deficiencies and/or special necessities." (ANDE, 1999)

In Brazil, from years 80, when it was created ANDE - Brazil (national Association of therapeutic riding), this treatment took greater impulse, but only in last 6 years that it could noticed the true growth of this therapy, looking the increasing number of centers of Riding therapy in the national territory.

The therapeutic riding was recognized as a therapeutic method, in 1997, for the Federal Advice of Medicine. The basic Course of Therapeutic riding of ANDE - Brazil points, between many, some benefits of this therapy.

- It improves the balance and the position;
- it develops the coordination of movements between trunk, members and vision;
- it stimulates the directions by means of the environment and for the works with the horse;
- it promotes the organization and conscience of the body;
- it develops and it stimulates the muscular force
- ; it offers rhythm sensations;
- it increases auto-esteem, facilitating the social integration;
- it develops the fine motor coordination;
- it stimulates the good functioning of the internal agencies;
- it strengthens the sensitive, motor and creative capacity;
- it informs on the routine and the environment of the horse

These benefits help in the treatment of carriers of some pathologies, as: Cerebral paralysis, Syndrome of down, Syndrome of moebius, Syndrome of eduards, Hydrocephaly, AVC (cerebral vascular accident), Autism, cerebral Dysfunction, Riots of learning and behavior, victims of accidents and traumas

Talking about security, in it practices of the riding therapy, exist relative laws to the equipment s used. In accordance with "The riding for the disabled association" (1990), the equipment:

- must be used when necessary or only extremely beneficial;
- do not have to arrest the practitioner to the way animal some;
- cannot restrict or intervene with the balance, movement and contact of the animal with the practitioner;
- do not have to annoy the horse, causing discomfort, so that accidents do not happen;
- must be comfortable;
- must be appropriate to the necessities of the practitioners

In accordance with Lermontov, (2004), the therapeutic riding is a therapy that uses the horse as tool of work to stimulate the motor development, emotional and social of special people. These aspects are worked in the search of the improvement of the quality of life of its practitioners.

For Kovács, (1997), when it is thought about quality of life, is thought about dignity, in respect to the person and control on the proper life, according to World-wide Organization of Health, the quality of life is on to well-being, satisfaction with the vital circumstances, reduction of the physical, psychic, social suffering and spiritual.

Equipment for special carriers of necessities needs special care when developed. According to Gomes Son (2003), the paper of the ergonomics in design of products for special carriers of necessities is of extreme importance. This design must take care of to the physical, functional necessities, to the psychological aspects of the users, and also to make the use of anthropometrics data

METHODOLOGY

The development of the research was structuralized the stages of the ergonomic analysis in agreement. With the application of questionnaires and photographic registers of the patients and therapists, the demand was identified in locos. Of the searched universe, 83% had indicated the security as item more important to be observed. Beyond the security, they had still appeared items with 12% for the position and movement of user and 5% for the adequacy of the used material.

The task analysis if disclosed of significant importance, and in such a way the guide as the therapists had argued and pointed the ideal conditions for practice of the Riding therapy. It was the moment where the research has perhaps propitiated, for the first time, the exchange of information between the involved professionals with the cause.

Finally, in the task analysis the action and thus justified the problem of the initial demand that was observed effectively. The measure that the equipment was confectioned, was being adjusted and placed in use (test) to each new searched stage, being concluded with a "performance" of ideal use for the patient

RESULTS AND DISCUSSIONS

Inside of that we call configuration of the project, some new equipment alternatives had been generated, observing some considered conditions indispensable:

- to hold the child to the horse without arresting it;
- not to veto (to inhibit) the movements of the child;
- not to intervene with the interaction child /horse;
- to prevent the discomfort for the child and the animal.

Motivated for the necessity also to solve the complained fatigue for the therapists, mainly caused by the position and in the form to hold the child, the alternative was chosen then that improved this discomfort.





03. Lateral sketch.

To offer the security against falls of the horse, the vest posses two lateral straps with velcro that they are fixed to the blanket (layer on the horse). This delays the speed of the fall thus providing an adequate time so that the side walker hold the child for some of the three handles that compose the vest.



04. Sight Frontal of the equipment.

05. Illustration of the vest.

The materials used in the construction of the vest are: canvas, synthetic fiber, tactel, cadarços and velcro. The tests are being evaluated with the use in children who if adaptem to the size where she was confectioned.



06. Position of the user with the vest



07. System of setting and handles of security.

Figure 06 shows the position of the patient with the equipment and in the figure 07 shows t the handles and the therapist holding the child for one of the three existing handles in the vest.



08. Freedom of the lateral motions.



09, Freedom of the movements for front and stops backwards.

Images 08 and 09 demonstrate that the equipment does not inhibit the movements of the child.

CONCLUSION

The proposal of the developed equipment not only favors the carriers of necessities special, but also the children who are having its first contacts with the horse. Therefore it is a security equipment.

On the evaluations of the use, initially, the rightness of the considered development was evidenced. The acceptance must mainly to the security and the position of the patients. In continuity to the evaluation process, they are in comment the resistance, the durability, the low cost and the easiness of hygienic cleaning of the used materials.

It has an ample acceptance of the proposal how much to its condition of use and handling, as much on the part of the professionals how much of the users of the Therapeutic riding.

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THERAPEUTIC RIDING PROGRAM ASSISTANCE IN THE LEARNING DISABILITIES

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ABSTRACT

Using the horse as the vital instrument to obtain gains in the cognitive abilities in children with learning disabilities is the aim of this project. It is intended to introduce the PAEDA PROGRAM – PROGRAMA DE ATENDIMENTO EQUOTERÁPICO NOS DISTÚRBIOS DE APRENDIZAGEM (THERAPEUTIC RIDING PROGRAM ASSISTANCE IN THE LEARNING DISABILITIES) – to the speech therapists and to the professionals who work with Therapeutic Riding. The PAEDA PROGRAM is a protocol of strategic suggestions to the work with the abilities which are in the base of the learning, assisting in the phonoaudiologic clinical reasoning within the Therapeutic Riding context.

Keywords: PAEDA PROGRAM, Therapeutic Riding, Learning Disabilities, Competence, Cognitive Abilities, Oral Language, Memory, Attention, Equestrian, Congenital Dyslexia, Acquired Dyslexia.

INTRODUCTION

In the course of the practice as a present professional at the therapeutic riding area and of the creation of PAEDA, several questions were raised about the role of the speech therapist within this therapeutic practice. Throughout experiments which have been done during five years of working, using suporting pedagogical objects, or using exclusively the horse and the equestrian materials, it was possible to compare the results and the personal identification to a way of working, considered by the author, more effective and suitable for the Therapeutic Riding program.

According to ANDE-BRASIL – The Therapeutic Riding National Association in Brazil – the Therapeutic Riding is a therapeutic and educational method which uses the horse inside an interdisciplinary approach in the areas of healthy, education and horse riding, chasing the bio-socialpsychological developing of people who are affected by disabilities and/or require special needs. It also utilizes the horse as a subject that will promote physical, psychological and educational gain.

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This project is focused on providing strategy therapeutic suggestions using the horse to develop the fundamental abilities required to the literacy, which are reduced in the children who have the learning disorders. The shortfall in national publishings related to the strategies in the Therapeutic Riding environment to the work of competence, and to the particular abilities related to the basic learning, was the most important reason to create PAEDA, as well as the need of solidifying the practice of the speech therapist inside the Therapeutic Riding treatment.

The speech therapist may have many areas of practicing such as clinics, companies, offices, hospitals, homes, among others, and nowadays they are the kind of professional who have been more and more present in the Therapeutic Riding interdisciplinary team. Reflecting on this speech therapist role in the Therapeutic Riding is also an aim of this project.

Assuming that the school learning is an intricate process which involves several systems and abilities, and that a specific fact may not be the only responsable for the difficulty of learning, at the moment of the introduction of PAEDA, it will be given emphasis to the attention aspects, memory and the oral language structure.

By promoting the experiments on the equestrian environement and with the horse, PAEDA will give the opportunity to the learning of the competencies and abilities which belong to the base of the learning. According to Piaget (1983), the learning is a process caused by seveal situations, such as psychological experiments and external influences.

Even knowing that the Therapeutic Riding offers a global stimulation to the cognitive, emotional, social and motor areas, PAEDA focused on the attention, memory and oral language project, and these characteristics are found in a deficit range in children with learning disabilities.

According to the definition which was established in 1981 by the National Joint Committee for Learning Disabilities, in The United States of America,

Distúrbios de aprendizagem é um termo genérico que se refere a um grupo heterogêneo de alterações manifestas por dificuldades significativas na aquisição e uso da audição, fala, leitura, escrita, raciocínio ou habilidades matemáticas. Estas alterações são intrínsecas ao indivíduo e presumivelmente devidas à disfunção do sistema nervoso central. Apesar de um distúrbio de aprendizagem poder ocorrer concomitantemente com outras condições desfavoráveis (por exemplo, alteração sensorial, retardo mental, distúrbio social ou emocional) ou influências ambientais (por exemplo, diferenças culturais, instrução insuficiente/inadequada, fatores psicogênicos), não é resultado direto dessas condições ou influências. (Collares e Moysés, 1992: 32)

It was observed that the term "learning disorder" is used many times in a generic way, therefore it was pretty highlighted that inside this job, the children who have school difficulties, were diagnosed as having neurological learning disorders, thus they are considered dyslexic.

According to the present 2003 definition (Susan Brady, Hugh Catts, Emerson Dickman, Guinevere Eden, Jack Fletcher, Jeffrey Gilger, Robin Moris, Harley Tomey and Thomas Viall, apud Vallet 2003),

"Dislexia é uma dificuldade de aprendizagem de origem neurológica. É caracterizada pela dificuldade com a fluência correta na leitura e por dificuldade na habilidade de decodificação e soletração. Essas dificuldades resultam tipicamente do déficit no componente fonológico da linguagem que é inesperado em relação a outras habilidades cognitivas consideradas na faixa etária".

According to Johnson and Myklebust (1983), the dyslexia is hardly ever found in an isolated form. The severe difficulties to read and write accurately are associated with memory disorders, attention, body image, motor aspect, temporal and spatial context and lateralization.

In relation to the therapeutic strategies to the Therapeutic Riding treatment in children who have learning disabilities, this author was worried about creating strategies concerned with the relationship between Man X Horse, promoting the contact, the experience and the possibility of an active learning. It is believed that through a protocol of therapeutic suggestions, the speech therapist may carry out their session and the treatment in a more organized way, and be sure about a more precise evaluation of the aimed results.

As the Therapeutic Riding is a therapeutic method which enables professionals to work several aspects simultaneously, these professionals who carry out a session may easily unfocus their aims. By taking usage of PAEDA as a protocol of strategic suggestions, the speech therapist will be able to organize both the session and the treatment in a didactic and flexible way, offering a better evaluation of the results to be reached.

AIMS

GENERAL

Through the usage of the horse and of the equestrian environment as the main instruments of the Therapeutic Riding, it was intended to create PAEDA – Programa de Atendimento Equoterápico nos Distúrbios de Aprendizagem (Therapeutic Riding Program Assistance) – whose strategies, at the moment, will be to work the attention, memory and the oral language structuralization.

SPECIFIC

Demonstrating the strategies of PAEDA to the other present professionals in Therapeutic Riding, reflecting on the role of the speech therapist inside the Therapeutic Riding.

METHODOLOGY

PLACE

This research was carried out in an Institute of Therapeutic Riding, located in a town in the State of São Paulo, Brasil. This institute is formed by an interdisciplinary team with a psychologist, two speech therapists, two physiotherapists, some doctors, two technical conductors and two side assistants. Emphasizing that all the professionals are horse riders, except for the doctor.

SUBJECTS

The strategies were used in fifteen subjects, from seven to twelve years old, assisted in Therapeutic Riding, with the diagnosis of having congenital dyslexia and one with the acquired dyslexia. Some within a pair-session and others within a group-session selected either by the age or the therapeutic demanding.

PROCEDURES

After an interdisciplinary evaluation, involving contact and/or school questionnaire, the subjects were submitted to weekly Therapeutic Riding sessions, either in pairs or in groups, lasting one hour each. It was a 24-session-research observation.

Every session was registered by the researcher, some of them were either photographed or recorded. The therapeutic strategies of this research were divided in: focus on the attention, memory and oral language structuralization.

At the beginning of the treatment the practicers were informed of the aims and, when it was necessary, the therapeutic setting was retaken, in other words, the assistance contract, raising again the reason why each practicer is taking the Therapeutic Riding.

Some of the used strategies will be described in the following, noticing that these strategies were not carried out in the exact order they are being exposed.

1 - Activities which prioritize the oral language.

a) Aim: Vocabulary widening and immediate memory evoking

Procedure: On the ground, during the animal brushing, the practicers name three instruments – brush, curry comb and hoof cleaner.

While the activity is being done each practicer must say the name of any instrument in order to the peer take and use it, then they take turns to name the objects and complete the activity before saddling.

There is also a variation of this activity which is adding the horse's body parts that may vary – torso, belly, neck, forehead, face, fetlock joint, sacrum, shoulder, frog, among others. The practicers must give the following order: use the curry comb in the sacrum, use the hoof cleaner in the frog, and so forth. When somebody forgets any of the names, the therapist or the other peer either says the first phoneme – the smallest unit of sound – or the first syllable, if it is necessary.

It is confirmed that this activity is more intricate than the previous one, since the children have to form more complex sentences and remember of a larger quantity of names, which is not commom to them.



Image1: Ground activity illustrated picture

Through these activities, the practicers insert new words into their vocabulary in a natural and dynamic way, within the Therapeutic Riding context. It is noted that the dyslexic children have an oral language deficiency history along their pre-

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school period that may extend for the school phase. According to Vallet (1990), the most frequent oral language difficulties observed in dyslexic children are the problems they have to give names and find words, trouble to remember words, weak memory to digits and sentences, besides the unsatisfactory articulation and organization of the speech sounds. Some studies quoted by Bryden (1972), Ealck (1978) and Spring (1976), confirm the significant deficiencies in hearing memory in dyslexic children.

In these activities the work done with the hearing memory is facilitated with the activities which help in the word evoking, like phonological clues, for example, it starts with "e"; semantic clues, for example, it is an object that is used to cleanliness; or gestures, making the one related to the way of using the chosen instrument. According to Santos and Navas (2002), many times it is difficult to establish if the patient's difficulty is either their memory or lexical evoking. The truth is that they are not able to evoke the required word. That is why that besides estimulating them to form better association chains between the words, they should be helped to evoke the words in the fastest time possible. Avoiding the hesitations which interfere in their performance,

Again according to the authors, all these oral activities might and must be associated with the physical coordination ones, in order to be more dynamic and interesting to the patient.

All the activities offered by PAEDA are dynamic and enable the multisensorial estimulation, because organization and body movement are combined with other touch abilities, perception, language and thinking.

b) Aim: Oral discourse organization and sequential memory.

Procedure: Right after the mediator's command has been given to the accomplishment of the circuit activity, each practicer repeats the command with their own words without forgetting the stages and with particular attention to the syntax discourse structuralization.

EXAMPLE:

Holding the horse with the right hand at an elevate trot, the group must complete a lap on the horse ring, diagonally change hands like an "M", and a half lap in reverse like in "B" with a backward stop as in "A".

NOTES

This activity must consider the group memory level, since the commands become gradually more complex, and also consider the progressive learning process.

According to Santos and Navas (2002), the patients oral expression who have developed dyslexia is slightly organized, their reports are insufficiently phrasal constructed, many times with the dearth of coherence and cohesion. As well as they have verbal memory difficulty, vocabulary, classification, and lexical access or evoking. These authors suggest that the therapist must assist and guide the patient to organize the world of the words, the ideas, and of the perceptions, in a ludical and attractive way.

Throughout this activity previously described, the practicers, after organizing their discourse related to the given circuit, do the activity with the guided sequence and reflect about the performance of each one and of the group itself. This activity may be done in steps and
lately in faster strides, exactly like the trot and the gallop, causing the aceleration in the memory evoking to the circuit and the motor adjustments.

As quoted Valett (1989), sensorial and motor activities superimposed and structured, help to turn the body more organized and exert a direct influence on the neurological organization centers of its own brain.

In 1964 Maria Montessori was one of the first technicians to formulate the hypothesis that the mind is allowed to grow and develop through the usage of the special educational methods in which cognitive and sensorial-motor related games are used.

2 - Activities which prioritize the attention.

a) Aim: working with the selective attention.

Procedure: Saddled, words which were worked out at the moment of the floor activity must be used at this stage, they also may be classified in saddle materials, parts of the animal body, fur, consequently they must be associated with the warm-up exercises on the horse.

When the session mediator says a word, the practicer must associate it with the corresponding motor act.

EXAMPLE:

Each time the mediator says "blanket" the practicer must turn around their left arm; when the mediator says "saddle" the practicer must turn around their right arm; and when the mediator says "Stirrup" the practicer must stand still, in a balance posture. Firstly, these words might be said respecting the order and later they might be randomly said, turning the exercise harder.

Notes

The words and the exercises will be increased in number according to the gradual learning and memorization of the commands. A variation of this exercise is giving commands trough numbers. For example, each number corresponds to a motor act, and these numbers might be said in sequence or not, turning the exercise harder.

b – Aim: working with the selective attention.

Procedure: Saddled and in movement, the practicers must keep a certain distance from the animal in a way that each one of them are in front of a letter which determines the horse ring. Whilst the two practicers are kept in the balance posture, the middle practicer must be in the base posture (saddled). By the time the practicers and their horses reach the horse ring's next letter, the postures must be modified. In other words, the practicers who were standing in the balance posture have a sit, while the one who was on the base posture stands to the balance posture. Not only the practicers must pay attention to the moment of the posture transition, but also must coordinate the distance between the horses in order to be smoothly done.

Throughout these activities it is possible to be noticed a general fun, since the practicers may find themselves confused about the exercise order. Besides the assigned exercise is

accomplished, the practicer is in movement, that is, constantly motor work while has to keep a safe distance from the other animals.

Many studies confirm that the primary difficulty of the dyslexic children is the inability to focus the attention and to keep in mind several information portions until they might be synthesized. According to Zorzi (2003), the attention is defined as the capacity to select the stimulus on what our attention and intelligence will be concentrated. The attention depends on the fact of being curious about things; on the interests; on the comprehension capacity; on the environment conditions and on the capacity of both detecting and selecting stimulusses, among the ones which are simultaneously happening, the ones which notably arise the interests.

Throughout this suggested activity, the therapist assists the attention training, inserting sensorial (hearing memory) activities related to the motor activities. According to Santos and Navas (2002), in order to a child learns at school, they must have a good sound detection and, moreover, be able to distinguish the speech sounds from the environment ones, which means having a good divided or selected attention. Assuming that it might not occur, it becomes utterly difficult to learn without special assistance, even when the normal intelligence, motivation and health are provided.

Activities which prioritize the memory.

a – Aim: working with the immediate sequential hearing memory.

Procedure: At this stage the horse is fastened to a long horse-guide to the work with the "round turning". The mediator verbally gives the command to a sequence of movements. For instance, the horse moves step by step and then a "mill" will be done, the knee posture, standing and straight after the base posture.

NOTES

As the commands are memorized, the exercise may become more complex. The variations may be done in agreement with the activity suggested by the horse riding.

VARIATIONS

- 1 Leading the horse moving in steps, the practicers follow a horse ring picture sequence asked by the mediator. For example, a whole turn around the horse ring will be done with the horse moving in steps, with a hands changing through the diagonal F to H, with a circle in B, and a semi-circle in E, with the stop in C. Obviously, at the first time this exercise is carried out, the commands are shorter, and they are slowly turned more difficult according to the activity memorization.
- 2 Either leading the horse by steps, trot, or gallop, the practicers follow a sequence of the obstacles, adequately named with the principles of equestrian jumping modalities. Like, for example, while the horse is being led by trot the rider must pass through the obstacle in "X", after in the "parallel", passing through the obstacle and then doing the stop. All the exercises might be done in the inverse order.

Within all these activities, the practicers will have to memorize a sequence in which each one has a specific word that will depend on the session mediator therapist being using the classical horse riding techniques designed to the horse training, spin or jumping. This sequential memory is extremely important to be worked on children that have developed dyslexia, because according to Moraes (1997), these children have difficulties to recall sequences, remember series such as, days of the week and months of the year.

DISCUSSION AND RESULTS

The fact of PAEDA has been used during the Therapeutic Riding sessions with dyslexic children, enabled the organization of the didactic therapies. The multidisciplinary team observed that the horse riding knowledge related to the therapeutic aims clearly defined, could promote significant gains in the aspects of the oral language, attention and memory of the praticers seen. Besides the clear improvements in the Therapeutic Riding environment, not only the families but also the teachers reported about the evolution of the children seen, considering the aspectes worked.

The PAEDA enabled the interdisciplinary team to achieve an organized way of developing the reasoning of the Therapeutic Riding to the children with learning disabilities, because dyslexia is a very complex and severe condition, with many damaged abilities and competencies that deserve particular attention in order to the child may improve within its school environment.

Far from being a simplifier, PAEDA has searched a strategy organization using the horse as the provider agent of education. It may be observed that at any moment of the strategies all the instruments used were part of the equestrian context.

A Therapeutic Riding Approach that uses PAEDA, must give emphasis not only to the neuropsycomotor functions – known as the abilities list needed to the reading and writing learning, as oral language, memory and attention (described trough this project), lateralization, visual and hearing discrimination/distinction, visual-motor coordination, temporal spacial guidance, emotional intelligence, among others that will be approached along the expansion of the PAEDA program – but also to the valorization of the linguistic competency, to the abilities that the children have in the search of knowledge, to the opportunities to experiment learning concret situations, and, above everything, to the utilization of the most important Therapeutic Riding instruments, – through this learning – the horse.

The Therapeutic Riding is a therapeutic approaching that enable the concomitant work of all the developing aspects – cognitive, motor, affective, and social. It is the professionals' responsibility to establish the priority of their aims accordingly to their school and family needs, as well as to search the knowledge of the horse Ethology and of the horse riding so that these factors together may be favorable to an efficient program.

Vallet (1974) also suggests a therapeutic approaching which organizes fifty-three capacities of learning in abilities and tasks. Moreover, he lists six most principal categories: tough motor tasks, motor-sensorial tasks, motor-perceptive tasks (including the hearing, visual and the

motor-visual), conceptual, social, and language abilities. These abilities and tasks are organized within its own program, following a hierarchy that considers the dyslexic children educational needs.

It is extremely important to emphasize that the aims and the estrategies division suggested in this paper, must always be seen in a guidance way, because the human being must be carefully seen through a holistic perspective.

CONCLUSION

It is possible to conclude that PAEDA has contributed to the meaningful gain of the attention abilities, memory and the practicers' oral language which were submitted to the program. The PAEDA program suggests a range of strategies within a wide therapeutic approaching exact as the Therapeutic Riding, and that enables concomitantly the work of all abilities. Contributing to the professional reflect about how much it is possible to extract from the horse and from the equestrian environment, as long as they are known by the entire interdisciplinary team.

Due to this purpose, the speech therapist role in the Therapeutic Riding has been carefully reflected by the author. It appears that the speech therapists must be multi-efficient, have the specific knowledge in the area, broaden at a specific area within the Phonoaudiology/ Speech Therapy, and especially know the horse Ethology and the horse riding in order to make use of the most important Therapeutic Riding tools: the horse and the equestrian environment. Furthermore, the Therapeutic Riding professionals must be creative, know how to work in a team, and have moral and human qualities.

Despite the fact that the literacy has been focused by the author, it is important to stress that it does not matter the phonoaudiologic aspect to be worked, the most important is that the professional does not try to take their office itself upon the horse, but develop a clinical reasoning inside the Therapeutic Riding context. Moreover, the professional must be able to - within a teamwork interaction - set the horse as a primary agent which generates considerable gains in development, either in the oral language, writing, voice, hearing or in the oral motricity.

This author has been widening a series of strategies to work other aspects that are in discrepancy in the children's learning disabilities. It is also suggested an extension of the appliance of these strategies recommended by PAEDA by other Therapeutic Riding centers, arising a considerable sample of subjects to a next research allowing the validity of the program and the institutions exchange.

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IMAGE 2: PAEDA'S STRATEGY 3B ILLUSTRATION IMAGE 3: PAEDA'S STRATEGY 3C ILLUSTRATION

"REPAIRING" THE PERSONALITY OR GIVING AIDS FOR DAILY LIFE. PMTV PSYCHO-MOTOR THERAPEUTIC AND REMEDIAL VAULTING

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Therapeutic vaulting can be successfully used within different models for remedial as well as (psycho)-therapeutic targets. PMTV is a psychodynamic body-oriented form of psychotherapy based on remedial vaulting (Kröger, 1977, 1982, 1990, 1996, Kröger et al. 1997) and psychomotor therapy PBSP (Pesso-Boyden System/Psychomotor Therapy). This is coupled with a methodology based on the understanding of human physical and psychological development. Moreover, psycho-motor therapeutic vaulting is a process where interaction, response and projection need to be kept under control, i.e. it appears to be useful to structure the elements involved and to create systematically defined and varied therapybased situations where clients feel safe to gather experiences in co-operation with the horse while being assisted by the therapist. The therapeutic basis chosen is the Pesso-Boyden System/Psychomotor Therapy. The reasons are as follows: (1) it is a development-oriented form of therapy, (2) it structures the impulses clients experience during the process, (3) works with clear and targeted exercises, and (4) uses well-defined and safe situations for this purpose. In the "equine variant" of PBSP, the interaction between horse and client invites the latter to embark on a journey of self-discovery. Managed by the therapist, (s)he may track down unresolved emotional conflicts of the past through the instantaneous physical and emotional reactions that are triggered by exercises with and on the horse. Clients are made aware of these reactions, which are given names to make them less threatening, traced back to their origins and confronted within their historical context. The path towards healing is paved by defining and structuring otherwise overwhelming feelings and bodily sensations followed by their digestion and transposition into daily life. Under Pesso Therapy, participants usually work individually during their "structure" within a group, i.e. each client works on his/her individual process, while the other group members, who do the same during their own "structure-time", function as so-called accommodators. Under PMTV, the horse adopts the role of the human (group members) partners. However, it doesn't replace human role models. Rather, it is expected to guide clients towards them. In so doing, it fulfils different functions

throughout the therapeutic process and changes roles during the symbolic phase of digesting the experiences just made. This paper compares remedial and pedagogical approaches in therapeutic vaulting with psychotherapeutic approaches. The basic models are discussed and illustrated with some examples from practical use with grownups, children and youth.

From a pedagogical to a psychotherapeutic approach in working with horses Psychotherapy with equine partners in German-speaking Europe generally evolved from therapeutic work in educational and social learning contexts in combination with a psychotherapeutic background. This was also the case with me. Based on my training in therapeutic riding (remedial vaulting) and my background as a client-centred and bodyoriented psychotherapist, I have developed my own version of psycho-motor therapeutic vaulting (PMTV). This method has proved its worth in over ten years and is now taught to student equitherapists within recognised Dutch programmes for therapeutic riding SHP-E(NL) (Nederlandse Stichting Helpen met Paarden). Since in the Netherlands psychotherapists and pedagogues are jointly trained in therapeutic riding, we have also taken a closer look at the parallels and differences of the two process-based approaches to working with horses. The fundamentals of Pesso psychotherapeutic approaches in terms of a psychodynamic model defined by the satisfaction of basic human needs and the clients' self-definition and acceptance through interaction with the partner has resulted in a very clear formal and contents structure that can be very helpful in practical work, not only for psychotherapists but also for pedagogues. At the same time it also offers a practical methodological basis for my concept of psycho-motor therapeutic vaulting (PMTV). PMTV provides a wide range of applications for a variety of indications from serious chronic psychiatric disorders to selfawareness groups for riders who want to know more about themselves and their relationship with horses. My clients, my horses and I really enjoy this form of therapy as a kind of common expedition through body and mind. PMTV also offers student equitherapists a good tool for doing psychotherapeutic work with horses based on their remedial vaulting know-how. Moreover, this model helps manage the transition from educational measures to therapeutic processes, as this is often needed for young clients.

REDEFINITION OF ONE'S SELF IN INTERACTION

In both concepts, i.e. the educational and the psychotherapeutic form of working with horses, starts out from the assumption that you want to give clients the opportunity to embark on a journey to his/her inner self, to his/her possibilities and limits within a novel, non-negatively connotated situation with horse and therapist, to realise and experience alternatives to daily situations and interactions, and finally to take home these other possibilities into their daily lives for the purpose of using them to improve the quality of their lives.

In both cases you presume that clients have needs which could not and cannot be (adequately) met in their previous and current life context, and which are now assigned a place in the therapeutic triangle formed by horse, client and therapist. In both cases we do not see our work as problem-oriented but rather as a holistic approach which is not meant to repair any deficits but to use the clients' strengths and possibilities to help them see more than what they already know of themselves, to help them assess and appreciate their possibilities and limits. This takes place in an atmosphere where clients feel safe but where they are also invited and motivated to dare venture on unknown territory with their body and interact with others. A possibility sphere is created " a state wherein they can discover possibilities. The relationship clients establish with the horse, with the therapist and perhaps also with

other participants will enable them to gather experiences, good and painful, and to integrate them into the picture they have of themselves and their world. This will lead to a redefinition of one's self in interaction with the world. How this world and one's own personality is now experienced will direct towards new avenues for action.

Ongoing developmental processes versus digesting historical scenes

Vaulting/riding in a remedial and pedagogical context is a holistic concept that interferes with a (still) ongoing developmental process and offers supplementary options what children and young people do not experience in daily life. It opens up new avenues of perception and modalities of experience, and invites clients to test alternatives of action. The offers made are based on what clients are currently doing and experiencing and are usually accepted hesitantly but gladly. In psychotherapeutic vaulting/riding we have to reckon with largely concluded and partially unsatisfactory aspects of developmental processes. Clients have responded (often for years) with various mechanisms of denial, repression and coping. Although such mechanisms generate suffering, they are firmly entrenched and will hinder the therapeutic process as giving up, or temporarily deviating from, these "tried and tested survival strategies" can be a very threatening scenario for clients. Hence we have to expect defence and avoidance reactions determined by an individual's biography. We should not be surprised about such reactions, nor should we judge them negatively. This is where the horse will help us accept the resulting therapeutic challenges. The special "relational triangle" between client, horse and therapist makes optimal use of this dialogue with balance, sensations, natural rhythm of movement, warmth of the horse's strong body and its threedimensional action. It facilitates accessing otherwise repressed or denied feelings, selfperception and even tracking down unmet needs, which are craving for fulfilment, and historically grown mechanisms. This "equitherapeutic relational triangle" uses the client's contact with the horse to mirror this client's self. A confrontation with oneself which, if induced by the therapist alone, clients would not admit at all or only admit under great difficulties. The horse's character plays a key role in this context: horses will not be impressed and deceived by human "Lebenslügen" or life-lies and still be ready to accept their human partners as they are.

Targeted process work within the relational triangle with the horse (the group) and the therapist

Despite all that we should not rely naively and unquestioningly on the catalyst effects of the horse. In order to use this relational triangle in appropriate doses and in a targeted and meaningful way for the client within an integrated process, and in order to provide the option of transposing experiences into daily life, we also need a well-structured concept. We need a therapy situation that offers the necessary safety, while inviting clients to experiment with themselves, their bodies, their sensations, feelings and conflicting polarities in association with the horse. In line with the pedagogical work with the horse, this safe and encouraging triad situation plays a key role. It is what Pesso calls the "possibility sphere", i.e. offering an array of possibilities (Pesso 1986). We do not only want that clients feel good with the horse, learn more about themselves, and assess and appreciate their own unique self in interaction with the therapist and the therapy horse. We also want them to take home the newly gained insights and use them in their "normal" life to improve the quality of life in interaction with themselves and other human beings. We do not want to achieve what many riders with personal suffering try to seek and find through "autotherapy" with their horse: replacing the "human partner" with the "equine partner". It is absolutely necessary to allow the horse to remain a horse, while we humans have to try and seek satisfaction of our human and inter-personal needs in ourselves or in human partners. In

remedial vaulting the partnership-type handling of the situation by the riding pedagogue in the "here and now" in co-operation with the other participants usually prevents any unwanted projections of human behaviour, longings and needs onto the horse. Within a therapeutic process, however, targeted projections are actually wanted, provided they are accompanied professionally. For instance, the horse's function in the therapeutic process " the horse becoming temporarily a transition object or an ideal symbol " thus has to be clearly defined in terms of a symbolic role played by the horse during the process and shed afterwards. It must not become an ersatz partner! Moreover, we have to seek possibilities of having a limited array of transference, counter-transference and projections within the horse-based process and assigning it a meaningful function. The client, too, has a clear and defined responsibility for what happens in therapy, for the relational dialogue and the possibility sphere. It is the client that frequently determines with the help of the horse the topic, tempo and depth of the process.



Figure 1 - Distribution of tasks within the therapeutic triangle

Experiencing, opening up, naming and digesting the experience

Just as in remedial work with the horse, our therapy takes the body and its actions and feelings as a jumping-off point. This is where therapeutic intervention with all the involved sensations and stored information will try to access the client. Just as in remedial vaulting, the awareness of one's own body and its possibilities already prompts clients to better appreciate themselves and enables them to open up towards others. In psychotherapeutic terms this will then lead to experimenting with one's "bodily histories" based on this "realisation" of body signals and the "stories" they tell. Clients will be re-enabled to acknowledge others (in this situation first the horse), adjust to, and enter into a dialogue with, them. Just as in remedial work, this dialogue is easier to accept for the client since, initially, it is of a purely physical nature as is the contact between mother and child in the early stages of development. Led by the therapist, this dialogue between human and animal bodies will slowly evolve into analogue communication and later into verbalisation (giving

a name to the unknown) and reflexion (understand what is happening). Ideally, the therapeutic process will result in deliberate, volitional control and action based on what has been felt and uncovered previously (just as it could have happened had the individual's developmental history been good and without frustrations). Whereas in remedial vaulting it often suffices to have concrete experiences for the process to take effect and generate a transposition into daily life, psychotherapeutic work with the horse heavily relies on compartmentalising and digesting the experiences and sensations verbally and mentally within their historical context. Whereas in remedial vaulting, and especially in its application to children, it often suffices to have clients act and discover alternative actions or experience their own actions in relation to those of the partner (horse or other group members), the psychotherapeutic context frequently calls for verbalisation (if the latter does not dominate) as a major component of the process alongside action and sensation.

Tracking down deficits and working on them retroactively and symbolically

Since the therapeutic situation deals with late effects of "non-ideal" aspects of a person's developmental history, we will discover deficits in adult clients that have left their traces, just as we discover such deficits in pedagogical work with children and youths. They come to the fore through physical sensations felt in specific situations by the body. This allows us to deduce the historically grown "early deficit". Just as we give children in a pedagogical situation the opportunity to satisfy the need for a place, for security and protection, for support and nurturance (also in spiritual terms), we also give adults the opportunity to satisfy such needs "retroactively" and symbolically. Such a satisfaction of needs does not repair the experienced deficit but it offers a new "blueprint" how things could also have been. Where possible, the satisfaction of unfulfilled childhood needs is experienced symbolically "here and now" with the horse in equitherapy, such as being carried by an ideal father or mother figure (the kind of parent the client would have liked to have), and to take this experience home into today's real-life situation.

Structure is important

Just as in remedial vaulting, a specific structure, a sometimes cyclical approach is very helpful for client, therapist and horse. Ranging from the first realisation of body signals to their therapeutic utilisation and digestion, this process takes place within individual and defined phases of the PMTV model wherein the horse fulfils various functions. What we certainly do not expect is a "vaulting machine" that works at the push of a button and continues walking rhythmically no matter what happens on its back. On the contrary, the horse may and must react clearly to what the client does and feels, as the horse's reactions can be a trigger for both client and therapist. In stark contrast to remedial vaulting, in psychotherapy it is this reaction of the horse (also while "carrying" and being in contact with the client) that provides significant starting points for finding the client's "inner trigger". While remedial vaulting behaviour corrected and limits set by the horse, PMTV attributes much greater importance to the horse's mirror function, i.e. feeling and responding to the client's inner state. The horse may stop walking or gaining speed if it feels this impulse in the client.

Clients know what is good for them

Just as in appropriate client-centred work in remedial vaulting or in early developmental promotion of infants with the horse, we presume that, intrinsically, clients know very well what is good for them. Usually, they know it better than any therapist with whatever hypotheses. By responding to the clients' needs, the horse helps the therapist to be guided by such actual needs. This is when the therapist occasionally has to let go of a hypothesis, no



Photo 1: Getting to know and appreciate oneself (one's own value) through valuable contact with the horse



Photo 4: Turning defence into enjoying the loving discovery of one's own "deficiencies"

Photo 7: Getting in touch with one's own and the horse's body opens the way to "hidden" sensations

matter how tempting, and quickly adjust to what the current situation requires. Luckily, the horse will help us learn to accept limits set by the client in the process, help us keep pace with the client, something the horse often can do better than the therapist. It frequently also helps pause for the important things, those that matter and would have been overlooked in the therapist's attempt to keep the process going and chase after his/her own therapeutic hypothesis.

A network of relation, responsibility and action The therapeutic concept:

Therapy takes place within a good "possibility sphere" known from Pesso-Boyden System/ Psychomotor Therapy. We try to achieve it within a structured, safe, inviting relational triangle formed by client, horse and therapist, wherein the horse interacts with the clients,

Photo 6: Opening up for the rhythm of the other "opens" the dialogue

thus helping them to embark on a journey of discovery. For this purpose clients are assisted by a number of physical exercises and interventions within a cyclical process. Guided by the therapist, or rather while the therapist and/or the horse offer various possibilities, clients may decide for themselves what they want to take up and in which way they want to access their "bodily thoughts". They may get in touch with their needs (i.e. previously unmet, insufficiently met needs, met by the wrong person in the wrong way) which are still craving for fulfilment, although in various "disguises". Unresolved emotional conflicts from the past can be uncovered by sudden physical and emotional reactions to be defined within their historical context, given a structure, digested on a symbolic experience-based level in "the here and now" and, first and foremost, physically felt with all senses. The objective is to enable clients in a symbolic act to experience with all their body and soul, their "skin, hair and senses", how it feels (or would have felt in the past) to succeed in meeting these needs adequately, though only symbolically. Whereas in Pesso Therapy work is done individually within a group, with other group members acting as accommodators (role figures enacting important persons of reference), the horse (sometimes assisted by the voice of the therapist) will temporarily assume the role of the wanted or earlier missed human partner, but does not replace this partner. Rather, it guides clients towards this partner by adopting various roles during therapy. Hence the horse fulfils specific functions in all phases of the process accompanied by suitable therapist intervention. For instance, the horse may assume the "role figure of supporter" by carrying the client, while the therapist's voice comments on the patient being carried: "... if I had been there in those days I would have liked to carry you ...″

A gradual cyclical process in various phases:

The therapeutic process is designed as a gradual cyclical process based on (1) the interplay between therapist, client and horse within a safe and inviting situation; (2) the client's individual problems and (3) current level achieved in therapy; (4) specific exercises geared to these problems and levels; (5) the intervention by the therapist and, finally, (6) the client's individual response to all this:

Figure 2 The cyclical process



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In this form of therapeutic vaulting, the above factors are singled out intentionally, defined individually and then varied, combined and used in the various phases of the therapeutic process in line with the current objectives. Just as in remedial vaulting, the structure of the therapeutic session and of the whole process (encompassing numerous sessions) plays an important role. In analogy to such phases as warming up, playful movement, individual and partner exercises, client-chosen exercises and the final cooling down, we also use welldefined phases the client can clearly understand. Ideally, the step-by-step cycles help the client go through the below five phases of the therapeutic process. These phases are defined by their objectives within the overall therapeutic process, the phase-specific function of the horse, the kind of exercises and interventions currently involved and the therapeutic level (depth) reached in working with the client. Naturally, the phases overlap and will eventually become integrated within this process. It is important for the therapist to keep in mind the objectives that ought to determine each exercise, the role currently played by the horse and the level attained by the client so as to be able to fine-tune his/her interventions. Work is done with the loose horse in the picadero, the horse on rope and halter, in the grooming area and on the longeing rein when vaulting as well as led by the therapist. We should have a willingly co-operative horse treated by the therapist (and the client) with respect. It is not expected to obey unconditionally and co-operate tacitly. It is rewarded, you apologise to the horse when necessary and try to understand why it sometimes does not give the expected response. It is well-socialised with horses and humans, it has been trained in client contact in standard situations including proper elementary training on the longeing rein and under a rider (i.e. moves with a relaxed back, has a supple but keen forward thrust and balanced paces). Ideally, it tolerates the client without pad but with therapy strap directly on its back and also tolerates a client's insecurity. However, it definitely responds to clients "losing their balance" also in figurative sense (such as open or hidden aggression, sadness or joy) and indicates unmistakably what it likes and dislikes. Occasionally, it may even snap or threaten when confronted with hidden aggression. Experience shows that good therapy horses "out of conviction" are perfectly capable of distinguishing between situations where the client needs understanding or where it has to respond to the therapist's signals. To be able to cope with its "job" the horse has to be given sufficient leisure to relax on pastures in the company of other horses and/or in group stalls. It is used only moderately in riding and therapy and respected as a personality in its own right. This is why HippoCampus therapy horses are kept, trained and treated according to the "symbiotic horse keeping" guidelines (Boon-Thiel 1995b).

From becoming aware of body signals to digesting (developmental) deficits

Just as (not fully "balanced") children in remedial vaulting, clients in psychotherapy will get to know their body and its impulses in situations that are new to them and do not yet carry any negative connotation. They venture on uncharted territory in contact with and on the moving horse, whereby losing and recovering one's balance plays a crucial role. While in remedial vaulting the focus is on finding alternatives to action and experience in the here and now, PMTV revolves around the conscious awareness of feelings and the resultant development of processes (which may also turn backwards on the past). PMTV wants to help clients digest historical deficits in the here and now. We do so by offering " just as in remedial vaulting " alternatives to what actually happened. This, however, is done in a symbolic manner that suits the historical situations but still can be felt and experienced.



Figure 3 The phases of the process and their function

"Becoming aware" of body signals in various situations "triggered" by exercises on the horse will help us access pleasant and unpleasant physical sensations. Highly cognitive or verbal clients often need not only learn but also exercise this with the assistance of the therapist. Stored like cognitive information, this body information is closely linked to a client's personal developmental history and thus to his/her experience, self-perception and interaction with the environment in light of this history. Situations of the past which carry unpleasant connotations cannot be made undone or repaired retroactively, but through a symbolic form of digestion in "the here and now" on the horse we can enrich them with pleasant impressions that serve as current new "files", as quasi-antipodes and counterweights to the unpleasant or even traumatic previous information. Ideally, clients will succeed in "neutralising" the effect of older "files" on current experience and life itself. For instance, a client who never received help and support from his/her mother can work on these deficits symbolically by "being carried by the horse", with the horse becoming the ideal mother figure. This new experience will eventually stay as a counterweight to deficits suffered in early childhood. This may change current expectations, such as a male client's expectations of female partners. The horse here is used to assume the symbolic role of the "ideal carrying partner", with all the client's sensations being included in this context and stored in the "new file". Afterwards the horse sheds its symbolic function, it is what we call "derolled".

Photo 11:a: Looking for what is moving us Photo 11b: In so doing, admitting and tolerating negative sensations Photo 11c: Yielding to motion impulses and seeing how we live this up and through Photo 11d: Appreciating oneself enables us to open up towards others. The joint experience of moving around helps

The PMTV process:

The individual phases are defined by their objectives within the overall process, the phasespecific function of the horse, the kind of exercises and interventions used by the therapist to accompany the action, and the therapeutic level (depth) reached by the client voluntarily. **Introductory phase (I want):** It can be regarded as a kind of "warm-up", with the horse trying to motivate the client to enter into the new situation. Prior to therapy, client and therapist have met for an intake interview, the client has visited the therapy stables, has been guided by the therapist through the premises and (roughly) knows what to expect in "therapeutic riding", i.e. definitely not the conventional form of riding. Hence a client's previous riding experience will neither impede the process nor be required per se. The visit also includes meeting the therapy horse on the pasture in its natural environment, in the company of other horses. At the beginning of therapy, the possibilities and limits are not yet defined but will develop quite naturally through the client's contact with the animal within a well-structured and clear situation that is controlled by the therapist. This includes getting to know the horse together with the therapist who helps the client collect the horse from the herd to work with it. The horse will become the therapy partner for the next hour. Being with the horse in the grooming area, taking care of the horse before and after work and bidding farewell after sessions, enables clients to establish a relationship with the animal. They get to know the horse, a lively and strong but also soft creature that may be in need of help occasionally. They get to know the horse with all its polarities and direct way of communication. Clients can also see that horse and therapist treat each other with respect and enjoy working together. Clients are only confronted with as much "nature" and "strength" as they are able to cope with in any given situation. They may determine for themselves the kind of distance they want to have to the horse. A routine evolves which will later signal the beginning and the end of every therapy session, and which will facilitate transition from everyday life to therapy and back again. This is the phase where we lay the cornerstone for the so-called "possibility sphere" needed in later therapy phases, meaning the creation of an array of possibilities discovered by clients in association with the therapist. They may choose different possibilities from this array and use them or experiment with them as need be. This is how clients learn to explore their wishes and limits, communicate them to the therapist and examine together with the therapist whether they are feasible in co-operation with the horse. If clients succeed in doing this, they will be the ones who determine the intensity, depth and speed of the therapeutic process that is to ensue. This introductory phase is also intended to have the client discover the horse. For this purpose, we use various exercises with the horse on rope and halter or moving freely in the picadero. The way in which clients discover the horse, its body, its forms of communication and movement enables them to learn more not only about their equine partner and become familiar with it but also about their own curiosity and how they handle such situations (how they want to establish contact, what they expect and how they manage such expectations and also disappointments).

Exercise phase (I can do something)

This is the phase where actual vaulting begins. Clients get to know the movements of the horse and their own body's possibilities and limits by interaction with the horse. This usually begins with clients choosing the distance for walking alongside the horse, adjusting to the horse's gait, becoming aware that they are moved by the horse and are in contact with the horse's body when mounting the horse and being carried by it. They may make volitional movements on the moving horse with special attention being paid to balance, own posture and impulses. Gradually the clients' skill and courage will increase. The more they trust the moving creature and the assisting therapist and especially their own sensations, the greater will be their success. Soon they will learn about alternatives to their previous repertoire of movement / perception / communication but also about their limits, about what is feasible and what not. During this phase, the therapist's interventions focus on supporting clients in their attempts at allowing new impressions of movement and perception to take hold through exercises with and on the horse. This is where the horse plays the role of helper, contact

person and activator readily enabling clients to gather all these impressions and experimenting with them. The horse is the familiar factor, the factor to be trusted within this setting, the co-operating partner but also the partner who will react immediately if something goes wrong or is "out of sync".

Experience and sensation phase (I feel)

In this phase, clients are led beyond experimentation and action towards their own perceptions and sensations generated by the exercises with the horse. They learn to watch their own body, what it does, what can be perceived by the senses and what impressions all this leaves behind. The idea is to let agreeable and less agreeable sensations and impulses happen, to accept them and to learn how to deal with them. The exercises used within this phase are the "classical" ones of remedial vaulting but also variations of the bodily exercises used in Pesso Therapy (Boon-Thiel 1996b; Perquin 1995; Perquin and Pesso 1994; Perquin and Pesso 1995; Pesso 1972; Pesso and Crandell 1990) and modifications developed from exercise variations created by Klüwer and Straussfeld (Boon-Thiel 1996a; Boon-Thiel 1996b Klüwer 1989; Klüwer 1990;Straussfeld 1992). Now the therapist makes clients designate, describe and talk about their perceptions. The horse evokes all these sensations, allows them to happen, leaves them for what they are without criticising or passing value judgements, thus enabling clients to admit, accept and, assisted by the therapist, examine them more easily for themselves.

Coping phase (I understand what this means to me)

This phase involves digesting personal possibilities, limits, needs and emotions parts of which may have surfaced in earlier phases. Clients are guided towards becoming aware of and designating conflicts and desires that have become manifest in their body and emotional responses. Positive alternatives are offered to replace negative response patterns expressed by strong feelings such as anger, rage, fury and aggression. Aggression, for instance, can be transformed into controlled active movement, without discarding the emotion as such. Emotions are accepted, because they are a part of us, only their effects are consciously changed. The horse's natural reactions help clients distinguish between accepted aggression and adjusted responses to emotions "judged to be negative". Clients learn to nuance and leave polarities as they are. For instance, learning that " ... there are many nuances between firmly sitting on the horse and falling off the horse ... " may help clients "relativise" classical "black and white perception". This is also the phase where clients can have their unmet childhood needs satisfied by the horse symbolically "in the here and now". The deficits within a person's development and the ensuing conflicts are uncovered and structured enabling clients to develop, together with the horse, an alternative of "how it could have been if only ..." This is where the horse can play the role of a symbolic figure, a plane of projection or transition. Making such all-sensory and especially physical experiences of alternatives to the "historical deficit" will trigger the healing process. They enable clients to perceive new events from a different angle and place them within another context. They will prevent clients from seeking satisfaction of previously missed sensations in other people and, as this is bound to fail, from remaining in a vicious circle of repeating the old story (complete with frustration, fear and related mechanisms), of insisting on their "self-fulfilling prophecies" that prevent clients from "opening up" to new things.

Transition phase (I can use that):

This is the phase where the experiences made within a specific PMTV situation with the horse are transposed into daily life "without the horse". The therapist will begin to build a bridge within the existing relational triangle to be crossed by clients with the help of their

equitherapy-induced capabilities. Everyday life awaits clients on the other end. In this phase, clients bid farewell to the horse. It is now no longer their plane of projection and role figure. It will be "derolled" and return to being a horse, the exercise partner with whom everything has begun, and finally the simple horse going back to its herd. It is important to make clients realise that the horse has temporarily helped build the bridge towards interaction with themselves and others but that their own self will have to assume responsibility for whatever will happen next in their communication and interaction with other human partners.

Practical applications:

This concept provides a huge array of applications for different indications, ranging from serious chronic psychiatric and psychosomatic disorders to self-awareness groups for riders who want to know more about themselves and their relationship with the horse, or who are confronted with (occasionally "inexplicable") anxiety or tensions when practising their sport, i.e. feelings whose causes lie deeper and which cannot be improved by riding technique. I also use this method for traumatised youths, substance abusers and depressive patients in long-term treatment, but also for clients who have become stuck in their familial or professional development and who want to learn more about themselves in order to move on. Clients, however, must be capable of symbolic digestion and ready to invest patience and time in the individual "exercise steps" until they manage the technique. In addition, they must be ready to open towards their body's signals. The example of a client who had been assigned to me by an occupational therapist and only needed short-term therapy shows that " provided you have a "suitable" client " even a few sessions may suffice on condition that the postulated cyclical processes with their various phases are completed to round off the outcome and have a clear transfer from horse-based experience to "horseless" daily life. Just as in remedial vaulting or developmental promotion, the horse does not only help the client but also the therapist. I for sure can no longer conceive psychotherapy without the assistance of my horses.

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PEDAGOGICAL ALTERNATIVES TO MINIMIZE THE ANXIETY AND TO INCREASE THE CONCENTRATION IN CHILDREN WITH ATTENTION DEFICIT HYPERACTIVE DISORDER - ADHD: THE HIPOTHERAPY-VAULT IN QUESTION.

Author: Antonieta Martins Alves - Brazil

JUSTIFICATION

The difficulties of learning presented by pupils with educational necessities, in special those diagnosised with Attention Deficit Hyperactive Disorder - ADHD, in the scope of the public net of education of the DF, as well as the anguish of the teachers in the search for pedagogical alternatives that can solve such problems had been the motivated of this research.

At the same time, we observe the difficulties found for educators in the agreement of the process of development of these children, as well as the scarcity of resources offered for the representative agencies for the solution of the question.

Beyond these difficulties, also the lack of concentration and the anxiety presented for these children are identified as causes of not the learning.

Of this form we question, which the importance or necessity of that we teach and of that it learns for its social and relationary construction of Being? Where this learning can or goes to contribute for its construction of world?

Evidently we do not have answers for all these questions, thus if it makes necessary the search of new instruments that if constitute in viable pedagogical alternatives for these pupils with ADHD, mainly neurobiological illness with genetic component, Barkley (2002), that I become them capable to assist in the construction of think and operating being this actor and spectator in the society where they are inserted.

The Hipotherapy-Vault - sport modality of Olympic Gymnastics the horse, it comes being used in the conquest of self-esteem and self-control, for using elements as attention, concentration and, mainly, the reliable relation between all the involved ones: teacher, pupils and horse - beings livings creature in permanent exchange.

OBJECTIVE

To identify if the Hipotherapy-Vault, while alternative pedagogical - and as instrument (signs/mediation), it makes possible the reduction of the anxiety and the increase of the concentration in children with Attention Deficit Hyperactive Disorder - ADHD.

SPECIFIC OBJECTIVES

To analyze if the control of the anxiety and the improvement of the concentration level they produce resulted positive in classroom.

To analyze, it enters the diverse questions that inserted in this work, if it is possible to control of the anxiety and to increase of the level of concentration for intermediary of the Hipotherapy and if this pedagogical intervention - as instrument (signs/mediation) produces resulted positive in classroom.

To identify if the Hipotherapy-Vault improves the relation of the child with the world and himself.

THÉORIQUE BASE

According to Vigotsky (1991) the cultural origin of the psychic functions, the systems of signs (mediation) and the psychological functioning are decurrently of the relation between the individual/society, and the brain as main agency of the mental activity. Of this form, if it makes necessary the search of new instruments that if constitute in viable pedagogical alternatives for these pupils with ADHD, mainly neurobiological illness with genetic component, Barkley (2002), that I become them capable to assist in the construction of thinking and operating being this observer actor and in the society where they are inserted.

The search for modification of the proper behavior in actions that demand courage, balance, concentration and fellowship strengthen the confidence in itself and the other, modifying, consequently, also the environment, integrating the biological and social aspects of the child.

The Hipotherapy can constitute a "tool auxiliary" in the construction of concepts that can function as half assistant for inclusion of the individuals with ADHD diagnosis using itself it animal relation (horse)/teacher/pupil.

According to Vygotsky, "the use of instruments and the signs, although different, they are between on to long of the evolution of the species the human being and the development of each individual "(Rego, 2002, p.50) justifying, thus, the use of instruments and the mediating function of the same ones, as well as of the psychological transformations that occur.

Vygotsky (1991), when emphasizing the relation between the pedagogic and psychology appraises and detaches the social importance of the interventions in the Zone of inherent Proximal Development to all person who learns with another person. Of this form, for the author, the full development of the human being depends on the learning that carries through in definitive cultural group from the interaction with other individuals of its species, or either, "the human learning estimates a specific social nature and a process through which the children penetrate in the intellectual life of that they surround them" (Vygotsky, 1991, p.99). Thus, the learning if specifically transforms into the vehicle of the psychological characteristics culturally organized and human beings.

Of the neurological point of view the man developed a basic agency that all makes possible the "miracle" of the riding - a brain capable to establish enormous sequences of relations between the natural phenomena changedding itself into a machine to learn, in The Centaur Legacy, Bjarke (2004, p.1) affirms that "when the man and the horse, to carry through joint tasks, if they establish in an only biological unit forms a net of neurophysiologic cooperation between the partners ".

It is in this point that we see the insertion of it I turn around - gymnastics on the horse, "as those acrobatics that make in the circus" (Salvagni, 1999, p.45), where horse and knight evolve in the riding action as an only being, in perfect tunning with the rhythm and the movements of the horse, with gestures, felt and objective common demanding attention, concentration and control on the anxiety, is the union Homosapiens/ Equuscaballus.

Research points the guided and carried through physical activities of systematic form as instrument to increase the level of self-esteem, to guarantee the sensation of personal security and the capacity to support a frustration state. Such activities, when carried through on the horse, they have increased the difficulties and potentiality the conquests.

Of this form, the superior psychological functions, as factor of psychological development, they can be distinguished in "two qualitatively different lines of development, differing how much to its origin: of a side, the elementary processes that they are of biological origin; of another one, the superior psychological functions, of partner-cultural origin. The history of the behavior of the child is born of the interlacement of these two lines "(Vygotsky, 1991, p.52).

In this direction, the interrelation that we want to construct is enters the culturally acquired data biologically and, pointing then with respect to the Hipotherapy that, for being a "therapeutical method that uses the horse as instrument of intermediateness of the citizen with the way and obtains exactly promoting, still, an interaction and intentionally action of stimulaton/pleasant and mainly affective reply" (Alves, 2003, p.16), it contributes for the construction of the psychological system of transition.

METHODOLOGY

This research of qualitative nature used the following instruments: direct comment (individual notes of field, in team), interviews half-structuralized with parents and teachers regents in the beginning and end of the research, respectively 19 of April and 15 of December of 2005, documentary analysis aiming at attainment of the history of life of the individuals, application of daily pay and after-tests: RAVEM scales special up to 11 years; gradual the first RAVEM for people with more than 12 years (it verifies the intellectual capacity of the individual); Test of Percepto Organization - Motor: BENDER (supplies given on the motor age, emotional indications of some cerebral no function and indications). For physical evaluation we use: Vertical Test Jump: explosive force; Burpee: coordination enters the trunk movements, superior members (MMSS) and inferior members (MMII); Seat and Reach Test: flexibility; Flamingo Balances Test: static balance; Abdominal force; Flexion and Extension of Superior Members (applied test: bar); Scale and Index of Conners for parents and teachers.

INVOLVED INDIVIDUALS

They had been selected 5 (five) pupils of the Public Net of Education in Sobradinho-DF of the masculine sex, with ages between 10 and 14 years in the beginning of the program, with neurological diagnosis of Attention Deficit Hyperactive Disorder - ADHD. Four frequented 4^a year of the basic education and one frequented 5^a year. The 5 individuals had been distributed in two groups: 2 children in the Intervention Group - I turn around in this text called of **IG**, with work carried through in pair on and with the horse and, 3 children in the Control Group - Therapeutical Riding in this text called of **CG**, where each child was

responsible for the conduction of its would mount. Four (4) children make medication use (Ritalin). The initial and final actions of the two groups had been equal (before would mount: to search the horses, to clean, to place the saddle and the horse-boy function; after it would mount it: to place the horses in horse-pond and to unsaddle).

The inclusion of the pupils if gave meetings after, fulfilling of the Term of Free Clarified and Assent on the part of the parents and evaluations of the areas medical, psychological and physiotherapeutic.

MEASURES AND EVALUATION

The collection of data was carried through in differentiated spaces, classroom and school under the responsibility of the teacher regent, home - under the responsibility of the family, research of field in place the Canabrava Farm where the sessions of Hipotherapy under the responsibility of the researcher and other professionals of the area had been carried through. The application of the tests of Raven and Bender as well as its analyses had been under the responsibility of a psychologist of the Medical Center of Orientation Psycho Pedagogical -COMPP.

ARGUABLE AND RESULTS

The results had been based on the harvested data of 4 between the 5 selected individuals, for the fact of one of them, component of the **CG**, to present absents time and to have abandoned the school, paradoxically also it was abandoned by it.

The data had been classified in four categories: evaluations physical and psycopedagogical, index and scales of Conners for parents and teachers, interviews with teachers and parents presented in the bulge of the other evaluations.

Analyzing the Physical Tests

About to the Motor Coordination (applied test: Burpee), we observe that it had increase for all involved individuals and, of global form it was bigger in the **IG**, as Graph 1.



The Graph 2, above, verifies the Static balance (applied test: Flamingo), we observe that of general form almost all had reduced of significant form the number of attempts for maintenance of its static balance having indicated that the activities the horse had contributed for this improvement.

The test of Flexion and Extension of Superior Members (applied test: Bar) got a sufficiently low performance for almost all the individuals exception to the individual 1- **IG** that easily presented observed evolution when of the execution of the stop of three supports on the horse to the trot, requested exercise only for the **IG**. About to the **CG** the muscular weakness was probably the responsible one for not the execution of the same test (daily pay and after).

For the test of Abdominal Force (Graphs 3 and 4) we observe an increase of the execution for all the participant individuals of the research. In the detailed comment of these Graphs we can verify that it had a small difference for greater in the IG, perfectly justifiable because that this group for the quality of the stimulators played activities that demanded greater abdominal force.



When analyzing 5 Graphs - Vertical Jump, we observe increase in the potential of the two groups, **IG** and **CG**, however in the Graph 5a we observe that the growth of the **IG**, in absolute values if it presents greater that of the **CG**, also understandable for the type of



requirement of the activities carried through in the Vault as for example to mount and to dismount the horse in movement being used impulses proper and the horse.

The delicate point for almost all the individuals in inquiry was flexibility. The results for this test would have that to work in a scale with negative values, being the indicative for the necessity of bigger investment in activities with horse that work this specific aspect.

We verify that as much the **CG** how much the **IG** of global form had presented evolution of the motor point of view with bigger indices for the Intervention Group. Being important to stand out that all the parents had also standed out the physical profits, mainly those on ones to the motor coordination in its children.

Analyzing the Tests of RAVEM and BENDER*

For the Individuals 1 - **IG** (11 years, 4^a year for the basic education), a significant before-test was verified, decurrently of its emotional immaturity and motor age, however the after-test demonstrates that it had a development of 2 years in a period of 6 months, being a classified result as good. It's pertaining to school level increased in two years. It has good potential to develop itself if stimulated correctly. It on this side presents neurological development of its chronological age is emotionally infantile, we observe that in this aspect the vision that the family is similar.

The Individual 2 - **IG** (11 years, 4^a year for the basic education), also it presented significant improvement in the period of 6 months. With intellectual capacity in the average and potential for academic development. What this hindering its growth this directed toward the emotional aspect and its immaturity. It was observed that it approximately had evolution in its motor age in one year, exactly thus it meets in imbalance for its chronological age. The brain still not this ripened the sufficient, what it can be confusing is some cerebral unfunction, had to the TDAH. It has good well stimulated prognostic if.

For the Individuals 3 - **CG** (12 years, 4^{a} year for the basic education), it was observed that this did not present good development in level percepto-motor, if it kept approximately with referring motor age to the 9 years, however its pertaining to school maturity is referring 4^{a} year for the basic education, according to before-test where on we will base them, a time that had degradation for 3^{a} year for the basic education in the after-test. Its percept-motor immaturity as well as its emotional difficulties confuses it to get good academic results, according to him mother the family classifies it as immature.

For the Individual 4 - **CG** (11 years, 2^a year for the basic education), it was evidenced that this kept its pertaining to school age in 2^a year for the basic education, its motor age did not develop of 7 years, it presents problems of relationship with the way, as well as the others, however emotionally it can be more mature than the others, was not observed in the test the emotional level immaturity. In accordance with its teacher "is safer, it improved the concentration, it concludes the presented activities, having still evolved for cursive letter ". It needs more works the motor level and pedagogical therapy. Being valid to stand out that it was the only individuals of the research promoted for the following year for the basic education.

For the analysis of the tests we can identify that all the individuals of the research have potential for the learning being necessary more investments in works in motor level and pedagogical therapy.

Although to be able to identify to profits of the academic point of view this a time was not reflected in pertaining to school advance that 80% of the involved individuals in the research (initially they were 5), they had been not to academic promotion in the school that was attending a course, all the teachers, although to reveal receptive for the research, they consider as possible causes, *"without of pedagogical support on the part of the institution, unfamiliarity of the previous diagnosis of the pupil, very great group without the reduction foreseen in law, as well as not the accompaniment of the child in the activities extra-classroom (two teachers)"*.

^{*} My special gratefulness to Psychologist Márcia Moreira Vargas for the voluntary contribution and devotion, without which I could not apply these tests.

The analyzed children (resulted for 4 that they had remained in the research), they present good potential to develop itself, and they had gotten good growth with the proportionate stimulation for the Hipotherapy. Indicating psychotherapy and psychomotor work (Hipotherapy) searching the development in cerebral level.

We observe, still, that the two first individuals - Intervention Group - where the carried through work the horse was the Vault, they had gotten better resulted in the corresponding period of six months to the period where the data of field of the research had been harvested, indicating the efficiency of this modality of intervention.

Analyzing Index and Scale of Conners for Parents and Teachers

When we analyze Graphs 6 and 7 below, Index of Conners, we observe that an inversion of perception how much to the behaviors classified as undesirable between parents exists and teachers, or either, inside of the **CG** the parents had observed that to be have are more behaviors that the teachers. For the **IG** the comment was inverse, or either, for the teachers the individuals in study present a bigger incidence of classified behaviors as undesirable.



In the Conners Scale, Graphs 8 and 9 below, comparing the before-test and after-test it is perceived reduction of occurrences and the disappearance of undesirable behaviors such as: inattention, not relationship with the group, impulsiveneness, without autonomy, unreliability and difficulty of reasoning. Comment made for all the searched individuals, however, had to the reduced space we opt to using as demonstration the graphs of Individuals 4 that he in such a way presented the distinguishing greater between before-test and after-test for parents and teachers.



CONCLUSION

Analyzing the instruments used for evaluation we observe that parents and teachers register accomplishment of activities before not executed as, increase of the motor coordination, bigger conscience of its capacities and overcoming of the difficulties in such a way for the **CG** how much for the **IG**.

The global analysis of all the graphs, questionnaires, tables and psycho pedagogical evaluation strengthen the information above in a differentiated level, proving that in the Intervention Group we got resulted more significant about to ample the motor coordination, force, agility, cooperation between the individuals, self-control emotional and academic profits exactly when this was not same to promotion to the new academic year.

The question of the not academic evolution is contained in a variable not controllable which is not the knowledge or not application of adjusted methodological instruments to the conduction of the works in classroom school on the part of the teachers, for this type of clientele.

About the objectives considered for the research we observed reduction in the anxiety levels, such as, to respect the "time" of the other, to wait its seated time. Of form more accented the Intervention Group it mainly developed great capacity of contribution and of concentration because during the Vault activities, carried through in pair and on the horse they demanded responsibility with the proper security and with the other.

These results strengthen the research that points the guided and systematic physical activities as instrument to increase auto-esteem, the sensation of personal security and the capacity to support a frustration state. It was still verified, that these activities, when carried through on the horse, they still value the conquests contributing, to increase to self-esteem.

We conclude that the Hipotherapy was important factor for the evolution and change of attitude of the searched children and that the use of the Vault represented a differential in this result.

We indicate, thus, the insertion of the Vault as instrument of mediation for the type of clientele fruit of this study, recommending, still, to initiate with younger children and that the duration of the intervention is defined in joint action between the involved segments (health, education, the family and professionals of the Hipotherapy).

We concluded, still, for the necessity to intensify the action with the school, and to approaching the academic work, Pedagogical in the classroom of the "Pedagogical of the Arena - indoor or outdoor" (terminology used for the researcher to classify the carried through pedagogical action in the Hipotherapy) thus emphasizing, that the construction of knowing needs interventions articulated between all the segments of the society, surpassing the classroom.

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MR DOWN'S JOURNEY THROUGH THE WORLD OF HYPOTHERAPY: EXPERIMENTAL STUDY WITH CHILDREN SUFFERING OF DOWN SYNDROME.

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SUMMARY:

We considered important to perform a study where it would be possible to evaluate the Hypotherapy benefits within the childish development of children suffering of Down Syndrome. To study we decided to apply an instrument which would let us evaluate distinct fields such as locomotor development, personal -social development, hearing and speech, hand and eye co-ordination, a scale of performance test and practical reasoning. After two applications with a distinct gap of four months through this investigation, benefits within the development of these children due to the Hypotherapy procedure are verifiable.

INTRODUCTION

Development of the child suffering of Down Syndrome:

The term developed by Vayer and Rocin (1988), "it has a general meaning of growing, progress and blooming. Applying to the child's evolution means that when we observe n time we assume an increase relating to the somatic structures, an increase to the personal possibilities of acting over the environment and consequently, progressions within the understanding and making be understood skills" (p. 15).

When a child is born with Down Syndrome, the doctors are peremptory about saying that it's not possible to preview their progress. It all depends... it's very common the existence of comments and discussions about the provenience individual's capacity of development. Is it

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innate?... is it acquired?... when a child is born with a disability very easily the "responsibilities" fall onto what is genetic or sometimes environmental explanations that produce such negative effects.

To Golebski, Oliveira and Tralli (1990, p.17), "the Down Syndrome is essentially a development delay, as from the body as from it's mental functions". The development of these children goes along lines of "normal" development. In spite of their particularities they tend to achieve all the targets being able to "learn to: smile, walk, stammer, run and speak, only with a little retard" (Golebski, Oliveira and Tralli, 1990, p.17).

Pimentel (1997), refers the coexistence of deficits on several levels of development of these children: on cognition, affect, eye contact, attention, speech skills, being harder the retard of manifest according to the communication level.

These children don't have a mechanism of mental structures for the adequate assimilation of the world, so any perceptive learning may be worked out through the best number of sensitive ways.

According to Isoni (2002), these children "(...) need stronger environmental stimulus to activate and activate their development potentials." (p. 86), so "the hypotherapy is a method of global therapeutic intervention and analytical, extremely rich, which includes the individual on its own psychosomatic complex." (Lubersac and Lallerly, 1773, p. 3), because "it demands the participation of the entire body contributing to the muscular development, relaxing, the awareness of the body itself and the improvement of coordination and balance" (Miranda, 2000, p. 86).

According to Santiago Santos (1997), on Hypotherapy the cadenced movement of the horse educates the mind and predisposes the child with special needs to new attitudes, higher attention, better balance and coordination. *"With the help of live and lived experience with the horse, the person can create various reasons to start, continue, modify, increase or remain on its only and untransferable art of living."* (Opa, 2000, cit by Cudo, 2002, p. 92).

MATERIALS AND METHODS

STUDY DESIGN

The sample is composed by 12 children suffering of Down Syndrome and their ages are between 5 and 8 years old. From those 12 children, 6 take advantage of the hypotherapy treatment (experimental group), whilst the other 6 are not subject of hypotherapy treatment (control group).

PROCEDURE

When adopting the experimental method, where we use the independent variable (the childish development of children suffering of Down Syndrome subject to Hypotherapy, and children in the same situation but not subject of Hypotherapy treatment), we define two groups where the participants with identical characteristics were distributed casually. Both groups were subject of two evaluation moments along the studied period of 4 months. Within the Experimental Group the evaluation occurred before the Hypotherapy practice,

and also 4 months after it. Within the control group there was also two evaluation moments, so we could obtain liability on the results.

Evaluation Tools: scale of mental development by Ruth Griffiths

The scale of mental development by Ruth Griffiths goes with the testing group of development and it represents the foundation of any childish diagnostic helping to situate the child's development. Once our sample is composed by children between 5 and 8 years old was applied by the Griffiths' scale of development destined for those children from 2 to 8 years old which includes 6 evaluation sub-scales: locomotor development, sub-scale A; Personalsocial development, sub-scale B; hearing and speech, sub-scale C; hand and eye co-ordination, sub-scale D; performance tests, sub-scale E; practical reasoning, sub-scale F.

RESULTS

Once the sample has a very reduced dimension it has been opted to use the non-parametrical statistic, so we used the Wilcoxon's test (comparison between two dependent samples) and the Mann-Whitney's test (comparison between two independent samples).



Intra-grouped Analysis: comparison between both scales of mental development applications (mediums).

Observing the Wilcoxon's non-parametrical test's results, on the experimental group we can assume that the increase is very significant, to p<0.05 from the first, to the second application on the following domains from the Ruth Griffiths' scale of mental development: personal-social: (p=0.046), hearing and speech (p=0.028) and performance (p=0.028).

The control group didn't reveal any difference statistically significant between the first and the second application on the scale's domains.





Inter-grouped analysis: comparison between the scale of mental development result of the experimental group and the control groups (mediums).

The Mann-Whitney's test revealed the inexistence of significant differences to p<0.05, between both groups on the scale of development domains within the first application.

We can also verify that the experimental group shows on the second application better results on personal -social (U=6.00, p=0.045), hearing and speech (U= 5.00, p= 0.037) and performance (U= 2.00, p= 0.010) areas, comparing to the control group.

This way, we assume that children using hypotherapy reveal a better childish development in comparison to those children who don't use this therapy within the mentioned areas.

CONCLUSIONS

The present study had as a general purpose to put in evidence the influence of Hypotherapy on the development of children with Down Syndrome. The results shown reveal that on the second scale's procedure the individuals belonging to the experimental group present a more significant development than the individuals belonging to the control group. We should then attribute this therapy to the present differences after four months of practicing it, by the individuals belonging to the experimental group.

The study, due to the reduced number of the sample elements, did not permit to take back very comprehensive and sufficiently significant conclusions to this study on Down Syndrome. There is also a lack of practical studies focused on this area and with this population the confront between results has not been permitted, so the study could better contribute to the improvement of knowledge relating to the hypotherapy procedure with these children.

However it allowed us to fill in the lacuna predominant on this sort of studies since it alerts to the importance of benefits on this therapy. The psychologist can recur to the Hypotherapy because it presents results to these children being also useful for the child having accompaniment on other areas all together with hypotherapy, so the child can obtain more advantages relating to development.

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THE RHYTHMIC INFLUENCE OF VAULTING IN THERAPEUTIC REHABILITATION

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RESUME

Introduction: Vaulting is a equestrian modality of technique and balance, that it has as objective the improvement of the harmony and the synchronism with the horse in movement. It is an adaptable activity that joins with practical of the physical exercise to the interest by the horses, considering that the vouter and the horse form a team and depend mutually one of another. The union permits to the vouter adjust itself to the movement and rhythm of the horse, this harmony also is required in the global functions of the individual person helping in the development of the main capacities also motor, psychological and cognitive abilities. **Objective:** To evaluate the emotional and functional evolution of the individual person in elapse of the sessions with the utilization of the therapeutic vaulting. **Method:** It applied as methods of evaluation in Functional Independence Measurements, composed by eighteen articles with maximum quotation of seven points and minimum of a point, being that this is fundamental for that the functional alterations are observed with sufficient sensibility. Result and Conclusion: According to the facts obtained through the Measure of Functional Independence was able to conclude that the therapeutic vaulting becomes itself a technique of adaptable physical rehabilitation with focus in rhythm and harmony of movements, that is going to optimize the activities of daily life, the self-esteem and confidence of each individual person.

INTRODUCTION

The history of the Vaulting started from the ability of go up and come down of the horse in movement that consisted of warlike ability, this was utilized like an act of survival in an epoch marked by wars. Right away, was used as forms of develop the equilibrium, agility and elegance of the rider in the Old Roman Empire, the riders carried out acrobatics above the horse in movement in the Roman Games. Like this arose the artistic Vaulting, characterized by artistic criteria as precision, difficulty and harmony.

With it pass from the time, following the ideal of perfection created by the Renaissance, the esthetics of the movement passed it to be valued and the movement then, should show beauty, lightness, security, accuracy and perfection. After 2^a World War, the vaulting was developed in the Germany. Of that epoch to the moment has been utilized also as forms of initiation to the horseback riding, offering to the beginner a way of will become more involved with the equestrian sports.

The Vaulting is defined like an activity that involves characteristic exercises of the artistic gymnastics, with static and dynamic movements beyond acrobatics combined to elements of the dances about the horse in the gallop, being that in the therapeutic vaulting the therapys

are carried out in the three horse marchs according to the independence of the individual person.

It consists of a range of exercises classified in mandatory and free that they can be performed individually, in pairs or trios. The series of movement follow an esthetic criterion, in that are utilized the specific physical capacities for the achievement of the technical correct one of the exercises, that should be in full harmony with the choreographic interpretation and with the musical accompaniment.

They were analyzed the figures of vaulting, individually correlated with their probable motor benefits and therapeutic adapted. These postures were applied in four patients with ages between 14 and 26 years, bearers of cerebral palsy and paraparesis spastic family.

The paraparesis spastic family compose a group of illnesses neuro-degenerative, genetic and clinically heterogeneous, characterized by hiperreflexive and spascity progressive of the lower members.

The cerebral palsy is a clinical condition and etiologycal heterogeneous, that is characterized for alterations of the muscular tone, of the posture and functional difficulties in the movements. It can generate involuntary movements, alterations of the equilibrium, of the goes, of the speaks, of the vision, of the hearing, of the facial expression and in graver cases can have mental compromise (Nitrini et al, 2003)

Based in these concepts, this article was elaborated with the objective of apply the therapeutic vaulting and the music as resource help for stimulate sensory experimentation, the rhythm, the motor development and to socializing of bearers with special needs. It was possible then evaluate the emotional and functional evolution, through an approach of evaluation inFunctional Independence Measure , that I possessed important estimates about the domains of the daily activity of an individual.

MANDATORY EXERCISES DESCRIPTION

BASIC

In the basic position, the vaulter should be sat down immediately behind the saddle, looking at front, with a leg of each side of the column of the horse, holding a handle of the saddle in each hand. To hip should accompany the movement of the horse. The lower members should involve the horse, in smooth contact. The feet should aim for soil, maintaining the alignment of the leg, the spine of the foot should be aimed for the the front. **Variation:** the vaulter keep the basic position with upper members opened. The upper members, neck and should estimate the should be lengthened, and should not be strict.

Motor activity: It improves equilibrium of trunk, mainly with the aid of the variation of the exercise; improvement in the posture and absorption of the oscillation of the horse to the pace; the horse in circle, driven by long guide, favors the reactions of protection of the individual person.

Adaptation: Correction postural, not utilization of the saddle by shortening of the adductor musculature, spacity and/or deficit of muscular force. Variations with the upper members

for bigger recruitment of equilibrium and motor coordination. It maintain to stretched legs in pathological standard inhibition cases.

MILL

From the basic position, the vaulter performs a complete rotation about the horse, in four phases of equal time.

Phase 1: the external leg passes about the neck of the horse (external regarding interior part of the circle), each handle is start and resumption while the leg passes for her. This phase finishes with the vaulter sat down of side come back for the interior of the circle, about the hip, united legs involving the horse.

Phase 2: to another one leg passes then about the hindquarters of the horse, finishes with the vaulter sat down in the basic position reversed.

Phase 3: the internal leg passes about the hindquarters of the horse, and the vaulter sits down of side come back for the outside of the circle.

Phase 4: the leg that this next to the saddle passes about the neck of the horse, each handle is start and resumption while the leg passes for her, finishes with the vaulter in the basic position. The mill is performed with rhythm of tally in four times, each leg should describe a broad and uniform arch, ideally in the vertical one. The head and the shoulders should accompany the rotation of each leg with maintenance of posture.

Motor activity: Rhythm, Motor Coordination, Muscular Strengthening (Aductor muscles and abductors of hip, flexor of hip and abdominal).

Adaptation: The handles of the saddle can be of smaller size and develope for the of normal size, due to the presence of muscular shortening and/or spacity. Being able to to be carried out first with the aid of a lateral therapist during the transferences with the horse stopped, evolving for the achievement of the changes of posture with the horse in movement.

KNELT / BANNER

From the basic position, the vauter passes to the position knelt. Smoothly with the two knees simultaneously, the spine of the feet, the ankles and after these the knees, should touch the hindquarters of the horse. The vauter always should be looking at front, the external leg should cross diagonally about the column of the horse, with the internal foot of the vauter put in external interest also. The weight should be distributed uniformly through the leg, ankle and spine of the foot, the internal knee should be slightly at the front of the thigh, in order to help the knee and hip it will absorb smoothly the movement of the horse. The external leg then is extended, in order to that the foot stayed put above the horizontal line graduate through the shoulders and hip of the vauter, at the same time the internal arm is lengthened for front. The plant of the external foot should be turn for top and the palm of the internal hand below, with the fingers closed. The external hand remains in the handle, with the arm slightly inflected for absorb the movement of the horse. The silhouette of the vauter should form a stable and smooth arch, since the fingertip of the hand to the fingers of the foot. The longitudinal axis of the body of the vauter should be in the same alignment of the column of the horse.

Motor activity: Discharge of weight, Dynamic Equilibrium, Muscular Strengthening (Flexor Muscles of Hip, Most minimum and Medium Gluteus, Paravertebral Muscle), Reactions of Protection, Spatial Notion, Laterality, Posture.

Adaptation: The exercise can be initiated in the bolster, afterwards in the barrel and/or with the horse stopped and with the hands in the handles, evolving for the liberation of the hands alternately. The evolution of the kneeling one is the banner that can be deed first without the liberation of the hands, barely with the stretch of a leg and evolve for the retreat and stretch of the arm contralateral, can be carried out in the bolster and in the barrel as preparation for the movement.

STANDING

From the basic position, the vauter passes smoothly to the position of knees simultaneously with the two legs, the spine of the feet, the ankle and the knees should touch the back of the horse smoothly. Immediately the vaulter transfers the weight of the body for the arms and jumps for of foot, supporting itself in the plant of the feet that should be aiming for front. For it compensate the movement in circle of the horse, the discharge of weight should be in the internal foot of the vaulter. The evolution of the exercise is stretch of log and entrance of hip, when will be in equilibrium with the threedimensional movement of the horse loosens the handles and elevates the shoulders until the vertical position arrive, when then opens the arms lateral. The movement of the horse is absorbed by the ankles, knees and hip of the vauter, his weight should be well distributed in the plant of the feet, that should be in total contact with the horse (Paes et al, 2001).

Motor activity: Tonic adaptation, Discharge of Weight, Dynamic Equilibrium, Muscular Strengthening of lower members, Reactions of Protection and Equilibrium, Posture.

Adaptation: It is one of the most difficult figures therefore requires a bigger concentration and motor ability, can be carried out with a therapist gotten on the withers and/or two lateral therapists, with the horse stopped or in barrel of movement for adapt the individual to the posture, is able to this be initiated posture with the horse to the pace and in lineal direction. The horse in circle would be an evolution of the exercise because requires of the vauter bigger ability and equilibrium.

METHOD

SUBJECTS

As participated of this I study four patients, two bearers of cerebral palsy and two bearers of paraparesis spasticy family, respectively B.G., 14 years, female sex, M.H., 18 years, female sex, V.S., 24 years, female sex, TO S., 26 years, female sex. All carry out service physiotherapycal, complementary and already carried out Therapeutic horseback riding there is more of a year.

MATERIALS

They were utilized for the therapys, device of sound, CD, Vauting blanket, Vaulting Saddler, Fixed Bridle, Auxiliary Bridle, Header, Long Guide and Vaulting Whip.
PROCEDURES

In the corresponding period to August of 2004 until November of 2005, were carried out the therapys with the introduction of the therapeutic vaulting, weekly with duration of forty-five minutes.

Previously the individual persons selected were submitted to an evaluation physiotherapy and to the application of the Functional Independence Measure. The evaluation permitted us know more in detail the potential and difficulties of each individual person, enabling list the activities that would be viable of execution and elaborate better the sessions. All of the therapys were preceded of tonic adaptation, extension and heating; and finalized with relaxation. The mandatory exercises were utilized like base for the sessions. To each individual person was offered an approach individualized of choreography, where could

they express her creativity, her emotions and her musicality.

RESULTS

Each one of the eighteen articles of the Functional Independence Measure has a maximum quotation of seven points and the most minimum quotation is of a point. The quotation more elevated is, therefore, of 126 and to more drops is of 18.

The quotation in seven levels is fundamental for that the functional alterations are observed with a sufficient sensibility.

Functional Independence Measure evaluation, carried out in August of 2004 and November of 2005.

Results	B.G	M.H	A.S	V.S
2004	106	120	98	96
2005	111	125	102	103

The four individual persons analyzed obtained a good average in the results of the Functional Independence Measure , that was utilized like parameter for the initiation of the therapeutic vaulting.

To the end of the study all of the individual persons increased significantly its medium. Upon we will analyze the results, we consider then the evolution of the individuals in the general aspects, rhythm, development and socializing.

In the general aspect the results were satisfactory, therefore to the end of the first year we obtain to elaborate, mount and present a choreography.

The choreography was mounted with the collaboration of the individuals, that also chose the song it to be worked.

In the aspect rhythm was able to be observed functional improvements, therefore the individuals obtained to acquire abilities for accompany the marking of time in the exercises proposed by palms and numerical tally carried out by the therapist.

Regarding the motor development, were verified significant improvements, therefore we verify that the movements utilized in the choreography were automated and memorized, being carried out with harmony and equilibrium.

Regarding socializing, in the beginning all of the individuals optimized the idea, however had a case of rejection to the therapys in pair. It was possible visualize the improvement in the self-esteem by means of the growing worry of the students with the personal neatness and with the visual one.

ARGUMENT/CONCLUSION

The development of a normal individual person depends on its capacity of move itself and experience sensations. The experiences favor the assimilation of new structures, or be, the motor act promotes learnings that will facilitate future basic acquisitions (Zaniolo and Kubo, 1993).

Second Bobath, the development visual, motor and perceptual of the individual person is influenced by his motor development, therefore difficulties will occur in the movement and exploitation of the own body, difficulties in the its global development will occur (Bobath, 1990).

The special needs bearers individuals explore and relate itself poorly with his own body and with the external environment, due to the difficulties in the execution of the movements, complicating like this the acquisition of new abilities and experiences.

The rhythmic activities permit to the individual express the movement and his state of momentary spirit. Through rhythmic activities is possible carry out contraction and muscular, strong or weak, quick relaxation or slow, with speed accelerated or diminished and with different durations (M.P.E., 1990).

These activities developed with bearers of special needs have like objectives provide to please, stimulate the experimentation of specific, natural, and free movements for that can express the joy of the movement, develop the capacity of concentration and prepare the individual person for the activities of daily life (Holle, 1976).

The Vaulting as therapeutic resource has like objective develop rhythmic movements, the motor coordination, the harmony and control of movements, posture, body perception and basic motor abilities creating equilibrium reactions and artistic.

From the results achieved we believe that with the song and the therapeutic movement we enable, to these individuals, pleasant and new experiences stimulating his motor and sensory roads and consequently a development psicomotor more near to the standards of the normality.

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MOZART, MY HORSE AND ME



The human body works like a symphonic orchestra, where each element must be in perfect harmony. The brain carries out the musical score function, which defines the melody (functions)that must be perform by the orchestra; and, of the melody, which notes must be played by each instrument of the human body. The whole human body as well as the orchestra, must be coordinated by the director, who controls the time and rhythm. In the case of the human body, the director is the heart and its cardiac rhythm, as follow:

LCR	NCR	HCR
100	130	160
70	100	120
60	80	100
40	50	60
	LCR 100 70 60 40	LCR NCR 100 130 70 100 60 80 40 50



200 - (age) = Maximum Cardiac Rhythm MCR X 0.7 = Normal Cardiac Rhythm MCR X 0.6 = Low Cardiac Rhythm MCR X 0.8 = High Cardiac Rhythm

Author: Francisco Muños Hinojosa - Mexico

NOTE: The cardiac rhythm varies with the person's weight and height, as well as with the height above mean sea level.



The human body is a perfect machine, therefore, it is important that, for each activity all the elements have the same musical score (brain's functions program) and perform the melody at the same rhythm, (cardiac rhythm) this is defined as harmony.

If an external instrument is added to an orchestra, this new instrument must be adapted to the music score and the rhythm of the rest of the orchestra, or

else, it would be out of tune, this is, discordant with the rest of the instruments. It is easier to adjust the new instrument to the orchestra, than to adjust he orchestra, director, and musical scores to the new element added. Likewise it is necessary that any external activity should be adjusted to the human body, so that the whole team works in harmony.



When we listen music, it should be in accordance with our emotional mood, habits, traditions, feelings and musical education, For example, Mozart's music was created in accordance with the human body rhythm. For this reason, when listening to it, we experience a sensation of pleasure and our body produces endorphins. A great feeling of permanent safety may be perceived throughout his compositions. There are not unusual moments; everything is perfectly synchronized. His masterpieces are developed with neither crashes nor surprises. This is why Mozart becomes accessible to everybody and we never get tired listening to him.

The universe is full of rhythms. Everything has its cycle, everything is periodic: years, raining seasons, day and night, the planet movements, life cycles, heart bits, breathing, atom movement, etc.

The world was harmonized in resonance with the rhythm of its heart metronome. Its heart of child marks the modulations of the expression of its direct and nicely connected soul to his own style.

In Mozart, the difference of time between one note and another is 0.5 seconds. This means that chords are played to the quarter note on a compass of 4 times. Then, a space of 0.5 seconds equivalent to 2 for each compass, meaning 120 quarter notes

(crotchet) per minute, or a tempo of 120. This, regarding the execution speed.



Mozart Eine Kleine Nachtmusik, K. 525 Violin I Allegr



From the point of view of its appearance, the horse is an aesthetic animal with symmetrical, harmonic and elegant curves that produce visual satisfaction, according with the basic harmony everybody likes. Its proportions, colors and dimensions create a symmetrical set with the rhythm of visual appreciation.

The movement in horseback riding is harmonic, coupled to the rhythm of the human body, not only for their similarity with the dynamic in march patterns but also for the

frequency in horse steps which is coupled to the heart rhythm with a cadence from 40 to 60 steps per minute. This is equal to what the horse supports in each step, right hand and left hand, giving us a rhythm between 80 and 120 footsteps per minute, with the same rhythm as Mozart's music. This man-horse harmony is given in a natural way and creates a sensation of satisfaction, favoring the production of endorphins (the Drug of the Happiness, ENDOGENOUS, PEPTID).





If the horse we are riding gallops, our body produces adrenaline, accelerating our heart rhythm; and again the movement of the horse enters in resonance with the heart rhythm of our body.

Regardless of our liking or disliking horseback riding and if we know or not how to ride, the rider's movement on the horse produces us satisfaction and pleasure.

To integrate an orchestra, we require a director, a composer, some ruled sheets and the orchestra's elements.

The composer must know which elements of the orchestra he has and which are their skills, so that he integrates them and they may interpret his music in a rhythmic way. He will compose his music depending on the audience and the elements of his orchestra.

Under normal conditions, this process is automatic and does not require external help.



A problem will arise when one or several musicians do not perform correctly, if the composer does not properly know the orchestra's members, if his ruled music sheets have mistakes, or if he is not a good composer.

The same happens with the human body, if the brain does not integrate its elements correctly (sensorial integration), if some of the elements do not perform their functions correctly, if the brain has some damage. If one of several of these occur, then the coordinated work of the human body does not carry out its functions correctly. This is the time when the hipotherapist is

required as an instructor, so that the person does what he is supposed to do, and stops doing what he should not do.



Together with an interdisciplinary team of doctors and experts on horsemanship, a diagnose is required, in order to interact so that each element works in accordance with a program known as ontogenesis of the psycho-motricity.

The sensorial integration function implies genetic load, brain functions with their integrated internal sensors (propioceptive and vestibule) and external sensors (visual, auditory, olfative and taste, somatosensory).

Skin tissue is also sensitive to sound, as opposed to what

is habitually taught. This is because investigations allow to suppose that skin tissue receivers are the result of cell adaptations of the lateral line of the inferior fish. These cells would then give origin to Corti cells and to cells from the skin tissue, true elements of adaptation to the aerial life of this exceptional primary cell.



"Every living thing vibrates". Everything organized to achieve a reflexive participation towards life, demonstrated by rhythms, cycles and sequences, is oriented to the development of the nervous system. Everything proves that the system activity depends on the amount of stimulations received. The resonance effect between Mozart's music, the horse gait (walk), and the heart rhythm, produce an effect denominated "carrier."



Sounds are waves that oscillate in a rank from 20 to 20,000 cycles per second (Hertz) and its propagation is of short distance. However, there are high frequencies that propagate long distances in the atmosphere. Therefore, we take advantage of these high frequencies as a means of transportation, to carry out sound frequencies and achieve that sounds arrive up to very long distances. This concept gave origin to radio-communications.

In the same way, neuro-physiologic processes of rehabilitation are more effective if we use a carrier. In this case, we take advantage of the horse tri-dimentional movement, in order to



obtain optimum mental status and make the integration of the neuro-sensorial stimuli more efficient in the brain, by increasing neuronal connections and plasticity. A pleasant activity is more efficient and yields better results, so we use endorphins as a pleasant mean of reducing pain, minimizing therapy discomforts.

The horseman's movement during the hippotherapy normalizes first the reptilian brain (R complex) formed by the basal ganglia, the cerebral shaft and the reticular system, improving instinctive life and survival:

eating, drinking, corporal temperature, sex, territoriality, self-protection, sleep and vigil cycle, breathing, etc.

Hippotherapy normalizes the old mammalian brain (Limbic system) formed by the thalamus, the amygdale, the hypothalamus, nuzzling, the septal nuclei and the hippocampus. It is in this area where the most important endocrine glands of the human being reside: pineal and



pituitary, improving pleasure-pain sensations,



nutrition, orality, protection, hostility, socialization, sexuality, long term memory, emotional processes, presentpast relationship, etc.

Finally we interact with the cortex brain (Neocortex) the most advanced area in the brain development, mainly constituted by the cortical brain, in its two hemispheres, specifically in the front region, favoring a superior way of voluntary attention, setting actions of intentions, plans and programs, constitutes the base of almost every way of specific human activity. It is a method for the organization of almost all superior ways of human behavior, as it favors the sensorial integration, the static balance, movement coordination (parts of the body), visual and movement coordination, audio and motion coordination, perception, retention memory and evokating memories, self-esteem, superior ways of behavior, creativeness, art, language, etc.



The superior mental processes depend on the stimuli that, in a great extent, are largely dependent of the internal hearing, and the audio, visual and skin perception stimuli. This function is stimulated by the rhythm and cadence transmitted by the horse to the horseman.

In fact, the force of gravity permanently

compels the body to maintain a true dialogue with the environment. In consequence, the greater the vertical position is, the better the nervous stimulation is, and the bigger the movement ability will be. Movement, the vertical position and the cortical load are intimately bound.





Let me remind you that the inner ear contains in the labyrinth two groups of apparently different activities: the vestibuli and the cochlea; and that they constitute one and only organ, which has been improved to perfection in order to respond to the new activities it should handle.



Primate brain

Human brain

CONCLUSIONS:

SIMILAR TO CR	UNDER CR	ABOVE CR
Endorphins are produced	Serotonine is produced	Adrenaline and Noradrenaline are produced
Improves: Emotional mood Produce Analgesic Neuronal Sinapsis Mental status Sensorial Integration Static balance	Sleep & vigil cycle Diminishes depression Normalizes Hearth rhythm Secretion of growth hormones Helps autism	Learning Liver Muscles Increase blood pressure Increase blood – vessels

Benefits of hippotherapy

CR= Cardiac Rhythm

TRANSDISCIPLINARITY: A NEW PARADIGM IN THERAPEUTIC RIDING

Author: Amauri Solon Ribeiro - Brazil

"Nous savons que le mode de pensée ou de connaissance parcellaire, compartimenté, monodisciplinaire, quantificateur nous conduit à une intelligence aveugle, dans la mesure même où l'aptitude humaine normale à relier les connaissances s'y trouve sacrifiée au profit de l'aptitude non moins normale à séparer."

> Edgar Morin, in Réforme de Pensée, Transdisciplinarité, Réforme de L'Université

I. PROLOGUE

Lady Di

Diversity is my name I came from Mother Earth's womb

I am different Special Invisible hands wove my nest Beams of light Chords of sounds Waves of colors Gave birth to me

Brother Sun Sister Moon Heaven and hell Uncle Mars Aunt Venus Caressed my blossoming soul Multiple breasts fed me

My eyes were not fit for the regular Ways of seeing Yet they could see deeper My legs were not fit for the regular Ways of walking Yet they could carry me farther My ways were clumsy

> Born I was In the midst of nothing Greedy and awkward

Sensitive to the touche Yet I could not touch

Sensitive to light Yet I could not see it

Father Man Let me down Ugly caterpillar he called me

Wriggling through life I went Till skillful hands held me up Diversity I was named

Different and special I was Like a princess come from nowhere Born from Mother Earth Abandoned by Father Man The subtleties of the universe My companions were When I transmuted

> I unfolded my wings Of unviable worm Broke away from My imprisoning cocoon Crowned Lady Di Under Bachian chords I was

My wings now blue My ways now divine My dreams now fulfilled My complete self now in me Set me to outer space Flying Free

II. INTRODUCTION

The prologue is usually expected to be self-explanatory. I am afraid this is not. So, some words must be added to it. Here they are.

- 1. There is a tribute to Lady Di, the Princess, of course. In 1987, when it was believed that HIV virus could be transmitted through the touche and when AIDS patients were cruelly discriminated, Princess Di sat on a bed where a patient was laying down and held his hand. This helped changing the world's opinion, showed a compassionate way of dealing with difference. And also contributed to help people in risk. It was an example of solidarity, of compassion. Lady Di, in a certain way, was also a history of metamorphosis.
- 2. There is also a reference to identity. Special mention to those of us who are special in some way. Who isn't? Also, to those of us who carry some sort of handicap. Who doesn't?
- 3. Nature is here: us and around us. The environment: planet Earth, the universe. The issue of natural boundaries. Where do we live: on planet Earth, in the Solar System ? Who are we ? Where are we bound to ?
- 4. There is certainly the issue of freedom, liberty. Freedom of what ? Liberty for what ?
- 5. Transformation, metamorphosis: our permanent way of being.
- 6. All those issues, and many more, are present in the core of the work we do: equotherapy. They can be best represented by this very significant phenomenon: diversity.

And here is the challenge: how do we deal with such issues, especially with diversity?

How do we face diversity in our work, in terms of rehabilitation, therapeutic and reeducation methodologies we are expected to conduct with our patients?

How do we deal with diversity within our teams, among ourselves? Who is therapist, who is patient?

Does the traditional Cartesian/Newtonian paradigm that governs Modern Age suit our needs and help us answer our questions?

It is imperative that a new paradigm be discussed: transdisciplinarity. That is the scope of this paper.

BASIC CONCEPTS

The history of knowledge production has come to our times stressing science as the hegemonic way of production. Other types of knowledge were denied or undervalued. Science was established through the notion of splitting the whole into parts to acquire knowledge. A large number of disciplines emerged from that notion. Based on technical knowledge science took the gigantic step that led to the industrial revolution and changed the face of our planet.

In the 20th century, the speeding up of the technical revolution stiffened the disciplinary scientific knowledge production structure and brought up the questioning of the axioms of mechanicist paradigm. Quantum theory produced a new revolution in physics and science. New needs made imperative the emergence of multi and inter-disciplinar teams in all fields of science. More than that, the degree of complexity of facts, challenges and problems of the globalized world imposed the necessity of rescuing the legitimacy of knowledge beyond and outside formal accepted science.

Transdisciplinarity, as an emerging paradigm, proposes to transcend the hermetic universe of science and bring to the surface the fantastic multiplicity of knowledge production ways, as well as the acknowledgement of the multiplicity and diversity of producers of such knowledge. And thus arise the need to reinforce the value of each single individual-subject as producer and carrier of legitimate knowledge.

Transdisciplinarity calls our attention to diversity. We are asked to be aware of the potentiality of heterogeneous tendencies, in contrast with the homogenizing trends of recent times.

As stated by Morin (2002), in order that the practice of transdisciplinarity be a solution, a "reform of thinking" is needed. Scientific principles are in permanent process of development and we today know that they are not an exclusive reflection of objective reality. The structure of the human spirit and the knowledge of socio-cultural conditions are also inextricable part of them.

Traditional prevailing paradigm is in the middle of a crisis and a new paradigm arises as a way out of ultra-specialization of scientific knowledge.

According to Santos (1996), the main characteristics of the new paradigm are:

- a. The end of natural sciences/social sciences dichotomy, as well as the overcoming of other dichotomies such as natural/artificial, mind/matter, observer/observed, collective/individual;
- b. Overcoming of knowledge splitting and arbitrary reductionism, with the upcoming of the knowledge of the whole – a knowledge that is neither deterministic nor descriptive, established through a plurality of methodologies;
- c. The need for a new form of knowledge that includes the subject; a comprehensive and intimate knowledge that can be transformed into practical know-how and wisdom for the daily living; a kind of knowledge that allows the contemplation of the world, rather than the desire to control it;
- d. The recovery of common sense, promoting the enrichment of its utopic and liberating dimension through dialogue with scientific knowledge.

Transdisciplinarity was first mentioned by Piaget in 1970, when he proposed higher levels of interdisciplinary relations. He was considering such relations inside total systems, with no established frontiers between and among disciplines. It was like a dream for Piaget. It was from the 80's on that new movements in several fields have been characterizing this new paradigm. And these currents have clear convergence of thoughts that are presently being discussed: autopoiesis, self-organization, complex thinking, collective intelligence, theory of nets and so many others. Transdisciplinarity and complex thinking contain diversity and are effective tools to comprehend it. And, in order to put it into practice, it is necessary, according to Morin (2002), to reestablish the connection between knowledges, implying a new process of re-learning scientific production.

The tendency towards transdisciplinarity cannot anymore be denied. The First World Congress of Trandisciplinarity, Convento da Arrábida, Portugal, from November 2 to 6, 1994, set the definite basis. Signed by Lima de Freitas, Edgar Morin and Basarab Nicolescu, The Charter of Transdisciplinarity was then adopted. It was and still is open for all of us to subscribe it. It is our turn now to do so. It must be read in full, but here the four initial articles are transcribed as follows:

Article 1:

Any attempt to reduce the human being by formally defining what a human being is and subjecting the human being to reductive analyses within a framework of formal structures, no matter what they are, is incompatible with the transdisciplinary vision.

Article 2:

The recognition of the existence of different levels of reality governed by different types of logic is inherent in the transdisciplinary attitude. Any attempt to reduce reality to a single level governed by a single form of logic does not lie within the scope of transdisciplinarity.

Article 3:

Transdisciplinarity complements disciplinary approaches. It occasions the emergence of new data and new interactions from out of the encounter between disciplines. It offers us a new vision of nature and reality. Transdisciplinarity does not strive for mastery of several disciplines but aims to open all disciplines to that which they share and to that which lies beyond them.

Article 4:

The keystone of transdisciplinarity is the semantic and practical unification of the meanings that traverse and lay beyond different disciplines. It presupposes an open-minded rationality by re-examining the concepts of "definition" and "objectivity." An excess of formalism, rigidity of definitions and a claim to total objectivity, entailing the exclusion of the subject, can only have a life-negating effect.

What do I mean when these four articles are chosen to represent the basic fundaments of transdisciplinarity? Here again diversity is in my mind. First of all, the refusal to reduce the human being to whatever definitions may available philosophies offer. Secondly, the acceptance of different levels of reality governed by different types of logic. Then, the disciplinary approach offered by transdisciplinarity including the new vision of nature and reality, as well as the refusal of mastery of one discipline over any other. And the semantic and practical unification of the meanings that cut through and lay beyond all disciplines.

We are still subject to mechanicist and reductionist conditionings implicit in Cartesian/ Newtonian paradigm. Man has been made machine. And being so, man has been left to be the object of technicians. Beyond that the capitalist means and production relations gave way to deep processes of rupture, fragmentation, egocentricity and disintegration of solidarity. Man is broken into multiple and conflicting personae, most of them determined by production needs and capitalist society requirements. Inexpensive consumer goods produced in large scale to satisfy the requirements of a large number of people are the source of pollution and degradation that is threatening our living environment. Religious fundamentalisms, sectarisms of different kinds, political blindnesses and madnesses, extreme cupidity under the name of free market are the source of extreme misery, wars and human degradation.

When health care is concerned, similar processes take place. Medical researches are directed to profit-making diseases and their curative medicines. Very scarce means are destined to prevention, to education, to public health. The human body is split into parts handed to different specialized technicians and techniques. No soul, no whole, no tenderness. Meanness, corruption emerge. All included, it is to be concluded that prevailing present economic theories and political practices open way to consider all such perversities as basic values, when in fact they are cruel and fragmentary polymorphous human pathologies.

On July 1997, during an interview to Label France conducted by Anne Rapin, when asked about globalization and "the planetary era", Edgar Morin pointed out that "…Indeed, because globalization is out of control, it is accompanied by many instances of regression. But it is a possibility that could be desirable. Obviously, globalization has a very destructive aspect: it generates anonymity, reduces individual cultures to a common denominator and standardizes identities. However, it is also a unique opportunity to promote communication and understanding between the peoples of the planet's various cultures and encourages their blending. This new chapter will come about only once we become fully aware of the fact that we are citizens of the planet first and foremost, and then Europeans, French, Africans, Americans... the planet is our homeland, a fact that does not deny the individual homelands of others. The awareness of our global destiny as a community is the prerequisite for change that would allow us to act as co-pilot for the planet, whose problems have become inextricably intertwined. If not, we would experience a fate similar to that of "balkanization", a violent and defensive retaliation against specific ethnic or religious identities, which is the opposite of this process of unification and solidarity throughout the planet."

Now, globalization is here, diversity is here; linear cause-effect thinking still regulates our modern world. How can we deal with such a vast universe of disciplines? How can transdisciplinarity help us?

The Field of Equotherapy

The field of equotherapy all over the world is strongly marked by traditional Cartesian paradigm. The Babel of expressions pervading the field of our work is a worrying symptom, more than a healthy diversity. Marguerite Malone (Serendipity Farm, Tuscaloosa/Alabama) called my attention to a pamphlet authored by Ann C. Alden, past president of EFMHA, in which she endeavored to list and define the various anachronisms used in the field and that she called "Alphabet Soup".

To illustrate the above-mentioned symptom, a brief listing of denominations used to identify what we do follows. It is possible that all of them are in some way represented in this Congress.

- Riding therapy;
- Therapeutic riding;
- Riding for the handicapped;
- Riding for the disabled;
- Hippotherapy, hippotherapie;
- Equinoterapia;

- Equotherapy, equoterapia;
- Equine Assisted Therapy;
- Equine Facilitated Therapy;
- Horseback Assisted Therapy;
- Equestrian re-education;
- Equestrian rehabilitation.

We all certainly suffer the consequences of our "Alphabet Soup", in our cherished Babel Tower. Difficult communication, sometimes impossible communication, to say the least. Not only among us, but also with our partners, sponsors, practitioners and their families and the public.

Although it is not the purpose of the present paper to justify and explore the need to adopt an unified language, this author strongly suggests the term Equotherapy coined by ANDE Brazil, the Brazilian Association for Equotherapy. This simple and dense word includes the terms "Equus" and "therapeia". The term Equotherapy is still free from compromising tones or biased meanings and may well represent transdisciplinary approach to therapeutic activities conducted with the assistance of an equine and of a multiprofessional team. It is for certain that a universally accepted word would contribute to unify the whole field of equine assisted therapies and would be closer to the new transdisciplinary paradigm.

More symptomatic than the diversity of denominations for our professional activities is the way we categorize our technical procedures. In general, therapeutic procedures are classified according to "programs", or specific, specialized methodologies based on a given way of perceiving the client's pathology or his/her perceived needs. They are all absolutely well based, but they are no doubt absolutely fragmentary. They are directly derived from and conditioned by fragmentary paradigms.

Fragmentary programs, no matter how well justified, start from the conception of a fragmented subject and lead to fragmentary approaches, to fragmented teams. We should not disregard the conditioning effects of judgemental stigmas supported by fragmented diagnostic techniques, based on mere personal perception or pre-defined by institutionalized pre-conceptions: riding for the disabled or for the handicapped.

The diversity of possible fields of knowledge that are able to contribute to human healing with the help of equines is immense. So is the number of people able to help. But they are far from us. They do not conform to our "high" standards and requirements. They are not formally included in scientific world. We are supposed to conduct "inclusive" methodologies, but we exclude more than we include. In a certain way, it pleases us to be "exclusive", "prime". It is not a mere coincidence that marketing strategies explore so much such expressions. And they hook us.

III. THE PRACTICE OF EQUOTHERAPY

It is our daily challenge to put into practice the new paradigm in our activities, in our therapeutic procedures. If you adopt the programmatic conception, you will certainly fall back into the old paradigm. Even when you have the new paradigm discourse, it is extremely difficult to put it in action. Our professional qualifications, our academic background, our training and experience in specific fields of expertise, our formal commitment to legal and

professional boundaries, all of them contribute to adherence to the old paradigm. And they are no easy issues.

Let me illustrate my point using Equovida, an equotherapy center in Rio de Janeiro, Brazil, where the author has the coordination role. We are presently a team of 14: 3 Psychologists, 5 Physiotherapists, 3 Speech Therapists, 1 Art Therapist, 2 Horse Experts, and 5 horses. This team has been developed through some kind of natural selection with a good deal of team discussion.

Who should lead the horse? Who conducts therapeutic sessions?

Let us consider a first case: a girl with cerebral palsy. That's a case for hippotherapy, correct? The horse specialist leads the horse, the physiotherapist conducts the session, correct? The Psychologist talks with the family, correct?

Let us consider another case: an autistic boy. This is a case for the Psychologist, who conducts the session, correct? The horse specialist leads the horse, correct?

Should I dare say that the answer may be no, not correct?

Well, the girl with cerebral palsy may have serious communication problems, possibly due to a certain order of malfunctioning. The autistic boy may also have serious communication problems, possibly due to other kinds of malfunctioning. We acknowledge we also have serious communication problems. We discuss the cases. All of us. When I say all of us, I mean all of us: Psychologist, Physiotherapist, Speech Therapist, Art Therapist, Horse Trainer. And other professionals, should they work with us. After discussion, three or four of us go to the arena with the girl or with the boy, all at the same time. Our sessions are always individual, in what practitioner is concerned. One practitioner, three/four therapists. Sometimes two sessions occur at the same time: two practitioners, each one with his/her team. Practitioners choose their main partner and they certainly help us choose the horse.

The main partner conducts the session. Interventions flow. Sometimes the Horse Trainer does the talking, Physiotherapist leads the horse, Speech Therapist does lateral aid, Art Therapist does the talking with the family. By the end of the day more team discussion.

Interpenetration is permanent, the puzzles have shape-changing pieces and show different pictures. No piece is rigid, fixed. Many times stress emerge. Shortest way is not necessarily the best way. More discussion is needed.

When the sun starts to hide behind the hills and the yellow-orange light of the sunset filters through the leaves of the huge mango tree, a magic hallo illuminates the arena. Saddles, toys, bridles are collected and kept in their places. Groups gather; voices, feelings, jokes, hugs, good-byes. Another long and tiring day is over. This is our equotherapy.

IV. THE DIALOGUE

An imaginary dialogue is here introduced to explicit and illustrate the main vectors of transdisciplinary paradigm. It is a kind of ego with alter-ego conversation, my ego representing all my Cartesian, traditional conditionings and my alter-ego exerting to emerge,

to give way to my new experiences, to my freedom of thinking. My ego is old. My alter ego is a teen-ager struggling for identity and self-assurance.

My Ego Old Paradigm	My Alter-Ego New Transdisciplinary Paradigm
Duality subject-object: I am one and separate from the universe.	Non-duality: I and the universe are interdependent parts of a system, inextricably associated.
Matter, life and information are also separate things in the universe.	Matter, life and information are manifestations of the same energy. They come from the same space, and are part of the same system.
Every phenomenon has a cause and is effect of a cause. Impossibility of phenomenon without a cause.	There is a circularity between cause and effect. Possibility of phenomena without cause.
I believe that the whole contain the parts, but cannot be contained in them	I know that all parts are in the whole, as well as the whole is in all the parts, as in an hologram.
I can observe and not interfere onto the object or phenomenon I am observing, independently of myself and my mind.	I know that my simple presence interferes with that I am observing. It comes out that knowledge is the product of the observer's mind, of the observed object and of the process of observation, at the same time.
Scientific observation so implies the exclusion of the observer.	I become part of that I observe, so I am at the same time subject and object of the knowledge.
I use my reasoning to process the data I collect with my five senses. I use my intellect.	I use all that plus my inner feelings, sensations and intuition.
I can only research what I can quantify.	I can integrate quality to quantity and can use both.
The ends justify the means, and this is the ethics of science.	Nothing is above respect for life and mankind. Bioethics must be in all sciences.
When I came to the Rehabilitation Center, I saw many disabled persons.	Many persons with abilities I did not know were present when I arrived at the health center.
We plan what we have to do and each of us does his job at his proper turn.	We plan and work together, all at the same time in the arena.
I know I am a Psychologist and my patient is supposed to benefit from my expertise. The same is true for each colleague and we are responsible for the process.	I always exert to engage the persons with whom we work in the therapeutic process. And I am quite aware how beneficial this is to me. The same is true for all of our partners. Responsibility is shared.
My colleague medical doctors, physiotherapists, speech therapists, psychologists and horse trainers have clear conscience of their fields of action and they do not interfere with each other, although we make a team.	We often exchange information and experience. Although I am not a horse trainer, I many times lead the horse. The same is true for all the others. Sometimes, if you look from a certain distance, you do not know who is who.
I am very competent in my field of expertise and I am in a permanent process of specialization.	I am certainly very aware of my needs for competency in the field I chose. But I have recently discovered that this field is much larger and wider than I thought. I do not know anymore to what degree I am an specialist or a generalist.
The proper distance must be established between us and our patients, so adequate therapeutic procedures may take place.	Everyday I feel closer to the people with whom we work and I am sure this is the best way to ensure that I give the best of me and take the best from them.
Hierarchy is essential for the benefit of team work and for our administrative staff.	We have some kind of "floating" leadership and respect is the basis of our relationship. Responsibilities are always shared.

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V. EPILOGUE

My dialogue is far from ending. As a matter of fact, it has just started. Questions arise very much faster than answers. I know I am on the way. I am not sure whether this is a good or a troubled way. But one thing if for sure: this is a way with a heart.

And the epilogue, as the prologue, also needs a clarification. I do not know what it will be and when it will happen.

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THE EFFECT OF THERAPEUTIC HORSE RIDING ON MANIÉRE'S DESEASE PATIENTS: THE STUDY OF A CASE

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ABSTRACT

Introduction: The Meniére Disease is an outlying vestibulopatia, for wich etiology has not been estabilished yet and symptoms are: exercise vertigo, fullness sensation and, tinnitus in the ear, dizziness sensation position, nauseas, vomits and loss of flotation audition. The clinical treatment, until then, is based on drugs such as betahistidine, cinnarizine, clonazepam, diazepam, dimenhydrinate + pyridoxine, domperidone, flunarizine, Ginko biloba, meclizine, ondansetron, pentoxyfylline or promethazire that are recommended to minimize or eliminate vertigo and associated symptoms. In extreme cases, the surgical section of the vestibular nerve and the destruction of the labyrinth due to drug injections. The rehabilitation is one of the therapies proposed in the treatment that can provided by the tridimensional movement of the horse.

Objective: The objective of this study was to verify the effect of the therapeutic horse riding on patient with Meniére disease not responding to the traditional clinical treatment along 8-15 years. **Methodology:** 5 patients were treated, aged at 40-50, male and female, extremely tense, all diagnosed by electrocochleography and electronystagmography exam with deficient outlying vestibulopatia, not responding to the medication along 8-15 years. The patients, under suspended medication, were submitted to a 30 minute weekly section of therapeutic riding for 2 months. Techniques of sensorial-motor stimulation that unbalance the practitioner and activates the proprioceptors of the muscular spindle had been used during the therapy sessions. The electrocochleography exam was accomplished before and after the treatment for comparison of clinical diagnosis. **Results:** Although some scholars believe that the vestibular system can supply other systems, but cannot be supplied, we observed, compared the initial and final exam results, that the therapeutic riding contributed to the work as an auxiliary method for vestibular rehabilitation in Meniére disease.

The Effect of Therapeutic Horse Riding on Meniére Disease Pacients: The study of a case

1-INTRODUCTION

The vestibular system, also called the organ of balance (Douglas, 1999) is made up of a vestibular device, vestibular nucleus and connections with the brain cortex (Machado, 2000). The vestibular system is the organ which detects the sensations of balance and its functional part, called labyrinth, is made up of cochlea, three semicircular channels and two chambers called utricule and sacule (Guyton, 1992).

According to Ganança and Cols (2004), the malfunction of the vestibular system can be caused by afeccions in the central (central vestibulopatia) or peripheral (outlying vestibulopatia) and takes place more frequently in females.

Meniére Desease is a outlying vestibulopatia of unknown ethiology and phisiopathology, with a variable incidence between 10 and 150 cases per 100,000 people. It is a chronical desease, of progressive worsening, related to an abnormal labyrinth pressure through the expansion of endolymph. It presents as particular clinical factors acute vertigo, sensation of tinnitus in the ear, náusea, vomits, and loss of hearing floatation (Kandel and Cols, 1997). Accounding to Schessel (1990, apud ANDE ANO), vertigo is not frequent, while deafness, loss of balance and **oscilopsia** (subjective sensation of visual objects jumping up and down) are usual symptoms of the desease.

Schessel (1990) and Ganança, (2004b), state that clinical treatment for Meniére Desease is usually based on drugs which only suppress the vertigo; in extreme cases, the vestibular nerve may be surgically sectioned in order to releave the symptoms and/or the destruction of the labyrinth may also be used to control the nauseas and vomiting. On the other hand, Ramos (2000); Ganança (1996); Barbosa and Cols (1995), as well as Hecker and Cols (1974), mention other kinds of complementary treatment for the rehabilitation of the vestibular system, such as: especific exercises for balance, especific foods, and the correction of habits and vices which are related to the risk factors.

Therapeutic Horse Riding, according to Teixeira (1999), is one of the treatments which provides benefits to the vestibular system for being able to make up for the vestibular and proprioceptive touch deficience. The author states that the tridimensional, rythmic, swinging movement provided by the horse to the practitioner stimulates the vestibular system, improves time and space conciousness, as well as concentration, balance and consolidates gravitational safety (Uzun, 2005).

At Therapeutic Horse Riding, the horse is the responsible mediator for the rehabilitation, since while it walks, its back provides tridimensional movements on the rider (movements in 3 axis: vertical, horizontal and diagonal) and also 5 ° translation and rotation movements on the pelvic spindle, requiring therefore the participation of the whole body (ANDE, 2004a; ANDE, 2004b; ANDE, 2005 and Cazzarim, 2005).

Therefore, the multidirectional movements provided by the horse at walk set off the individual's central nervous system, acting as kinesiotherapeutic instrument, proprioceptive and facilitating instrument for the learning process (ANDE, 2005 e Severo, 2005).

Walter & Vendramini, 2000 and Cirillo, 2005, emphasize that therapeutic horse riding provides physical, psychological, educational and social benefits to the practitioner. They report that such activity requires the use of the entire body, contributing, therefore, to the tonus and muscular strength, relaxment, own body conciousness, balance, improvement of movement as well as of self-confidence and self-estime.

According to Strauss (2000), balance rehabilitation is possible because it is stimulated during therapeutic horse riding. During the horse's walk, multidirectional movements unbalance the individual's body in relation to the gravitational line and it is necessary to respond to the dislocations through the coordination of the entire locomotive system an through the balancing and straightening reactions in order to stay on the horse.

Uzun (2005), mentions the Manual de R.E./ANIRE, that the horse's warm body, the pressure on the pelvic and spinal articulations as well as the changes in space and time, are sensorial perceptions provided to the practitioner that make up the elements for na intense motor-sensorial estimulation.

Therefore, therapeutic horse riding is an extremely beneficial method to the Outlying Vestibular Syndrome due to its providing of the rebalance of the individual's sensorial, physical and psychological systems. It is known that the continuous movements performed by the horse provide inputs into the vestibular system, providing constant readjustments due to balancing and straightening responses for the development of posture control (Hammer, 2004).

According to ISONI, the rhythmical movemento on a horse educates the mind and predisposes the practitioner to new attitudes, better attention, better balance and coordination (ANDE, 2004a; ANDE, 2004b; ANDE, 2005).

"The interference of therapeutic horse riding on the balance of spidle and pélvis through tonus, rhythm and simetry is exercised in the intervertebral articulations, which leads to a physiologically correct posture. There is a permanent and consistent stimulation of the balance organs, which leads to a sensorial and motor learning achieved through the global movement of the entire body" (BAUMANN, 1978).

Ganança and Cols (2004a), have showed through research that outlying deficient/ irritative vestibular syndrome showed a damage regarding quality of living at physical aspects, as well as at functional and emotional ones, verified at the application of the Brazilian DHI (questionnaire elaborated by the researchers in order to mesure the effects posed by vertigo on these patients' lives). Therapeutic Horse Riding would be, therefore, one more treatment alternative for the improvement of these patients' quality of living.

2-OBJECTIVE

The objective of this study is to verify through concrete measuring the effect of Therapeutic Horse Riding on patients with Meniére's Desease which did not respond to the traditional treatment.

3-METHODOLOGY

Six adult patients of both genders, aging between 40 and 45 years, directed by the same otholaringologist physician, diagnosed with Meniéres's Syndrome associated to outlying deficient (DPVS) or irritating (IPVS) vestibular syndrome who had not been responding to medication treatment for 8-17 years in average (chart 01).

The group was submitted to electrocefalographic (ECG) and vecto-eletronistagmographic examinations (VENG), being such examinations capable to measure vestibulopatias at their different degrees of evolution, prior and after therapeutic horse riding treatment for comparison of clinical diagnosis.

The VENG examination is very important due to its differencial diagnosis between outlying vestibular syndromes (OVS) and the central vestibular syndromes. It permits quantitative analysis through the use of three inscription channels, which register the ocular movement in the horizontal, rotational e vertical ou oblíquous movement.

The ECG examination is responsible for diagnosing the presence of Meniére' syndrome.

From the VENG and ECG examinations, the patients which presented outlying deficient or irritative vestibular syndrome associated to Meniére's syndrome were selected.

All the patients, under suspended medication, were submitted to eight uninterrupted 30minute therapeutic horse riding sessions once a week.

The course used during the sessions was on irregular land in order to cause a higher number of tonic adjustments. The arena ring was used to stimulate the labyrinth; zig-zag movements to work on balance and the stop and go actions in order to cause balancing, straightening and protection responses. The use of a blanket was given priority in order to increase the vestibular stimulation, since such equipment provides a closer contact between the practicioner and the horse and this supports the proprioceptive work for a better sensorial and motor stimulation.

4 - RESULTS

The characterization of the group of studies demonstrated on chart 01 is made up of 6 riders, being four women (66,67%) and two men (33,33%). The average age is around 45, stated that the women do housekeeping shores and the men are drivers. The diagnosis time for the pathology results in na average of thirteen years.

CHART 01 - Praction	ers'Characteristics
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Practitioner	Sex	Age	Profession	D.B.S.
01	F	49 anos	Home maker	1992
02	F	54 anos	Home maker	1989
03	М	40 anos	Driver	1997
04	М	50 anos	Driver	1993
05	F	37 anos	Cleaner	1998
06	F	44 anos	Home maker	1989
			1	1

Inscription: F: female; M: male; D.I.S.: data of beginning of symptoms

Chart 02 presents the diagnosis after the vecto-eletronistagmografia exam, showing the improvement of riders' 01 and 03 from Outlying Deficient Vestibular Syndrome (ODVS) to Outlying Irritative Vestibular Syndrome (OIVS).

Rider	1 st Diagnosis	2 nd Diagnosis
01	r O.D.V.S.	O.I.V.S.
02	O.D.V.S.	normality
03	1 O.D.V.S.	O.I.V.S.
04	1 O.D.V.S.	l O.D.V.S.with improvement of tonal audiometry
05	1 O.I.V.S.	O.I.V.S.
06	bilateral O.D.V.S.	r. O.I.V.S.

Chart 02 - Examination: Vecto-eletronistagmography

Inscription: IODVS.: left side outlying deficient vestibular syndrome; IODVS: right side deficit peripheral vestibular syndrome; OIVS: irritative peripheral vestibular syndrome

Individual 02, with an initial diagnosis of ODVS, presented normality at the exams. Rider 06, with an initial bilateral ODVS status, improved to right side.

Riders 04 and 05 showed slight improvement, moving from IODVS and IOIVS status to status stabilization with improvement only regarding tonal audiometry and to OIVS, respectively.

5 - DISCUSSION

In the present study, it is possible to verify that the search for the treatment was mostly performed by women, perhaps being possible to be confirmed Barbosa and Cols (1995) and Assunção and Cols (2002), when they state that the vestibular system malfunction, mainly the peripheral vestibular affections, take place more frequently in females. However, the sample is not quantitatively sufficient in order to prove such fact.

The average age among the patients in this research was 45 years. Ganança and Cols, (2004a), performed a research with older population, average age of 67, stating that vertigo status may be associated to aging due to the continuous use of medication. According to Netto (1997a) and Netto (1997b), the human aging process starts at the age of 30, when all the organism system starts going through changes. Rosenhall (1975) states that the vestibular system starts such process more frequently after the age of 40, when the central and peripheral vestibular system excitability starts to occur, as well as the decrease in the capability of vestibule-ocular and vestibule-spinal reflex compensation, optokinetic nystagmus (of movement and following) and decrease of the rotational and caloric tests.

Lourenço and Cols (2005), found the prevailance in lower age group, equivalent to 20-39, followed by the age 40-59. Assunção and Cols (2002), note that most affected age is between 38 to 46, being this the average close to the one of htis research.

In the beginning of the research, only one patient did not present deficit peripheral vestibular syndrome (DPVS), which is the one with the most serious prognosis related to IPVS, with considerable loss of the vestibular function. (Ganança, 2004a).

The vestibular rehabilitation work is one of the proposed therapies as a support in the trreatment of individuals with peripheral vestibular syndrome and it is very used at

neurological physiotherapy, which works on the patient's sensitive-motor stimulation through Antero-posterior, laterolateral and movements from the crane to the sacrum with a ball and a roll (Bobath, 1982 e Uzun, 2005).

Uzun, 2005, states that although there are especific techniques and advanced methods for vestibular rehabilitation in neurological physiotherapy, the multidirectional movement and the awakening of a group of feelings provided by the horse to the patient makes Therapeutic Horse Riding a different rehabilitation method than any other therapeutic method, able to help the rebalancing of the peripheral vestibular syndrome patient in a fast and positive way.

The riders were only going through Therapeutic Horseback Riding treatment and were able to improve due to the tridimensional movement provided by the horse, since the oscilations provided by such movement stimulate the vestibular system due to the need of correcting and balancing reactions to happen in order to keep the body alignment (Hammer e cols, 2004).

As mentioned before, the horse at walk makes the person mounting it, even if unvoluntarily, perform similar movements to the ones of human walk, that is to say as already stated by Strauss (2000), it is a walk with no legs, since the horse walks for the patient Tridimensional movements in the horizontals (left, right, front and back) as well as rotation and translation movements of the pelvic waist are transmitted from the horseback to the rider's body. Therefore, as shown through researches and mentioned by Calill (2004), after 30 minutes of horse riding, the movements provide in average 30 thousand tonic adjustments in the patient's body. These movements dislocate the individual's body from its gravity center and then the participation of the entire body is required so that he/she can stay on the ohrse. All this procedure is directly related to prprioception and straightening response, which result in the development of balance, normalization of muscular tonus, posture control, coordination, reduction of spasmos, improvement of breathing and of proprioceptive information, which not only stimulate the articular angles, but also the muscle and blood circulation. Being so, the tridimensional movement stimulatres the rider's CNS, which simultaneously transmits stimulus to the proprioceptors in the neck muscles (via spinal reticule) and to the vestibular system (via spinal vestibule), resulting in the posture balance which occurs if there is movement coordination and sinchrony between contraction and relaxing of the necessary muscles to rhythmic and cadenced march. Therefore, the movements provided by the horse's step to the rider provide, even unvoluntarily, the benefits resulting from a sensorial and motor stimulation work.

"Citterio (1999), considered as a hipothesis the kinetic and dynamic action performed by the horse and the related response developped by the subject with brain pathologies in the three axis of space. Reports that it is evident the need of antecipation, orientation and addaptation movements which involve the neuromotor and neuropsychic nervous system and also in the superior cortical functions" (UZUN, 2005, p.85-86.)

All the sensorial systems, such as proprioceptive and visual, which are cooperators of balance are also associated to the work.

According to ISONI (2002), the rhythmic movement provided by the horse educates the mind and predisposes the practitioner to new attitudes, closer attention, better ballance and coordination (ANDE, 2004a e ANDE, 2005).

The horse works as a motivator, not only for the sensorial and motor rehabilitation, but also to the emotional one. Since Ganança (2004a), states that the ODVS patients show a lower quality of living and unstable emotional status, and all of them who presented such status evoluted to OIVS.

As the exact ethiology and physiopathology of Meniére's disease are not known, it is also not known the best form of treatment for the pathology.

Although the research has been performed on a limited number of patients, the improvement demonstrated through examinations was quite significant if considered the small number of sessions that have been performed without the interference of any other kind of treatment and furthermore the long years of medication to which these patients have been submitted without reaching the status improvement. This study is given na innovating approach and the need of further studies on this kind of therapy is suggested.

6 - CONCLUSION

Therapeutic Horse Riding is shown as effective at the treatment of vestibulopathies, such as the Meniére Desease.

Although the research has been performed on a limited nimber of pacients, the improvement shown through the exams has been quite significant if considered the small number of sessions performed without the interference of any other kind of treatment. This study is given na innovating approach and the need of further studies on this kind of therapy is suggested.

PONIES AS FACILITATORS IN THERAPEUTIC HORSE RIDING

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HIPPOTHERAPY

An analysis of the "horse-human" being relationship reveals the absence of prejudices since, when demonstrating affects, the animal disregards any "damage" in the child or adult's appearance. In addition, as a living being, the horse has its own reactions and demands understanding, attention and affection from whoever rides it. The stimulation supplied by the animal can also be increased through a complementary work with exercises and proposals that lead the person to seek creative solutions for their growth and biopsychosocial development .

The therapies using animals provide benefits in terms of physical and emotional welfare and many studies show the gains brought by men-animal interactions. This relationship is usually classified in two ways: as promoting human health and as a specific therapy (FINE, 2000).

"The therapies using horses can be considered as a set of reeducation techniques that help overcome sensorial, motor, cognitive and behavorial damages through sport-play activities using a horse" (CITTERIO,1991).

Furthermore, the social, organic and affective aspects are addressed together with the actual physiotherapy, thus meeting the goals of global rehabilitation.

Still according to this author, Hippotherapy favors social reintegration through the contact of the individual with other patients, the caring team and the animal, which brings him closer to the society in which he lives.

In addition to its kinesiotherapeutic function, the use of horses in treatments has an important participation in the psychic aspect since the individual uses the animal to develop and modify his attitudes and behaviors (GAVARINI, 1997).

As for Psychomotricity, we observed that the dynamic physical contact with the animal induced the learning of rhythmic movements, the acquisition of balance, desinhibition, confidence and motor self-consciousness (SALVAGNI, 1999).

According to Garrigue (1999) such effects include:

Relationship

The full valorization of the individual on the horse, communication, self-confidence, self-control, supervision, monitoring of the relationship, attention and time of attention.

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Psychomotricity

Improved tonicity, mobilization of the articulation of the spine and pelvis, better balance and posture of the erect trunk, obtention of laterality favored, better perception of the body diagram, better knowledge of positions of the own body and of that of the horse.

Technical nature (the horse)

Learning related to the cares to the animal: stables, alimentation, bandages, saddling and harnessing and, above all, horse riding techniques.

Integration in society

Contact with the animal, the staff of the horse center, the other members of the group, the other riders at the horse center, and when possible, with the neighborhood inhabitants, during the rides.

AUTISM

According to the DSM-IV (2003), Autism Disorder or Early Childhood Autism is a pervasive developmental disorder defined by the presence of abnormal and/or compromised development that manifests itself before the age of three and by a characteristic kind of abnormal functioning in three areas: social interaction, communication and restricted and repetitive behavior. Its occurrence is 4 to 5:10,000, an it is preponderant in male individuals (3:1 or 4:1). It derives from a wide range of pre-, peri- and post-natal conditions.

According to Scwartzman (1995 p. 17), childhood autism "is a syndrome characterized by changes present since fairly early ages and it always manifests itself through deviances in the areas of the interpersonal relationship, language / communication and behavior".

HIPPOTHERAPY AND AUTISM

The development of the motor function through Hippotherapy is very significant in Autistics and may impact immediately the habits of independence, suggesting a need for intensive work as a way to impact the affective, social and cognitive aspects, too (FREIRE, 1999).

This therapeutic resource can improve the social relationships of autistic children by favoring a better perception of the external world and suitability in the tonic-postural adjustments (FREIRE, 2003).

According to Roberts (2002), there are similarities between autistic behaviors and some attitudes of the horse. Strong noises, changes in the routine and unknown environments cause insecurity in both and a great part of the communication they establish depends on body language.

They tolerate a restricted quantity of physical contacts, which never occur through imposition. According to this author, the instinctive capacity of the horse to perceive the rider's intentions leads the animal to calm down when ridden by an Autistic. The contact with animals may generate exchange expectancies and representation of social rules, when used in therapies (WILSON & TURNER, 1998).

From the first contact and preliminary cares to riding itself, the interaction with horses also develops new forms of communication, socialization, self-confidence and self-esteem.

One must bear in mind that children may have difficulties to learn through verbal instructions and that a constant repetition and body orientation through gestures and mimics are necessary.

Children often show little or no interest for the horses, the other riders or instructors Nevertheless, as they progress, they gradually grow attached to a horse or a person.

In works with psychotic children, ponies are used to get in "contact". It helps them entering into "our" world by opening a "social" communication channel (RAPENE, 1998). The Autistic may look, touch and this "object" is not static. In addition to its utilities and possibilities, such knowledge generates comparisons between the parts of the horse body and that of the very child. Horses are not predators and their alert reactions serve as a defense against attackers and guarantee their protection. The child begins to perceive the pony reactions and feels stimulated to get closer to it.

The main aspects to be observed in the behavior of the autistic during his getting closer to the horse are: perception of the other, (visual or aural) attention focused on a member of the team, imitation, social play, communicative babbling, mimics, spoken language, smiles as an answer, body posture or gestures to begin or modulate interaction, perception related to the external world, avoidance reaction to the horse, state of excitation, aversion to physical contact, obedience to simple orders, perception, exploration and relationship with the animal, own initiative and dispersion (FREIRE, 1999).

THE WORK WITH PONIES

The objective of this study is to illustrate the autistic child's process of perception towards the horse and his coming closer to it, his relationships with the team, his overcoming of fears and acquisition of confidence and how, through this coming closer, we were able to obtain gains on the therapeutic level.

This work is characterized as a case study of clinical validation with a qualitative approach whose subject was a 3 years old boy with autism disorders, classified according to the DSM-IV (2003).

The hippotherapeutic treatment recurred to a mini-pony girthed with a child's Australian saddle, headstall and halter.

Ponies present features that help the getting closer work, such as: its height, which makes it less threatening; docility; easiness to ride in various places, often inaccessible to higher horses. To register the sessions we used the PROEQUO pattern of daily records, continuous register, tables of the autistic's behavior observation in Hippotherapy (ECCA,1999), photographs and interviews with familiars.

Treatment took place at the Instituto São Vicente, the university farm school, which runs the Hippotherapy Program of the Universidade Católica Dom Bosco (PROEQUO-UCDB).

Treatment was administered by two university students, trainees at the Psychology course, a Psychologist and a Physiotherapist.

The 30 minute sessions took place weekly during two school terms, and the data were collected through observation, continuous register and photos.

Treatment aimed at having the patient accept the horse, using the existing space at PROEQUO, thus allowing his adaptation to the members of the caring team and the exploration of the place where nature is abundant and offers footpaths in the woods, various kinds of surfaces (sand, weeds, water) and an open-air riding school.

We report below some session fragments:

During the first sessions, C. did not accept any contact with the team, and only stayed with his mother.

The team members initially sought to establish contact with the child by using the natural resources existing in the place (lagoon, trees, birdsongs, textures of materials found in the nature), and always tried to awaken his interest and attention. After this period, the subject could stay alone with the therapists.

After this initial contact (approximately three weeks), the horse entered this relationship, and the games always took place in the presence of the pony. C. ignored it and all attempts to have him get closer were refused with tears and shouts. He usually fled running although he stopped quickly a few times to look behind, as if he were asking us to follow him far from the animal.

The choice of a mini pony was dictated by its small height and its docility, which facilitate its handling and company during the treatment and help reduce the child's fear, since he deals with a smaller animal in this initial phase.

We began to realize that C. sometimes stopped to observe some of the horse reactions. From then on, we have such reports of his talks as: "Hi Renatinho" (the pony's name).

All our attempts to put C. on the horse were frustrated, since he would only get closer to it when he wanted to.

As sessions went by, we perceived that C. was becoming increasingly curious about the animal and explored the environment that called the Pony's attention. When the horse was cropping, he would pull weed out on its side, give it to the therapist, hold his hand and signal that he gave it to the horse.

When he walked in the woods on the side of "Renatinho", he felt the alert reactions of the animal, stopped walking and looked around showing he perceived the environment.

During the work, he began to explore the saddle, observing its parts and patting its seat. The first time he rode, he stopped in front of the horse and touched its face with one of his hands. He then stopped on its side and did the same on the saddle; next, he held it and gesticulated as if he were going to climb. We seated it on the horse and he rode a few laps before trying to get down, so that we helped him. For the first time, he said goodbye to the team and went away. While riding, he sang.

From then on, when C. arrived to the sessions, he either ran to see the horses that were tethered, played with them, but refused to ride or asked through gestures to ride and stayed on the horse for a short period of time.

By the end of the second term of work, C. already accepted bigger horses and began to show signs of relaxation, explored the animal parts during his ride and called the attention of the team through "small blows" and laughter.

C.'s mother told us that he was verbalizing more and observing more situations and objects. Our conclusions demonstrate that the contact with the caring team and the horse generated gains even when riding did not actually occur. The horse became appealing for the autistic, stimulated his eye contact and body expression, once again playing the role of a facilitator in the social relationship of these children.

Such evidence corroborate the literature, where Roberts (2002), mentions that horse riding not only stimulates the human being's development as a whole, but has also increased benefits through the environment stimulation; the noise of the tree leaves, the sensation of the wind on his face, and the experimentation of a variety of smells.

When working with Autistics, the team has to understand which moment of their relationship to the horse the patients are experiencing, so that they may get closer, since perceiving and accepting the animal presupposes curiosity and contact with the reality experienced at that moment.

Using a Pony allowed us to realize that getting closer to the animal is less threatening because of its small height. The child may easily touch it, explore its parts and interact with it, closely feeling its reactions. The discovery work also became safer, since the therapist was given more freedom to care for the child.

With both the higher horse and the pony, the perception of the moment the child was experiencing was crucial in the attempts to bring him closer to the animal.

During the two terms when we tried to have him get closer, all his familiars confirmed our conclusions during the work, since out of the hippotherapy environment, he began to observe the world around him, made more gestures intended to communicate and his behavior allowed his getting closer to and having contact with people.

We conclude that the pony also facilitated our patient's getting closer through his play aspect, which allowed that this "game" be later transferred to the higher horse.

The results confirm the theory that says children presented perception of the other, social game, mimics, body posture or gestures to establish or modulate interaction, perception of the external world, perception, exploration and relationship with the animal, own initiative, which, according to Freire (1999), are important points.

This study does not seek generalizations but it demonstrates that the work involving animals is extremely important and that its results are valid when applied to Autistic children. In our case, it facilitated riding and improved the cognitive, social-and affective aspects.

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ELECTROMYOGRAPHY COMPARATIVE ANALYSIS OF LUMBAR ERECTOR MUSCLE WITH A CEREBRAL PALSY PATIENT PERFORMING DIFFERENT POSTURES ON HORSEBACK

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Introduction: Cerebral Palsy appears frequently in neurological rehabilitation. This pathology is mostly characterized by a motor disturb during the first childhood, as a result of some cerebral disorders. Central Nervous System lesions are a constant challenger for rehabilitation professionals, due to diverses tonus pathological disorders. The therapeutic horse riding is a complement to rehabilitation program, the integration with this animal helps patients, stimulating neuropsychomotor reorganization. Objective: The aim of present study was analyze the lumbar erector muscle recruitment, comparing with postures on land and over the back of the horse. Using these data, hippotherapy programe may become more specific, getting biomechanical evidences on rehabilitation program. Method: Participated on this study a 8 years old female bearer cerebral palsy subject, caracterized by distonic tetraparesis, having as maining motor disorder trunk and members incoordination, with lumbar erector muscle deficit. Before data colection, skin asepsis with an alcohol field cotton was done. Using Electromyography surface MIOTEC® and a software Myography with 4 channels, bipolar circle surface silver electrodes Medtrace® spacing=2.5cm, was used positioned at erector lumbar muscle motor point, according to the technique suggested by Cram et al. (1998). The posture variations were seated on horse back: frontal posture, right lateral side (related to horse's head), left lateral side and dorsal seated posture. Each variation was analized with the horse stopped and walking on a straight direction, during 30 seconds. **Results:** Using Surface Electromyographic analizes, the muscle recruitment was of 32,10µV on the right side and 46,00µV on the left side with the patient on the frontal posture and the horse stopped. When the horse was walking, muscle activity were 57,70µV on the right side and de $67,33\mu$ V on the left side. On the right lateral posture with the horse stopped, muscle recruitment was $30,36\mu V$ on the right side and $35,57\mu V$ on the left; with horse walking, muscle activity was 51,57µV on the right and 50,17µV on the left. On the left lateral posture with the horse stopped, erector lumbar muscle recruitment was 9,77 μ V on the right side and $8,98\mu$ V on the left; when the horse was walking, muscle activity was $98,55\mu$ V on the right and 95,46µV on the left side. At dorsal posture with the horse stopped, muscle recruitment was 26,02µV at right and 31,32µV at left side; and with the horse walking the activity was 112,06µV on the right and 109,89µV on the left side. Discussion and Conclusion: Biomechanical knowlege is a fundamental resource for health professional, specially when therapists aims to work motor control, know when use each posture. Thus, recruiting better these muscle groups, specially trunk extensors muscle, is essential to get to a better therapeutic result. The posterior posture showed that recruits more muscle fibers when compared to the other postures, so the work on this posture could offer a better muscle contraction intensity, giving many therapeutic benefits to this patient. From this results, it turns necessary to get to deeper on this line of research.

The horse domestication and the institution of horse riding made both men and horse destinies inseparable through the centuries, representing a mark on mankind progress. Horses have been used as a way of veneration, participating on the creation of vaccine or sorus, on human transportation, on labor activities, in sports this one is considerate the more complex, because it is challenging to the mind, mobilizing and interconnecting the neural connections and the execution of complex movements for the sport player. Recently it's been given lots of attention in education and rehabilitation during the treatment of disabled people.¹⁹

The horse utilization as a facilitator agent on the treatment of diseases is not recent. In 458-377 b.C., Hippocrates referred to horse riding as a health regenerator factor, in special on the treatment of insomnia. Besides of that, he agreed that practicing horse riding made muscles to regain their tonus. Asclepíades of Prusia in 124 b.C. indicated the horse riding to the treatment of epilepsy and several kinds os paralysis. In the year of 1569, Merkuralis wrote in "Gymnastic Art" that practicing horse riding plays an important role during the exercise, practicing not only the body, but the senses too. In 1704 Fuller had published in "Medical Gymnastic", the benefits of horse riding on the human body and mind, specially on hypochondriac people. Samuel Theodor Quelmaz, in 1747 had made the first reference to the three dimensional movement of the horseback.^{2,19}

In 1782, Joseph C. Tissot, on his book "Srugical or Medical Gymnastic", told about the counter indication of excessive training for the first time, and said their benefits as well. Goethe admitted the valor of body oscillations according to the animal's movement. The positive stretching of the vertebral spine is determinated by the rider's position above the back of the horse, and its delicate but constant circulatory stimulation were presented on his study too.^{2,19}

According to the American Hipoterapy Association, therapeutical horse riding could be defined as the physiotherapeutic and other health care professional's usage of the natural horse movements on the treatment of physical disabilities, functional limitations or muscle-neural disorders. This tool could be utilized as part of an integrated treatment program whose objective is to achieve better functional results.⁴

And this is the way that therapeutical horse riding is becoming a good method of physical rehabilitation. On behalf of the clinical treatment it could be observed a positive evolution of the patient, but it is yet necessary to measure this evolution. The objective of this study is to analyze the muscle recruitment of torso extensors through the usage of the surface electromyography. The study has been put into practice on children suffering from Cerebral Palsy (CP). Several postures have been used above the horse (forwards, backwards, right side and left side), so it could clarify the understanding of the importance of the therapeutical horse riding on CP children torso control.

"CP presents posture and movement disorders, that are permanent but not unchangeable, resulted of a cerebral disorder that is not progressive. It is caused by hereditary factors, events during pregnancy, birth, neonatal or in the first two year of life".⁹

The first CP reported cases have been described in 1843 by William John Little, an English surgeon, that defined it as a illness connected to different causes and characteristics, commonly the muscle stiffness. The author characterizes CP as lesions that paralyse children on their first year of life, causing spasticity in the legs and arms. This sickness have been called for many year as Little Sickness, but nowadays it is known as CP spastic diplegia.

Little suggested that some complications during the act of birth, resulting with the lack of oxygen, could cause damage to the sensible brain tissue.^{11,20,23}

Tetraplegic patient constitute the majority on the CP group. Their psychomotor development is almost zero. They tend to be laid with their upper limb in flexion and their lower limb in extension. They could stay sit under support, in the best instance. They can't manipulate objects or feed themselves alone.²²

The motor disorder in distonic subgroup is characterized by a sudden and generalized change in the muscle tone, specially a higher tone on torso extensor muscles stimulated by emotional stimulus, or neck muscle posture changes under intentional movements. In these cases the primitive reflex activity always interfere on the voluntary motor effort. The patients also tend to assume and maintain twisted postures, in the same stereotype pattern.¹

The CP child presents the motor disturb as its main disorder. This one leads to gait difficulties by many factors, such as the lack of trunk control and tone disabled balance.

The tri-dimensional movement caused by the horse oscillation could produce movements on the pelvis of the rider that are similar to the gait.¹²

It is important to mention that the gravity alignment between horse and man could ignite the Central Nervous System, achieving various neuro motor objectives, such as: balance enhancement, tone adjustment, body alignment, motor coordination, and muscle strength.¹⁹ Muscle electrical potential can be detected by the use of surface electrodes, that correlates to the electromyographic signal displayed on the monitor.^{5,6,8,18,26} The surface electromyography is the membrane electrical activity registry in response to the physiological activation.^{3,17,24,28} The electrodes are places above the skin, capturing the electrical activity of all active muscle fibers. It is characterized as a non-invasive method, been easy to execute. This method is widely used in kinesiology and neuro physiology studies of the surface muscles.

METHODS

Subjects

Took part of this study an eight year old female CP (distonic tetraparesis) child that already was attending to horse riding before, and one female unknown race horse. The patient did not present restrictions to the horse riding, such as atlant-axis instability or hip dislocation. The physical space to the test was track full of soft sand ring. The horse movement was not restricted during the data collect.

Procedures

It had been realized skin asepsis with soaked alcohol cotton (58%), then it has been put some round AgCl Medtrace[®] brand electrodes on the motor point of erector lumbar. The myoelectrical signal has been captured by Miotec[®] 4 channel surface electromyography device.

The time spent on the data collection was 30 seconds on each different posture, and the horse frequency was 84 steps per minute. The patient sustained the body stability by her own during the period of analysis, without support of any subject involved on the test. It is important to say that two therapists where right aside the patient, just in case of security, and one person where leading the horse.

Being realized on open air ambient, and in constant movement, it had to be adapted a way to maintain both electromyography and notebook stable. It has been used large cables to the surface electrodes, large enough to enable all horse movements.

The study has been based on the obtained results of electromyography without statistic analysis because it was just the study of one case, besides; the purpose of the study was to compare the activity of the lumbar erector on the different postures on the horse. The selected postures on the horse were, respectively: with the horse still and in movement; forwards, right side, left side and backwards.

RESULTS

It has been observed the following results during the analysis of the electromyographic data realized on the eight year old female patient:

Postures	Right Lumbar Erector	Left Lumbar Erector
Forwards; Static horse	32,10µV	46,00µV
Forwards; Moving horse	57,70µV	67,33µV
Right side; Static Horse	30,36µV	35,57µV
Right side; Moving horse	51,57µV	50,17µV
Left side; Static horse	9,77µV	8,98µV
Left side; Moving horse	98,55µV	95,46µV
Backwards; Static horse	26,02µV	31,32µV
Backwards; Moving horse	112,06µV	109,89µV

TABLE 1: Data of electromyographic signals on the left and right lumbar erectors.

DISCUTION

In accordance to the table 1 data, it could be observed a higher recruitment of the lumbar erectors in all postures when the horse is moving, compared to the static horse. The highest muscle activation was observed when the patient were backwards and the horse was moving.

The variation on the intensity of the horse step, the velocity, direction stimulation and balance give as an answer the dislocation of the patient's gravity center, facilitating the postural dynamic stabilization and the reestablishment of the motor disorder.^{15,13,21,27}

It is necessary for the patient to use its balance reactions, raising the muscle recruitment just to maintain itself above the moving horse. So it preserves the balance on the realized posture.

Gusman and Torre (1998) define balance reactions as an adjustment to the posture, to maintain an regain the balance before, during and after the gravity center displacement.
Severo (1999) defines balance as an essencial function to the static positions and during the gait, that is centered on the vestibular system, and has an intimate relation with the cerebellum functions. There is a true organic function between proprioception, balance, cerebellum coordination, the vision and the motor system itself in a generalized way.

As wrote by Kandel; Schwartz and Jessel (1997), men's axial and the proximal appendicular muscles are used to maintain the postural balance, while distal muscles are used to manipulative activities.

So, besides the balance, posture stabilization and reestablishment of the motor disorders benefits, the patient could even try to walk. Consequently, the patient's senses are improved, and their trunk stabilization muscles are strengthened. This is the case of the lumbar erectors.

The preliminar purpose of the CP theraphy is to maitain static posture, that is the base for the execution of other more complex activities. The therapeutical horse ridding uses the body weight, together with a variety of swings, like the applied stimulation on the pelvis or in the whole body, develops better balance reactions, enhances the trunk postural control, activates the pelvis and hip articulations, resulting in a better tonic adjustment .⁷

In this study it could be observed through the surface electromyography that it cold be achieved higher grades of muscular recruitment and more unstable positions when the horse is moving. It resulted in a higher contraction on the lumbar erectors as well.

The horse step is characterized as a rhythmic pace, with the cadency of four periods, so it can be heard four distinct knocks, which correspond to the animal's foot.¹⁹

Assuming all the characteristics above, one can conclude that during the work on therapeutical horse riding the usage of the horse pace is ideal. There are some other points to tell about the horse pace:

During the gait, the human being moves using their legs alternatively. While one leg is on the sustention phase, the other is on the double sustention phase or on the propulsion phase. The body weight moves ahead during the gait as soon as the gravity center moves. The pace is an act of protection in this case, so we don't fall during this process. The trunk turns on its own vertical axis, the shoulder and the pelvis dissociate. During the gait the weight dislocates from one side to the other, which corresponds to approximately 0,5cm on the adult.¹⁹

The horse pace transmits to the rider a number tri-dimensional movements, that corresponds on the vertical plan to up and down movements, on the horizontal plan to left and right movements and on the longitudinal plan a forward and backward movement. These movements are added to a small torsion movement on the pelvis, that are caused by the lateral flexions of the animal torso.^{10,29}

The therapeutical horse riding is a method of treating the patient that should be realized in a global way. That's the reason why it should be stimulated several postures, some objectifying the motor performance like the muscular strengthening, others objectifying the sensorial learning through the contact with the animal.

CONCLUSION

Based on the results of the lumbar erector electromyography, it could be observed a major degree of muscular recruitment within the different analyzed postures when the patient were sit backwards to the horse, and even greater when the horse was moving at slow pace. Consequently it has been showed that the therapeutical horse riding is a great therapeutic method considering the different postures and the tri-dimensional movement caused by the horse's oscillations. These factors cause series of reflex muscular contractions, specially on the lumbar erectors, that united with other proximal muscles maintain the subject sit on the horse.

If the purpose of the therapeutic work with this particular patient were to strengthen the extensor muscles of the trunk, it should be used the backwards posture, though this postures recruits more muscle fibers to stabilize the trunk during the swing made by the horse tridimensional movement. This movement reproduces the human hip oscillations during the gait. If the purpose were to strengthen other muscular groups, it becomes interesting to realize a electromyographyc study to obtain the correct evaluation of the adequate posture. It is important to point the therapeutic work to an individual approach, choosing wisely the best conduct for each patient.

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MEMORY AND SELF-ESTEEM IN DOWN'S SYNDROME: DOES THERAPEUTIC RIDING HAVE ANY SIGNIFICANT EFFECT?

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INTRODUCTION:

Animal Assisted Therapy, also known as Pet Therapy, uses companion animals to help people with special needs by positively affecting their health and psychological well-being (Del Negro, 2004). According to Soares (1985, cited in Siegel, 1990) pets are considered to provide to their owners different benefits such as companionship, aid to health and relaxation, protection, non-judgemental acceptance, and love. It is also thought that just by stroking a pet animal blood pressure is reduced and longevity in the elderly is improved (Katcher and Friedman, n.d., cited in Pascale, 1998). Research conducted on the effects of pet ownership in the elderly showed that participants with pets reported fewer doctor contacts compared to non-pet owners during the one year study (Siegel, 1990). The report of a boy with cerebral palsy, described by Suzik (1998), testified that in the presence of his dog the boy's rigid muscles relaxed.

Companion animals are not the only animals found to improve general heath and well being in humans. Horses and dolphins have also been seen to play a major part in therapeutic settings (Britton, 1991; Universita' di Padova, 1997). Therapy with horses is also known as Riding Therapy, and it is used to describe all the rehabilitative uses of the horse (Engel, 1994). Riding Therapy can be divided into three main sections: Pure Therapy (medical), Combined Leisure and Therapy (educational) and Pure Leisure (sport) (Wolf, 1979). According to Danelle Kern (2000), riding a horse can be a tool for the treatment of different kinds of neurological, skeletal, muscular and emotional disorders. However, factors such as type and disability gains from horseback riding (Lessick, Shinaver, Post, Rivera & Lemon, 2004, p.48). The positive effects of this therapy have been demonstrated by improvements in communication on individuals with autism (Citterio, 2001), and reduced epileptic crises on epileptic individuals (Clay, 2004).

The medical aspect of the therapy, also called hippotherapy, refers to a "passive form of riding in which the patient sits on the horse and allows the horse to move him" (Biery, 1985, p.346).

The response to the horse movement is unconscious. The patient benefits from this physical therapy by experiencing the three dimensional motion of the horse and by receiving sensory information through all his senses (Lucioni, Murdaga, Cova, Crippa & Grassi, n.d.). In fact, the horse's muscle groups move from side to side, forwards and backwards and up and down, which mimic closely the human gait that cannot be experienced by using a machine (Kern, 2000). The horse's rhythmic, repetitive movements work to improve muscle tone, balance, posture, coordination, strength, flexibility and cognitive skills (Borzo, 2002). A research comparing fMRI scans over time found that the repetitive movement of riding prompts physical changes in the brain, specifically by reworking networks within the cerebellum and the motor system in the cerebrum (Bluestone, 1999). The pathways within the brain become reinforced over time, allowing the brain to compensate and improve a

The educational aspect of this therapy, also known as therapeutic horseback riding (or therapeutic riding), refers to "the use of the horse and equine-oriented activities to achieve a variety of therapeutic goals, including physical, emotional, social, cognitive, behavioural and educational goals. It not only encompasses various leisure and therapeutic activities but also places emphasis on the development of the relationship between the rider and the horse."

(Lessick, Shinaver, Post, Rivera & Lemon, 2004, p.48).

Improvement of balance, co-ordination, body awareness, agility, orientation, memory and dexterity are amongst the different physical and cognitive benefits that can be gained through therapeutic riding (Gambini, 2002; Walker, 1978; Britton, 1991). Also, in individuals with disabilities, who have in the majority of cases no ability for walking or jogging, riding can improve their heart functions and breathing (Henriksen, 1971). Furthermore, therapeutic riding can remediate some psychological and social problems by increasing the sense of normality, confidence, communication, patience, self-esteem and self-awareness (Britton, 1991; Gambini, 2002; Wollrab, 1998). It has been also stated that one's range of social interactions can increase by working with an animal (Hart, 2000, cited in Bizub, Joy & Davidson, 2003).

For certain individuals with disabilities the horse can act as a motivator (Britton, 1991; Borzo, 2002). Excitement of riding and succeeding in the challenges posed by riding can stimulate an improvement on the rider's abilities and skills (Lessick, Shinaver, Post, Rivera & Lemon, 2004; Arachi & Rugiero, 2001). Also, it has been suggested that being in a "good mood" makes the treatment more effective (Kern, 2000). While riding, the rider takes in large quantities of sensory inputs (Baker, 1996). Trying to process those inputs, creating functional outcomes, and the motivation to ride the horse, force the rider to use his memory as an aid in learning and as a tool in how to reach different goals (e.g.: maintaining a correct posture and how to make a horse turn) (Biery, 1985). As a consequence, riding a horse seems to help the rider's brain organize itself by providing a strong, motivating, multisensory input (Baker, 1996). Moreover, according to Biery (1985), equine-oriented activities, such as grooming and stable managements can help stimulate and improve memory.

Possibly two of the greatest benefits of therapeutic riding for people with disabilities are the improvements in confidence and self-esteem (All et al, 1999, cited in Lessick, Shinaver, Post, Rivera & Lemon, 2004). Primarily, the improvement in confidence seems to occur because the horse is seen as a "majestic animal" (Pascale, 1998). Being able to control and manoeuvre such an animal has a great self-esteem impact (Lessick, Shinaver, Post, Rivera & Lemon, 2004).

The research conducted by Gatty (n.d.) on the impact of therapeutic riding on self-esteem compared the average self-esteem scores of five participants presenting physical and cognitive disabilities. To be able to define the participants' self-esteem a revised form of the Rosenberg Self-Esteem Scale questionnaire was used. The results showed that the participants' self-esteem average scores after the riding were significantly higher than the average scores obtained before the riding. Gatty's experiment however, suffered from a major methodological flaw: the absence of a control group. Moreover, there were some extraneous factors that might have affected the performance of those participating in the study. Also, the research

could not be generalized to all the riders attending therapeutic riding sessions because of the lack of variability in the sample. As a consequence, safe assumptions cannot be made on whether the riding treatment had any significant effects on the participants.

Research performed by Bizub, Joy and Davidson (2003) conducted a qualitative study to look at the efficacy of a ten-week therapeutic horseback riding program. By asking the five participants to describe their experiences, the researchers found that positive psychological gains such as increased sense of self-efficacy and self-esteem were achieved. Also, by analysing the participants' experiences, horse riding provided to be a "normalising" experience. The participants' perceived bond established with the horses aided the participants in diminishing their own sense of being isolated or different. Moreover, the horse was perceived as a nonjudgemental source of support. However, the relationship that evolved between the researchers and the riders might have influenced the personal statements given by the participants. As a consequence, to avoid this effect, it was suggested that further qualitative studies might consider having an unfamiliar person interviewing the participants.

Another research conducted by Burgon (2003) monitored six adults with mental health problems, horse riding once per week, during a period of time of six months. The study found that confidence was one of the aspects that strongly increased in the participants. Three main reasons were given for the results obtained in the study. Firstly, the horse riding worked as a motivation for the participants to attempt and get used to a new experience. Secondly the riders were not seeing the environment where the therapy was taking place as being judgemental, and by consequence they perceived it as being safe. Finally, participants felt they could transfer their gained confidence into other social situations, outside the riding institution.

Considering the motivation and the sensory inputs obtained when riding, it is likely that horseback riders with a disability (in this case individuals with Down's syndrome) will be better at a memory task (cards). The results will be compared to a control group of individuals with the same disability (Down's syndrome). The control group will not be taking part in any therapeutic riding activities and will be doing the same memory task as the riding group. Therefore, according to what has been stated previously, the aim of the present study is to test whether therapeutic riding could be linked to memory performance in individuals with Down's syndrome (first hypothesis). In addition, because the therapy and therefore therapeutic riding seems to have a greater impact on individuals with disabilities when being in a "good mood", the study will also attempt to assess whether mood could influence memory recall in individuals with Down's syndrome (second hypothesis). Finally, taking into account that therapeutic riding should improve self-esteem, self-esteem should be higher in horseback riders with a disability compared to a control group of "non-riders" with the same disability. As a consequence from what stated previously, the present study will look at whether therapeutic horseback riding influences self-esteem in individuals with Down's syndrome (third hypothesis).

METHOD:

PARTICIPANTS:

Seventeen individuals with Down's syndrome participated in the research. They were divided into two groups: Group A and Group B. Group A was composed of 9 Down's syndrome participants (3 females and 6 males). They had an age range from 8 years to 51 years (mean=33.78; standard deviation=16.60). Eight participants were riders at the Beechley Riding Centre for Disabled People (Liverpool), while the 1 other participant was a rider at the Bowlers Riding School (Formby, Liverpool). All the participants were riding once per week at different times and days. The age at which participants started riding varied from person to person.

Group B was composed of 8 Down's syndrome participants (4 females, 4 males), having an age range from 30 years to 54 years (mean=39.38; standard deviation=7.44). Except for one participant, all the participants were recruited from day-care centres in Liverpool (6 from Lancaster Day-Care Centre and 1 from Beechley Day-Care Centre).

MATERIALS:

Seventeen Participant Information sheets, in which the information concerning the research was explained, and 17 Participant's Consent sheets, in which carers consent and participants' details (name, surname, age, date of birth, gender, time spent horse riding) were recorded. To measure the memory recall, the research employed 20 cards. The cards (9 cm x 14.5 cm) displayed colour images of either plants (flower, lemons, apple, cherries, carrots, bananas, onions), objects (toilet paper, television, chair, clock, table, tooth brush), animals (dog, fox, owl, duck, eagle) or miscellaneous (clouds, sky). The images on the cards were selected from Internet websites. To be able to remember in which order the cards were shown, each card was numbered at the back, and the name of the image represented on the card was written in black under each picture. To be able to register, which and how many cards the participant recalled, a Recalling Sheet was used.

To test participants' self-esteem, a questionnaire designed for the purpose of the research was used. Seventeen questionnaires were used in the research. Each questionnaire presented 16 questions.

PROCEDURE:

In order to have the approval from participants' carers or parents, 17 Participant Information and 17 Participant Consent sheets were distributed to different institutions in Liverpool. Depending on whether the participants were participating in horseback riding or not, they were divided in two groups: Group A (test group) and Group B (control group). Participants of both Group A and Group B attended the research at different hours and days. The research was conducted in the different institutions.

Participants in Group A were asked to undertake the memory test after their weekly riding lesson (length of the lesson approximately 30 minutes). First the participant was shown into a room were s/he was asked to sit down. The researcher sat in front of him/her. The first time a participant was met; the researcher introduced herself and also explained the purpose of the study. At each session, the participant was asked if s/he was willing to undertake the test, and if the response was positive the participant was then asked if s/he could read and how s/he was feeling in that moment. A participant's description of her/his mood was considered as being positive when the answer to the question was either

"good" or "alright". In case the participant's answer was either "bad" or "not so well", the participant's mood was considered as being negative.

Afterwards, the memory test with the cards was explained to the participant. The cards were then shown one by one to the participant at a distance that suited his/her eye sight. While showing the cards, the researcher read the name of the image displayed on each card to the participant that had to repeat it. After all the cards were shown to the participant, the researcher asked her/him to recall them ("So what did you see on the cards?" and/or "What do you remember?"). Time given to the participant was what s/he required to recall as many cards as possible. However, if the participant showed indecision or said that s/he could not remember any other card then the question "Can you remember/recall any other card? Are you sure?" was asked. At the end of each weekly test the participant was given a feedback on how many cards s/he could remember. Which and how many cards each participant recalled weekly were written on the Recalling Sheet.

Group B followed the same procedure as Group A. Although, the memory test wasn't undertaken after the riding lesson with participants in Group B, but after the researcher arrived at the institution, participants were met in a room, one at a time, accompanied by a carer.

On the last day of the research, to test self-esteem, the Self-Esteem Questionnaire was given to the participants to complete. In cases when the participant could not read, the researcher read the questions. In both Group A and Group B, carers or parents were present when both the memory task and the Self-Esteem Questionnaire were assessed. In case the participant couldn't understand what was required, or the researcher could not understand the participant, parents or carers assisted, acting as mediators between participants and researcher.

RESULTS

The data collected during the six weeks was analysed as following. First, how many cards were recalled during the 6 weeks for both groups ("Riders" group and "Non-Riders" group) were collected in three different sets by summing week1 and week2 together, week3 with week4 and week5 with week6. This was done to facilitate the research, because of some missing data present in the final score sheet.

Then, the means for each set of weeks was calculated. Means regarding the "Riding" group during week1 and week2 (mean=7.33; standard deviation=3.42), week3 and week4 (mean=9.50; standard deviation=3.35) and week5 and week6 (mean=10.00; standard deviation=4.58) are slightly larger than the means of the "Non-Riding" group during week1 and week2 (mean=6.90; standard deviation=3.40), week3 and week4 (mean=7.81; standard deviation=3.18) and week5 and week6 (mean=9.50; standard deviation=4.35). This suggested that the participants of the "Riding" group had a slightly better performance in recalling cards during each set of weeks (Week1 and Week2; Week3 and Week4; Week5 and Week6) compared to the participants in the "Non-Riding" group. The overall means for the three sets of weeks, independently of being from the "Riders" group and the "Non-Riders" group showed that the is a difference between how many cards were recalled during week1 and week2 (mean=7.10; standard deviation=0.83), week 3 and week 4 (mean=8.67; standard week2 (mean=8.67; standard deviation=0.83), week 3 and week 4 (mean=8.67; standard week2 (mean=8.67; standard deviation=0.83), week 3 and week 4 (mean=8.67; standard week2 (mean=8.67; standard deviation=0.83), week 3 and week 4 (mean=8.67; standard week2 (mean=8.67; standard deviation=0.83), week 3 and week 4 (mean=8.67; standard week2 (mean=8.67; standard deviation=0.83), week 3 and week 4 (mean=8.67; standard week2 (mean=8.67; standard deviation=0.83), week 3 and week 4 (mean=8.67; standard week2 (mean=8.67; standard deviation=0.83), week 3 and week 4 (mean=8.67; standard week2 (mean=8.67; standard deviation=0.83), week 3 and week 4 (mean=8.67; standard week2 (mean=8.67; standard deviation=0.83), week 3 and week 4 (mean=8.67;

deviation=0.80), and week5 and week6 (mean=9.75; standard deviation=1.09). Also, the overall mean of the "Riding" group (mean=8.94; standard deviation=1.18) is slightly larger than the one of the "Non-Riding" group (mean=8.06; standard deviation=1.25), showing that the participants in the "Riding" group had a slightly better overall performance in recalling cards compared to the participants in the "Non-Riding" group. In cases where there was a missing data the means were calculated considering the scores available. Box plots were used to assess the distribution of the data for both groups during the three different sets of weeks on the recall memory test. The data concerning how many cards both the "Riders" group (mean=7.33; standard deviation=3.42) and "Non-Riders" group (mean=6.90; standard deviation=3.40) recalled during the first and second week is normally distributed. The data involving how many cards were recalled during the third and fourth week by the "Riders" group (mean=9.50; standard deviation= 3.35) is left skewed, while the data involving how many cards were recalled during the third and fourth week by the "Non-Riders" group (mean=7.81; standard deviation=3.18) is normally distributed. Finally, the data concerning how many cards were recalled during the fifth and sixth week for the "Riders" group (mean=10.00; standard deviation=4.58) is normally distributed while for the "Non-Riders" group (mean=9.50; standard deviation=4.35) it is left skewed.

To test the first hypothesis, whether therapeutic riding produces any differences on memory recall in Down's syndrome individuals, a mix subjects 2x3 analysis of variance (ANOVA) with repeated measure for the second factor was used. First a Mauchly's test of sphericity was assessed to test the homogeneity of covariance of the data. The non-significance of the Mauchly statistic for the test of the homogeneity of covariance indicates that the assumption of sphericity of covariance is tenable.

A 2x3 ANOVA test with repeated measure for the second factor was then calculated, showing a significant main effect of weeks (F (2, 30)=11.90; p<0.05), which suggested that the participants improved how many cards they recalled every week, independently form which group they belonged (mean (standard deviation): Week1 and Week2 < Week3 and Week4 < Week5 and Week6 respectively 7.10 (0.83)<8.67 (0.80)<9.75 (1.09)). However, no significant main effect of groups of participants (F (1,15)=0.82; p>0.05) was found, suggesting that the group in which participants where ("Riding" group: mean=8.94; standard deviation=1.18; and "Non-Riding" group: mean=8.06; standard deviation=1.25) had no significant influence on how many cards the participants were recalling. Also, no significant interaction was found between the weeks in which participants had to recall the cards and from which group ("Riders" group or "Non-Riders" group) participants belonged (F (2,30)=0.82; p>0.05), implying that both groups and the weeks had no significant influence on participants recalling (mean (standard deviation) of participants of the "Riding" group during Week1 and Week2, Week3 and Week4, Week5 and Week6 respectively: 7.33 (3.42); 9.50 (3.35); 10.00 (4.58)) (means (standard deviation) of participants of the "Non-Riding" group during Week1 and Week2, Week3 and Week4, Week5 and Week6 respectively: 6.90 (3.40); 7.81 (3.18); 9.50 (4.35)).

To test the second hypothesis, whether mood influences memory recall, the research used a bivariate correlation. Because of the lack of variance noticed on the data showing the mood of the participants of both groups during the three sets of weeks, how many cards were recalled during the 6 weeks for both groups ("Riders" group and "Non-Riders" group) were collected in two different sets by summing week1, week2 and week3 together, and by summing week4, week5 and week6 together.

Also, the results of how the participants were feeling were summed into two sets grouping the average of both "Riders" group and "Non-Riders" group during the first three weeks (Mood123) and during the last three (Mood456). To be able to do so, the mood of both "Riders" group and "Non-Riders" group were defined as positive (P) or negative (N), giving to P a score of "2" and to N a score of "1". In case of a missing data the means were calculated considering the scores available.

Then, the means for each set of weeks was calculated independently of being from "Riders" group or "Non-Riders" group. The mean of how many cards were recalled for both "Riders" and "Non-Riders" groups during week1, week2 and week3 (mean=7.40; standard deviation=3.14) is smaller than the mean of both groups of participants during week4, week5 and week6 (mean=9.67; standard deviation=4.02), suggesting that the performance of both groups in recalling cards increased. Also, the means of how the participants were feeling (mood) for both "Riders" and "Non-Riders" groups suggested that the average mood was slightly different during the two sets of weeks being slightly closer to 2 (=P+P+P) during week1, week2 and week3 (mean=1.91; standard deviation=0.14) compared to week4, week5 and week6 (mean=1.78; standard deviation=0.31). A Spearman correlation was then conducted, showing no significant correlation between Week1, Week2 and Week3 and Mood456 (rs=0.60; n=17; p<0.05). This suggested that there was a greater correlation of the mood of the participants during the second set of weeks (mean=1.78; standard deviation=0.31) compared to the first set of weeks (mean=1.91; standard deviation=0.31).

To test the last hypothesis, whether therapeutic riding influences self-esteem in individuals with Down's syndrome, an independent sample t-test was conducted.

First, means were calculated from the self-esteem questionnaires. Participants in the "Riding" group (mean= 47.78; standard deviation= 5.91) had a greater mean than participants in the "Non-Riding" group (mean= 38.75; standard deviation= 2.92). Histograms were used to assess the distribution of the data. The data regarding the "Riders" group is not normally distributed (mean= 47.78; standard deviation= 5.91), while the data concerning the Non-Riders group is normally distributed (mean= 38.75; standard deviation= 2.92). A Lavene's test of homogeneity of variance was used to assess the equality of variance of the data. The non-significance of the Levene statistic for the test of homogeneity of variance (p>0.05) indicates that the assumption of homogeneity of variance is tenable.

An independent sample t-test was calculated showing a significant difference between participant's scores on the Self-Esteem Questionnaire for "Riders" group and "Non-Riders" group (t (15) = 3.91; p<0.05). According to these results participants in the "Riding" group (mean= 47.78; standard deviation= 5.91) can be considered as having a higher self-esteem than participants in the "Non-Riding" group (mean= 38.75; standard deviation= 2.92).

DISCUSSION

Because of the non-significance results obtained in the mixed-subjects design, the present study failed to demonstrate that participants with Down's syndrome having therapeutic riding lessons showed a greater difference on memory performance (first hypothesis). Horse riders' motivation has been thought to be one of the major causes in stimulating and therefore improving memory (Arachi & Rugiero, 2001). Also, the sensory inputs acquired during riding a horse and the processing of these inputs should force the rider to use his memory as an aid in learning and in reaching different goals (Biery, 1985). The present study, however, failed to reach the same conclusions as those by Arachi & Rugiero, and Biery. In fact, the current study found no significant difference between the group of participants' horse riding and the control group. It is true that findings showed an increase in memory in both group of participants, and that the two groups slightly differed in how well they performed during the weeks in recalling the cards. In addition, the slight difference in the means between the two groups was not enough for the analysis of variance to produce significant results.

It could be argued that while the other statements were referring to motivation (Lessick, Shinaver, Post, Rivera & Lemon, 2004; Arachi & Rugiero, 2001) and sensory inputs influencing memory (Biery, 1985), the present study just analysed memory without testing motivation or sensory inputs. As a consequence, the study did not succeed in finding whether it was therapeutic riding influencing motivation stimulating memory or whether it was therapeutic riding influencing sensory inputs stimulating memory. Further studies should consider testing participants on motivation and sensory inputs acquired by giving a task before, during, and after have been on a horse to test if there could be an actual difference. The control group, even if it is not supposed to be influenced by these factors, should have three different sets of task which should match the ones of the horse riding group.

Also, the stimuli to be remembered (cards) could be improved by choosing a range of images that could suit the knowledge of all the participants from both groups. In fact, during the study the researcher noticed that not all the participants knew what was represented on the cards. Because of this, it could be argued that some of the participants having a better knowledge of the stimuli presented could have been in advantage compared to the rest of the participants. Also, the objects appearing on each card presented both name and picture representing them. Participants knowing how to read might have been in advantage compared to those participants who could not read. In fact, the individuals not being able to read might have remembered the cards because of the images and because of the researcher reading the name on each card. Further studies could use different types of stimuli to test memory, which should be known by all the participants.

Moreover, differences between the participants, such as age and gender in both groups might have influenced the results on how well the participants were performing in the task. Future research could match the participants on the basis of their I.Q., for example, to control these factors. Also, rather than having the participants compared to only one control group, it could be interesting to have them compared to both a control group and another group of individuals with the same disability doing a conventional therapy. This could be a way to test if therapeutic riding has any influences on memory.

The present study failed to replicate the statement that being in a "good mood" makes the treatment more effective (Kern, 2000) (second hypothesis). In fact, the study did not find during the first set of weeks (first, second and third week), a significant correlation between the moods of the participants in both groups and how many cards they were recalling. However, during the second set of weeks (fourth, fifth and sixth week), the results showed a significant correlation between the moods and how many cards the participants were recalling. This could possibly be because of a lack of variance in the results concerning the

mood of the participants during the first, second and third week. Also, the research took in consideration both groups of participants simultaneously, while it could have been better to compare the riding group with the control group. As a result, it could be argued that the present study stated only that mood should make a difference in how many cards were recalled. Also, it did not give any evidence that horseback riding alters mood and consequently making a difference in the memory task.

Because of these results it could be suggested that some of the participants did not state their true feelings in order to please the researcher. Because the participants did not know the researcher preceding the research, they could have not felt confident enough to state their feelings. Additionally, because the findings regarding this hypothesis were not strong enough and individuals' moods were difficult to define, these statements should be critically considered.

Further studies could improve the methodology used by asking the mood of the participant before and after the riding session, to see if there could be a variance as a consequence of riding a horse. The control group should be asked about their mood before the task and shortly after an amount of time, which will be the same as the time spent riding.

Horseback riding influences self-esteem in individuals with Down's syndrome (third hypothesis). The results in the study conducted by Gatty (n.d.) showed that the participant's average self-esteem scores after horse riding were significantly higher than the average scores found before riding. However, safe assumptions on the findings from the research conducted by Gatty cannot be made, because the research lacked a control group. Also, the sample did not show a great variability. The present study, by adding a control group, and basing the research on individuals with Down's syndrome, tried to overcome methodological flaws of the previous research. The current study found a significant difference between the horse riding group and the control group, and therefore the results are in agreement with those results obtained by Gatty.

According to the research conducted by Burgon (2003), confidence was one of the aspects that strongly increased in the participants. The present study did not compare self-esteem with other psychological aspects that could be gained from doing therapeutic riding. Also, the research conducted by Burgon found results on confidence, while the present study tested participants on self-esteem. It could be argued that self-esteem and confidence are related to each other, but further study on therapeutic riding should be needed to assess this claim.

The research conducted by Bizub, Joy & Davidson (2003) found that self-esteem was one of the psychological benefits that were gained after a therapeutic horseback riding program. The present study supported Bizub, Joy & Davidson's research, by finding higher self-esteem in the participants attending therapeutic horse riding lessons compared to the participants of the control group. However, Bizub, Joy & Davidson's study was based on interviews with no control group, while to test self-esteem the present study used a questionnaire and a control group. Nevertheless, even if both studies differed on the method of data collection used, they achieved the same findings. Also, no other psychological gains were looked at in the present research.

It could be argued that the questionnaire used to measure self-esteem in the present research was not relevant enough. In fact, the questionnaire was created for the purpose of the study. Also, the researcher noticed that some of the participants from both groups could not understand few of the questions asked on the questionnaire and need the help of carers/ parents. To analyse self-esteem further studies should consider using the present questionnaire to test its validity. Also, the statements might have possibly been influenced by the presence of the researcher during the filling in of the questionnaires. As a consequence, as it was previously suggested by Bizub, Joy & Davidson (2003), further studies might consider having an unfamiliar person giving the self-esteem questionnaire to the participants.

A number of issues should be noted regarding how general the present results might be. In fact, the study can only be considered to report findings for the Down's syndrome population. Also, since the study was based on quantitative results, the sample can be considered to be too small. Further studies should look at the effects of therapeutic horseback riding on larger samples of participants. Also, the research did not analyse whether there was a difference in the length of time the participants had been horse riding. It could be interesting to see if having been riding for a longer time had any effects on memory tasks and on self-esteem.

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SAFENESS IN THERAPEUTIC RIDING: MINIMIZING RISKS AND PROVIDING BETTER AND INTENSIVE CONTACT BETWEEN PEOPLE AND HORSE

Author: Kether Van Prehn Arruda - Brazil

INTRODUCTION

Although the Therapeutic Riding has its origin in a period before Christ, being seen in Hippocrates de Loo's books, among others, it was really revealed around the world in 1952, with the Olympic athlete, Lis Hartel. At the same time this therapy has developed, it has been necessary to prove scientifically its benefits, and, on this case, the most discussed point has been the multi-dimensional movement of the horse.

On the other hand, today there is a necessity of verifying other aspects, such as the cognitive, psychomotor, emotional, social and sportive ones, etc. It is known that Therapeutic Riding is competent while developing people in a global way. I could notice, during my professional experience, and prove in study cases that such therapy promotes some minimal and sufficient conditions for the person to involve himself/herself in the treatment and take off barriers of his/her global development tendency. To such phenomena, Carl R. Rogers (1958) called "*minimal and sufficient conditions to establish a help relationship*". According to Rogers, those conditions are:

- 1. Therapist and client must be at the same place, at the same time. In the case of Therapeutic Riding, it includes the horse as part of the setting.
- 2. Congruence: therapist must be unique, integrated, and congruent; must be in the relationship exactly as he/she is, not only a "role" or a "mask".
- 3. Unconditional positive consideration: it is about a total acceptation of the person's feelings and expressions, without judgment or prejudice.
- 4. Empathic comprehension: to notice the client's interior world as it was your own, but not making confusion about being yours in deed.
- 5. Transmission: client must notice minimally the congruence, acceptation and empathic comprehension from therapist.

As I have discussed before, I believe that a horse, in certain way, has all the characteristics above, but, even it has a unique and unquestionable role in that therapy, the one that is supposed to establish the relation between person and horse is the Therapeutic Riding Instructor, and I ask: '*Can the equine therapist promote the basic conditions – congruence, unconditional acceptation, empathy and transmission?*' When Rogers identified such conditions he was probably unconcerned about Therapeutic Riding. I risk imagining that if he were in a Therapeutic Riding setting, he would add the condition: '*To establish the contact between person and horse preserving the client's emotional and physical integrity*'. Although all the conditions above are important, we focus in the mediator's responsibility to form an intensive, real and safe contact between person and horse, for emotional and physical matters.

ABOUT RISKS AND TRAUMAS

1) Practical examples

A therapeutic process in development can be interrupted anytime by a physical or emotional trauma.

A physical trauma can happen when a person in equine therapy treatment falls down from the horse; when a horse scratching itself hits the child in treatment or when it steps his/her foot or anytime when the action or reaction of the animal can cause a physical damage to the person who is just trying to develop his/her global condition. The emotional trauma can happen even more easily with or without a physical one. When, for example, a mediator tells the treated person that there is no risk to feed a horse with a carrot, but, the animal, hungry, bits the person's fingers. It also happens when a horse is frightened and it surprises the mediator, too, because he or she was incautious or unprepared, and it, naturally, can also scare the person in treatment, in such way that puts in risk the treatment development. In those cases, we would disrepair instead of repairing.

Many times, the mediators expose the person to traumas because he/she is not aware about risks related to that therapy. The examples given illustrate that to protect physical and emotionally a person in treatment, the mediator must be prepared for most risk situations as possible, being congruent to the possibilities.

I can illustrate it with an episode happened while I was mediating a practice in which a super-protection act can be explained in a very different view.

I could work with people able to develop physical and emotionally and as athletes, riding horses. One of them was a boy, 14, with Down syndrome. After some time dealing with his difficulties, he was able to deal with the horse grooming, put the saddle and other equipment to ride the horse, dismount from it and guide it while walking, without help. The next step would be the trot. I am supposed to emphasize that all the horse riders that I know have fallen down many times from the horseback, and from the beginning of that treatment, I have told my patient about the risk of it, telling him he would fall someday, and it would be natural, because he was becoming a horse rider, too. More than telling him, I advertised him about how he could fall safely, using strategies to fall standing up. We started the trot training in straight places, I followed him by his side, and, in certain time, he wanted to do it by himself, without my help, but I told him he was not ready for it. In the following meeting, he decided to do that alone at the round pen, where he would need more balance because of the centripetal force. I told him to stop, but like a child testing his father, he did not obey me, and fell down, passing by the horse neck, holding its mane and lying immediately after fall, the same way we have talked before.

Soon, the boy mentioned to run, but I held him and talked about all the advices I had given and all the times I had fallen. As I talked to him, everything said was congruent to what I felt and to what I had said before. As I noticed his heart was accelerated, I told him that feeling scared was natural at the first accident and that I thought the horse could be the same way. I asked him to follow me toward the animal, we did it together, he touched the horse noticing its heart was as accelerated as his own, and them he became calm again, agreeing to ride one more time before the end of the day, so both could overcome that bad moment. When the boy met his father, the episode was retold with confidence and joy.

When my patient disobeyed me, it was evident that the end would be what it was, but the moment and place were perfect to permit that to happen, so everyone could increase his own knowledge with that experience. After that, our link was stronger and so were our confidence and his development tendency flew more intensively.

What would happen if we had never thought about falling? And if I were afraid about such event? And if I omitted that from him? Or if he were not trained to avoid damage when falling? Or if he could not mount immediately after that?

We do not know, but in the present case, a group of cautions took a risk episode to a therapeutic development.

2) About Mountains and Horses

The therapeutic effects happen as the patient-horse relationship is built and the one who is in charge to promote its quality is the Therapeutic Riding Instructor. If the professional understands that the basis of its construction is safety, better and greater will be the benefits of that therapy.

To exemplify its significance, I claim to another activity that I dedicate myself – climbing. I have been climbing for more than 12 years and nowadays I am the president of Climbing Association of my district, and for more than 08 years I have dedicated myself to give climbing lessons in mountains.

Climbing is a sport practiced in the best way in pairs, connected by a rope, where the first to climb up is the *leader*, and the second is the *follower*. "Leading is the skill of climbing first up a pitch, utilizing a belayer, rope, and intermediate protection for added safety", it is explained in the *Mountaineering: the freedom of the hills*, a book edited by GRAYDON (1992). The editor and his collaborators complete enlightening that as leader, you take the challenge and responsibility of determining the direction of the climb, while the second avoids the leader's falling down straight to the ground. When on the top, the leader permits the follower's ascent, who climbs without great risks, because of a belay from above.

When you are the leader, you are responsible for assuming the possible risks and necessities of the rock climbing, it means that you must be prepared to fall; to be attached by bees or other insects, hidden in a crack; you must know the way and the weather conditions, even as the clothing and equipment needs. Finally, a leader is in charge of all information necessary to make the climbing safe.

When we go climbing, we do not expect surprises, but we must know how to act and react if they happen, because it is not rare that they will happen someday. For that reason, the leader must be a climber who, gradually, achieved the experience necessary and the knowhow about such risks and possibilities, and more than that, the person who knows how to avoid or minimize them.

Statistical studies from the Mountain Security Group reveal that a fatality happens in a proportion of one to a thousand risk behaviors.

Analyzing the following Accident Pyramid, usually called *Fatality Iceberg*, we can notice that on the basis of it we find *risk behaviors*, but because they do not appear all the time, they do not receive the need attention. Most of people just think about safety when a fatality happens.



From: http://www.segurancaemmontanha.com.br

The chances of an accident are many, and we do not have total control of them. Sometimes, a climber knows about knots, equipment, he/she has some technique and strength because of climbing indoors; he/she feels as being a complete climber, but when in a mountain, he/ she does not know how to deal with natural events, which can happen all the time and are uncontrolled, as rain, wind, insects, or even vertigo, among other circumstances.

Such indoor climber can be compared to a professional as a physiotherapist, phonotherapists or a psychologist, etc., who is successful in his/her clinical area, and then decides to attend a Therapeutic Riding course. He/she learns about its benefits and starts to work in this new area as a mediator. The professional is happy with it, but *does he/she know about the animal's reactions? Can he/she notice the horse's signs? Can he deal with it? Can she take off the person from the horseback in time to avoid a bad accident? Can he/she follow the patient by the horse without surprising it? Can he protect himself from a sudden movement of the horse? If that professional are lucky, his/her risk behaviors won't damage the development of the patient and, as time goes by, he/she will improve his/her own professional experience, learning about the risks involved in that therapy and how to avoid them. But can we count on luck, being disloyal to the patient's confidence? I do not believe it is an ethical act.*

3) Security and the Law

To those professionals who think they are protected by a *Conscientiousness Paper*, or a similar, that parents sign for their children, it is necessary to clarify that, in Brazil, it has no legal value in the case of family feels that they could be damaged because of the practice of Therapeutic Riding.

Law is imperative and regards to the Therapeutic Riding Center and its owners and professionals. Damages caused by that therapy are held in the Civil and Criminal Code of Brazilian Law.

According to the Civil Process Code Federal Law N. 10.406, from jan/10/2002:

"Art. 927. The one who, because of illicit act (arts. 186 and 187), has caused damage to another, is obligated to repair it.

Only paragraph: It will be obligated to repair damages, independently of guilty, in the cases specified in Law, or when the activity usually developed by the author of that damage implies, according its nature, risks for other's rights.

Art. 936. The owner, or proprietor, of the animal will restore the damaged caused, if he/she cannot prove victim's guilty or greater force.

Art. 948. In the case of homicide, the compensation consists in, without excluding other restorations:

- I paying the expenses with victim's treatment, funeral and family's mourning;
- II food installment to whom the dead person used to be owe, considering the possible lifetime of the victim.

Art. 949. In the case of health damage or other offense, the offender will compensate the offended on treatment expenses and discontinued profits up to the end of victim's convalescence, and any other damage that victim could have suffered.

Art. 950. If imperfection is resulted by the offence because of the offender is unable to act in his/her job or profession, or if his/her workforce is decreased, the compensation, more than treatment expenses and discontinued profits up to the end of convalescence, will include pension corresponding to the work gain for which he/she is unable, or because decline suffered.

Art. 951. What is set in subsections 948, 949 and 950 is enforced to the case of compensation to the one who, in the practice of professional activity, for negligence, imprudence or incapability, causes the patient's death, increases his/her injury, causes him/her harm, or disables him/her to work."

Penalty Code foresees in Law Decrete N. 2848, from dec./07/1940:

"Art. 13. The result of which depends on the crime penalty is only attributed to whom causes it. It is considered cause the action or omission without which the result would not have occurred.

Second. The omission is criminally relevant when the person who omits it should and could act to avoid the result. The duty of action owes to:

- b) any way, assumed the responsibility of avoiding the result;
- c) with previous behavior, get the risk of the result occurrence.
- ...II. Guilty, when the agent caused the result because of imprudence, negligence or incapability."

The Penalty Code is very clear: with negligence comes guilty. So, mediating a Therapeutic Riding section without knowing the risk possibilities is negligence.

PREPARING MEDIATORS

We know that there is much providence to be taken toward a safe treatment, such as horse training, the equipment and center maintenance, etc., but in the present work we will focus

in the mediators' and assistants' formation, in order to let them become capable to avoid physical and emotional traumas in patients. The training is the preventive way to safeness and consequent evolution of therapeutic process.

As the way of a *follower* climber becoming a *leader*, passing through many experiences, sometimes climbing for years, to finally visualize the risks, take a decision and lead a climbing, in Therapeutic Riding, I consider there are two kinds of professionals taking part at the section: the *mediators* (leaders) and the *assistants* (followers). As it happens in climbing , both are essential to process, but the mediator must have more experience, know the possibilities, foresee the horses' and patients' movements and control the environment around them all.

The mediator must know very well the elements: HORSE – ENVIRONMENT – PATIENT – EQUIPMENT.

As a climbing instructor, I developed my basic course focusing in fundamental contents for the student to go on in his/her development through that sport. I have concentrated on safeness aspects, because practicing in a preventive way, students would have time to enlarge their own experience. Along classes, I realized that contents involved in the mountain setting with practical examples were more easily learned.

PIAGET (1982) elucidates such fact when explains the learning process occurring in steps as assimilation, accommodation and adaptation; where the person tries to get used to new situations, assimilating external stimulation and accommodating it with his/her previous knowledge, updating concepts and increasing cognition.

How assimilate something distant? Although human's sharp ability of figuring out situations and sensations, that imaginary world precision hardly ever contains the totality of reality and ends in pseudo-knowledge. For that reason, I started offering to my students the possibility to build their experience and learning about climbing, taking them to the mountain at the first day, increasing knowledge with practice at real time, supervising the possibilities of risks and presenting them a multi-sensorial and emotional stimulation, result of contact with most elements as possible in their daily practice.

It was from that experience, added by my life as horse riding instructor and equine therapist, and the necessity of build a therapeutic riding work team that I developed *Pegasus Prevent* – *Knowing about and minimizing the risks of therapeutic riding* – a training program which aims to provide to therapists more consciousness about the risks of that job through simulations of usual situations in equine therapy, building a safer attitude in practical conduct and, consequently, preventing trauma occurrences.

1) The training

Subjects: multi-professional team, working with disabled people: three psychologists, two phonotherapists, an occupational therapist, a physiotherapist, a music-therapist and a pedagogue, coordinated by the Equine Therapist, Riding Instructor and Psychologist, Kether van Prehn Arruda.

Place: Theoretical studies: Associação Beneficente São Lucas, Bragança Paulista, SP - the institution that offered the patients to be treated in the beginning of the practice.

Practice: Centro Hípico Viverde - place that offered the horses and some assistants, in which we still work as partners.

Duration: 20 hours of theoretical studies in the institution; 20 hours of practice in the Horse Riding Center; 02 months of supervised practice.

Method: the program was divided into three parts:

- a) First stage: getting along with the partner-horse.
- b) Second stage: Emergency and risk situation: how to avoid and solve them.
- c) Third stage: Practical supervision.

2) Training sections:

a) Getting along with the partner-horse.

We started the work of team formation with theoretical studies about the relations: horses X horses and horse X human. Since it, we studied the history of the horses in our planet and with human-being, the animal's physical structure, races, colors, food habits, multidimensional movement and also studies about the relationship between horses (communication, leadership, protection and security). Then, we could understand the relation between horse and human, our focal point.

To promote a better contact to the contents, I used Monty Roberts' texts and the movie inspired on his life The Horse Whisper. Such material was able to homogenize the team knowledge about our partner's behavior.

The practical contact was sequential and gradual, in order to facilitate professionals' approximation and learning. Starting with a theoretical review, we recalled contents as physical structure of the horses, their colors, etc. and the first contact between them (professionals and animals) was through grooming. Professionals were supposed to take the animals from the barn, care (grooming) and feed them.

About riding equipment, they were presented while professionals practiced saddlery. During that experience, as most as possible, I pointed out the horses' reactions and what they meant, as biting while putting the girth, stepping on therapist's foot while brushing the animal, and so, we were experiencing the protection posture that mediator is supposed to have when teaches a patient.



On the left, Carolina Castro in her first contact with the horse, and on the right, Ana Paula Panizza, while brushing, using protection techniques to be away from a step or bite of the horse.

That training was directed to people who, at most, had already had some contact to Equine Therapy or/and had attended ANDE-Brasil course, so, it was a kind of review of the aspects commented above, focusing in the safeness aspect while dealing with the horse, always pointing to the animals' reaction during the activities proposed.

After the approximation and grooming training, the team was driven to horse riding, what took us 05 hours in the ring, confirming the leadership relation.

By that moment, professionals had the opportunity to put in test their ability to communicate to the horse and establish a leadership relation. Of course that relation is built as time passes, but it was fun in certain way to watch "new riders" being tested by the partner-horses. Although the mediator does not need to be a great rider, he/she must learn how to establish a leadership relation. I mean, horses usually look for leaders in herds, where the others are protected by it. They offer that leadership to humans who can return with safeness and comprehension. While mediating, that relation must be clear: mediator is the leader. During the riding classes, I focused in showing, exemplifying and training the commands to ride the animals safely, signalizing the leadership test and helping professionals to establish that leadership with respect to horses.

b) Mediating safely

The Therapeutic Riding work team spent 10 hours in simulations of usual risk situations common to that therapy.

By that time, the professionals have already known the horses and equipment in such satisfactory way and they have established a leadership relation with the animals. They have also met many of the elements that compose the Therapeutic Riding treatment and that affect safeness aspects, such as the horse, its reactions and how to deal with it. There was only a missing thing up to then: what they were supposed to do when they cannot control the horse.

Starting by the sequence of happenings at a therapeutic section, we simulated various situations as the professionals themselves were the disabled patients, like spastic people, children with autism, patients without protection reflections or aggressive who used to hurt the horses. Everyone pretended he/she was a disabled person and the others practiced how to drive the treatment, being the others characters of the therapeutic setting: guide assistant, lateral assistant or mediator, passing by all the procedures: approximation, feeding with carrots and hay, ways to mount and dismount, flexibility exercises on the horseback, therapeutic vaulting, posture changes and conduction.



The focus point was the safe procedures to mediate the relationship between person and horse, knowing how to end a therapy without risks of trauma. To exemplify such situations, I ended up the experience evaluating the practice, pretending myself a patient without protection reflection, asking the professionals to do many different posture modifications while I tried to jump from the horseback every time I could. The therapists were supposed to control the situation. And they did.

Kether Arruda, the Equine Therapist, and the Assistant, Paulo, prepared to avoid a hit by the horse's head, while the patient, André, was touching his favorite mare, Lux. **c) Practice supervision**

After training, we started the work of Pegasus Equine Therapy Center. Each work was preceded by a medical evaluation, an evaluation of each professional of the work team, interdisciplinary planning and evaluation on the horseback.

At that moment, I started the sections as the main mediator of all patients, until I could just supervise. That period was very important for me to realize that all mediators have confirmed their learning and that they could visualize better the risks involved to the therapy.

As a team, we could build a uniform consciousness about security, constructing a solid basis ready to let the team development. Such experience contributed for another work, being presented in this Congress, which involves the formation of the interdisciplinary team with transdisciplinar mediation.

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HIPPOTHERAPY HELPING THE REHABILITATION OF MOTOR-COORDINATION, BALANCE AND PLANTAR SUPPORT OF A HEMIPARETIC PATIENT CAUSED BY AN AFTER-EFFECT OF PINEAL GERMINOMA

Author: Thais Lydiani Manzolin* - Brazil

According to Merrit, the germinomas are most common on male children during the childhood or adolescence, and despite their malignant characteristics, they can be cured in more than 80% of the patients, due to the sensitivity to the radiotherapy and chemotherapy. The pineal gland is located on the posterior part of the third ventricle and has a delicate relationship with the deep nervous system, which is composed by the internal cerebral veins that run together to the top of the third ventricle and join theirselves forming the great cerebral vein. For being a vascular region, the tumors which grow in this area compress nervous and vascular structures and, as a result, signals of the disease start to appear, such as: intra-cranial pressure syndrome (caused by hydrocephalia), Parinaud syndrome (causing the incapacity to look up, dilated pupils), lethargy, loss of memory, movements' ataxy (due mainly to the ventricle's dilation), extremities' ataxy, as well as distorted movements and spasmodic atony.pp r cha (due to maily up ase start to appear, such as: lity

The Hippotherapy acts as a way to decrease some of the symptoms caused by the pathology, therefore the horse's three-dimensional movement (up/down, ahead/backwards, right/ left), transmits to the patient through the pelvis contact, movements of lateral inclinations of trunk, rotations for dissociação of waists, up and down movements of the pelvis, providing to the patient several benefits, such as: tactile, visual, auditory and smelling sensitivity stimulation through the environment and the activities with the horse; body's organization and conscience promotion (corporal structure); tonic modulation depelopment; muscular force stimulation; self-esteem increase, facilitating the social integration; it helps to surpass phobias; it stimulates affectivity through the contact with the animal; memory improvement; it motivates the learning; it stimulates the balance and motor coordination.

Balance can be defined as the ability which one has to control his/her stability, in other words, the ability of keeping constant his/her own position related to the gravity. The capacity of balancing is mainly related to the labyrinth and cerebellum, since this last one exerts great influence on the balance, therefore it controls the coordination of all the movements. (HOLLE, 1990).

According to Thomas Shmitz, coordination is the capacity of executing regular, accurate and controlled movements. The ability of producing this movements is a complex process, which depends on a totally intact neuro-muscular system. The coordinated movements are characterized by appropriate muscular speed, distance, direction, rythm and tension. (SCHMITZ, 1993 apud O'SULLIVAN, 1993).

Hemiparesy, according to Susan B. O'Sullivan, is the partial or incomplet paralysis, affecting just one of the body's halfs. (O'SULLIVAN, 1993).

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GENERAL OBJECTIVE

This work has the objective to analyse the motor-coordination, balance and plantar support of a righted hemiparetic patient caused by an after-effect of pineal germinoma, through the Hippotherapy method, to verify if this method brings or not benefits to the patient.

METHODOLOGY

For the accomplishment of the work, the population was composed by a patient (which had authorization for accomplishment of the research required to one of his responsibles), 17 years, of the male sex, identified as J.L.S., righted hemiparetic patient caused by an aftereffect of pineal germinoma. The pineal germinoma diagnosis was given to this patient in August, 1998. From 1999 to 2000 the patient had radiotherapy and chemotherapy sessions. Since the conclusion of these treatments, it was accomplished just the image, haematological and clinical control.

The data had been collected by means of evaluations of the motor coordination, balance (through specific tests) and plantar support (in the Baropodometer device), both carried through before and after the Hippotherapy treatment, for posterior comparison of the results and a gradual evaluation in relation to the balance, motor coordination and plantar support of the watched patient.

Each session had consisted of 30 minutes, with a frequency of twice a week, in the period of October to the November, 2003, totalizing 15 sessions. During this period of Hippotherapy treatment, the patient did not carry through conventional Phisioterapy. The practical Hippotherapy was carried through in a institution called Pequeno Cotolengo of Paraná State - Dom Orione.

Applied tests

For the evaluations of motor coordination and balance the following tests had been accomplished, according to Thomas J. Schmitz (SCHMITZ, 1993 apud O'SULLIVAN, 1993). The test are described as it follows: Finger to the nose; finger to the finger of the therapist; opposition of the fingers; standing with joined feet; standing, on one of the feet; to walk to right, left and backwards; marching in the same place; to initiate walking and to stop it abruptly; to walk in circles; to walk on the heels.

To get trustworther data for these tests, a punctuation scale was used, where the performance level is determined through an arbitrary scale:

Chart 1: Punctuation scale of the tests.

- 0 Incapable to play the activity
- 1 Observed great difficulty; the movements are very arrhythmic; Observations: significant instability, strange oscillations and/or movements.
- 2 Moderate difficulty is demonstrated during the accomplishment of the activity; the movements are arrhythmic and the performance spoils with the increase of the speed.
- 3 Movement concluded with only few difficulty.
- 4 Normal performance.

SOURCE: SCHMITZ ,Thomas J., 1993, p.147 apud O'SULLIVAN, 1993).

Interventions

During the Hippotherapic treatment there were accomplished several exercises and positions which stimulated the improvement of the motor coordination, balance and, consequently, the improvement of the plantar support. The activities accomplished during the treatment were: to brush the horse (motor-coordination and attention); to feed the horse; games with balls; fit and assemble games (motor-coordination and attention); activities with nature elements (for example, to withdraw leaves from a tree, and on this way the patient can work the motor-coordenation); to catch balls on the horse's back, doing the movement of trunk's rotation (pelvic and scapular waist dissociation); with the horse in movement, different positions of the superior members (hidden arms, hands over the head, hands on head, stimulating the balance), riding the horse seating laterally, and inverted riding.

RESULTS

The results in relation to the motor coordination and balance of the patient J.L.S., before and after the Hippotherapy treatment are elucidated below.

On the "Finger to the nose" test (grafh 01) with the right hand, before the treatment the patient was incapable to accomplish the test (score 0) and after the treatment he accomplished the activity with a few difficulty (score 3); with the left hand, before the treatment he reached the score 3 and, after the treatment, concluded the test normally, getting the score 4.



Grafh 01: Finger to the nose with opened eyes test

It was possible to observe in the "Finger to the nose" test (grafh 02) with the right hand, before the treatment the patient was incapable to accomplish the test (score 0) and after the treatment he accomplished the activity with a few difficulty (score 3); with the left hand, before the treatment he reached the score 3 and, after the treatment, he concluded the test normally, getting the score 4.

Grafh 02: Finger to the nose with closed eyes test



According to the grafh 03, during the "finger to the finger of the therapist" test with opened eyes and the right hand, the patient accomplished the activity with moderate difficulty (score 2) before the treatment, and after it he got the score 3, in other words, he concluded it with just few difficulty; with the left hand the patient was incapable to conclude the test (score 0) before the treatment, and after the Hippotherapy, he accomplished the activity normally, getting the score 4.

Grafh 03: Finger to the finger of the therapist test



After the Hippotherapy treatment, during the "finger to the finger of the therapist" test with closed eyes and the right hand, the patient accomplished the test with moderate difficulty (score 2), presenting arrhythmic movements. With the left hand, the patient was incapable to conclude the test (score 0). Before the treatment the patient was incapable to accomplish the test with both hands, as much with opened as closed eyes.

According to the information from the grafh 04, which refers to the "Opposition of the fingers" test, with opened eyes, before the treatment the patient got the score 2 with the right hand and the score 3 with the left one. However, after the treatment, with both hands, the patient concluded the test normally (score 4).



Grafh 04: Opposition of the fingers test with opened eyes

During the "Opposition of the fingers" test, with closed eyes, the patient concluded the test normally after the treatment (score 4), with both the hands. It is important to know that after the treatment he accomplished the activities with moderate difficulty (score 2) with the right hand and reached the score 3 with the left one.

During the "Standing with joined feet" test with opened and closed eyes, the patient reached the score 1 (accomplished the activity with great difficulty) before the treatment and after this he had just few difficulty (score 3). With the hands on the head and hidden arms the patient accomplished the exercise normally (score 4) in the end of the treatment, since before the treatment he had few difficulty (score 3).

The "standing, on one of the feet" test (grafh 05), with opened and closed eyes, hands on the head and superior members hidden, was accomplished after the treatment with few difficulty (score 3). However, when the superior members were over the head, the patient presented moderate difficulty (score 2). Before the treatment this test was concluded with the superior members hidden and hands over the head with great difficulty.

Grafh 05: Standing, on one of the feet test



The "Standing and flexing the trunk" test was accomplished before the treatment with few difficulty (score 3), and after this, as much with opened as closed eyes, without any difficulty, reaching the score 4.

It was possible to notice through the "Walking by side" test (graph 06) that, as much with opened as closed eyes, there was not any difficulty during its accomplishment after the treatmente (score 4). However, before the Hippotherapy, the patient presented a few difficulty with opened eyes (score 3) and moderate difficulty with closed eyes (score 2).



Grafh 06: Walking by side test

During the "Walking backwards" test it was possible to notice that before the treatment the patient reached the score 2, in other words, with few difficulty, and after the treatment the test was accomplished normally (score 4), as much with opened as closed eyes.

The "Marching in the same place" test with opened eyes was accomplished before the treatment with few difficulty (score 3) and with the eyes closed with moderate difficulty (score 2). After bthe treatment, both exercises were accomplished without any difficulty (score 4).

The test "To initiate walking and to stop it abruptly" test with opened and closed eyes were concluded after the Hippotherapy treatment with few difficulty (score 3); before the treatment with opened eyes the patient reached the score 2 (moderate difficulty) and with the eyes closed he got the score 1 (great difficulty).

It is possible to observe through the grafh 07, which refers to the "Walking in circles" test, that in the clockwise and anti-clockwise with opened eyes the patient concluded the exercise with few difficulty (score 2) before the treatment, and after it he concluded normally (score 4). With the eyes closed the level of difficulty was bigger, since before the Hippotherapy the patient accomplished the exercise with great difficulty (score 1) and, after the treatment, with moderate difficulty (score 3).



Grafh 07: Walking in circles, in the clockwise and anti-clockwise test

After the Hippotherapy treatment the "Walking on the heels" test with opened and closed eyes was accomplished by the patient with few difficulty, reaching the score 3; before the treatment this exercise was concluded with great difficulty (score 1).

Through the comparatives results between the first and the second evaluation on the baropodometer device, it was possible to observe that on the right foot, after the Hippotherapy treatment, the patient presented a better weight distribution, pressure in lateral region, decreased the pressure on the heel, decreased on the Hallux pressure, and besides that a little increase on the weight distribuiton of the metatarsus region. On the left foot, after the Hippotherapy treatment, there was a reduction of the pressure on the heel, as well as on the lateral region of the foot. The patient presented a little increase of the pressure on the metatarsus region, mainly on the region next to the fifth metatarsus. Even after the Hippotherapy treatment, the patient did not pressure in the fingers' region of the left foot.

It is also possible to notice that the gravity center presented a variation of 17.4 cm to 14.7 cm, in other words, it occured a reduction of the sustentation base.

Picture 01: Evaluation of both feet of the patient J.L.S., on the F-scan baropodometer device, accomplished before the treatment.



Picture 02: Evaluation of both feet of the patient J.L.S., on the F-scan baropodometer device, accomplished after the treatment.



CONCLUSION

The Hippotherapy treatment provided to the analyzed patient great improvements in relation to the balance, motor coordination and plantar support distribution. It was also observed improvement on his quality of life, as well as an increase of self-esteem, according to the follow deposition, given by the patient:

"I liked very much the opportunity I had, because I could know and practice the Hippotherapy treatment. Besides being funny, it was very good for my motor recovering as well as for my emotional problem, since I was almost depressive and now I am really better (...). This period that I could practice the Hippotherapy was worthwhile, it helped me a lot".

This research showed that the Hippotherapy treatment can provide to the oncological patients improvement on their quality of life and, consequently, increase of self-esteem and confidence in their own lives.

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THE USE OF THE SUPPLEMENTARY AND/OR ALTERNATIVE COMMUNICATION (S.A.C.) IN THE « EQUOTERAPIA »

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Introduction: The objective of this presentation is to contribute for the process of normalization of the people with special needs that, for several reasons, there are limited options to communicate effectively through speech or written natural. The recent therapeutic and educational approaches are based on the qualification concept, having established the interest and the recognition of the individuals differences and the acceptance of new forms of communication and social participation, to be able to offer to the handicapped people the place that establish them in all the scopes of life. These approaches support that the intervention must be directed to the person in the environment. In the "equinotherapy", a stimulatory way of interaction, contact and communication, that will be able to obtain the maximum development of the abilities of the people with deficiency, making this so pleasant half a springboard for the use of the communication in a large social context, through intervention strategies using the S.A.C.

Definition of S.A.C.: It is an area of clinical, educational performance and research that the objective is to compensate and to facilitate (temporary or permanently) the damages or incapabilities, of individuals with serious troubles of the expression of the communication and/or troubles of the comprehension. (ASHA, 1991).

Who is benefited with the use of the S.A.C.? Patients with speak verbal disturbance: PC, autism, brain injury (temporary condition after-accident with reversion possibility), vasculary cerebral accident (stabilized condition or irreversible neurological clinical diagnostic) and degenerative condition (degenerative pathologies, Parkinson...).

Systems of Signals and Techniques: The systems of signals and the aids are diverse techniques for the available SAC currently, in order to adapt it the necessities of a population with characteristics and necessities very diversified, as the ones that we have in the Cepom-pe. In Brazil the use of the C.S.A is limited; therefore few professionals have access to the knowledge of this technique. The system of signals more used in our country, Europe and the U.S.A. is PCS (Pictures Communication Symbols) and is what we also use in the Cepom-pe.

SPC (System Pictographic of Communication): PCS ^a (Mayer Johnson, 1981, 1985, 1989, 1992) it is a pictographic system, therefore it uses symbols, iconic, easy to learn and to memorize. Account with a vocabulary of 3.000 symbols divided into 6 categories (personal people and pronouns, social verbs, adjectives, adverbs, substantives and terms). Its use is indicated for different age's groups and deficiency.

The Use of the SAC in the "Equinotherapy": The taken qualifying measures for the use of the CSA in the Cepom-pe will be presented through photos (slides), during the practical sessions,

as: adequacy of the physical space (accessibility of the materials, use of the materials...), the aids techniques (adapted boards of communication, toys, portable vocalizers...), using high or low technology on the horse and with the horse.

Conclusion: With the present work I search to implement new possibilities to promote the integration social of people who for some reasons do not communicate for speaking , using the environment of the "equinotherapy", for reorganizing it with some practical ideas on simple adaptations that we can create with easiness, generating resources actions for the people with special needs, offering inestimable chances so that they are active protagonists, so that they get experiences and, decide, that they are able to communicate.

THE WORLD OF HORSES: A POSSIBILITY FOR TEACHING LITERACY

Author: Nilce da Silva - Brazil Co-author: Birgit Gisela Marica Von Pescatore da Silva Araújo e Raquel Y. Arantes Baccarin

"Horseman and horse form a centaur-like unit, like man and his shadow, the superior and inferior man, or the awareness of the self and the shadow (...)".

Jung

"It is by educating the horse that the horseman educates himself: it is in the game of subtle reflexes, in the sensibility of the approximation movements, in the exchange of thrills of instinctive empathy and in the harmonization of the rules of domination that the most delicate underpinnings of an education solidly based on the laws of nature come true."

C. Freinet

"A confident man makes a confident horse".

Ancient Proverb

1. INTRODUCTION

The importance of the relation between humans and horses was revealed to us back in 377 B.C. by Hypocrates. Inspired and intrigued by the statement of the Father of Medicine, we will present thoughts that resulted from the research, teaching and an extension project on development entitled *The World of Horses: a possibility for teaching literacy.*

One must stress that within the setting of Brazilian education, student success comes about unevenly in the different socio-cultural groups that make up the student population and that it is influenced by macro-structural aspects, such as social conditions and the type of socialization that children and adolescents experience within their family, their neighborhood and the group with which they interface, and by micro-structural aspects, such as individual learning difficulties. Furthermore, as has been broadly publicized both in the academic milieu and in the press, many children collect a series of failures during the course of their student years.

Within this context, one fact has been drawing the attention of researchers from different areas: the expansion of the locales in which educational practices are conducted. They currently extend beyond the school circuit, evolving more decisively to the occupation of new socio-cultural arenas.

¹ Term used by Biarnés that comprises the idea that the difficulty / repression of individuals concerning literacy is the consequence of "a broad system of various significances which the 'subject in relation with his environment' attributes to his own relation with literacy" (1998), i.e., that the problems of teaching reading and writing go beyond understanding and association difficulties.

² In the works of Jung, we find vast and interesting studies on the 'mother' archetype. We strongly recommend their reading.

³ The mother archetype takes up a great deal of the work of C. G. Jung. We recommend reading his writings.
To this situation one must add the fact that daily life, especially in cities such as São Paulo, draws us further and further away from nature, so that we become increasingly removed from ourselves, given that we are part of nature.

These are the issues addressed in this study, since its chief objective is to fulfill the social and educational needs of the needy population of the Campo Limpo district of the city of São Paulo and to understand it, by establishing closer and more participative relations with it – a characteristic of the investigation methodology adopted, research-action-education – in association with the School of Education and the School of Veterinary Medicine and Animal Science, both of which are part of the University of São Paulo, and with the Hípica Recanto dos Cavaleiros riding center, a place that offers outstanding contact with nature.

Basically, this project involves contributions from the following authors: D. W. Winnicott; C. G. Jung and Paulo Freire, combined with considerations that result from the practice of hippotherapy.

Thus, we will present below, albeit briefly, the key concepts of the authors that provide the groundwork for this project, as well as contributions from hippotherapy. Finally, we will discuss our final thoughts on the possibilities and limits of teaching literacy through the "World of Horses".

2 THE "CREATION SPACE" AND THE IMPORTANCE OF THE HORSE AS AN "ARCHETYPE" OF THE MOTHER IN LEARNING THE MOTHER TONGUE.

The current situation of several children that still reach the last few years of the first cycle of Fundamental Schooling with *a-functional literacy skills*¹ shows how this is a serious educational problem in Brazil, as students complete their basic education without truly gaining access to the functional world of literacy and, furthermore, without the school even becoming aware of this. When the fact is noticed, the students may undergo several processes of exclusion and discrimination, being labeled as failures, *problematic students* and frequently as incapable of learning. This situation results from several factors, ranging from a lack of continuity of public policies to an accumulation of failures at school in the life of these students, which corrodes their self-esteem and thus the possibility of learning.

Classical Pedagogy authors, specifically from the New-School movement, as early as the beginning of the last century, presented *nature* (see the works of C. Freinet) as a *center of interest*, a concept developed by O. Decroly as being highly effective for promoting learning among children.

In line with the studies of these "great pedagogues", we add the contributions of Psychoanalysis, more specifically of C. G. Jung and D. W. Winnicott, especially for justifying the choice of the "horse" among the generous range of alternatives that nature offers us.

Swiss citizen Carl Gustav Jung warned us about the existence of the *collective unconscious* – a concept that refers to the set of learnings of the human species over the course of time and that we inherit individually. Mythological themes, legends, stories, i.e., the spiritual inheritance of each culture, constitute *archetypes* that once crystallized organize our unconscious content and finally represent it, taking on shades that vary according to our individuality and that are reborn, in this way, within the singularity of each person.

In Jung's words, we clearly perceive the importance that he ascribes to the 'horse'.

"'Horse' is an archetype that is widely found in mythology and folklore. As an animal it represents non-human psyche, the infra-human element, the animal portion and, therefore, the unconscious psychic portion. Therefore, we find in folklore "clairvoyant" and "clairhearing" horses that sometimes even speak. As beasts of burden, their relation is with the archetype of the mother and of the women to whom one is close (the Valkyries that carry the dead hero to Valhalla, the Trojan horse, etc.). As men's inferiors, they represent the belly and the instinctive worlds that come from it. The horse is 'dynamis' and vehicle; we are carried by it as if by an impulse, but like all impulses, it is subject to panic, because it lacks the superior qualities of conscience. It has something to do with magic, i.e., with the sphere of irrational things, of magical things, especially the black horses (of the night) that announce death". (Jung, 1987, p. 96).

We will not be short of opportunities to deal with stories, legends, religious narratives and folklore, such as horses with magical and curing powers among the Buryats, the story of the mythological Pegasus, the story of Brazil's independence, with D. Pedro on his horse by the banks of the Ipiranga river, several stories about horse-back tournaments and pilgrimages, biblical narratives that show us the relationship of the son of God with the donkey, the story of Alexander's horse Bucephalus, the legend of the unicorns and the myth of Odin, whose mother was a frightening mare, among so many other equally fascinating tales. For the purposes of this article, we hope we have managed to clearly establish a parallel between the mythological theme (archetype) – HORSE – and different human cultures.

However, still according to Jung, of all the possibilities that we have presented thus far, one has been the particular object of our reflections: the HORSE as the representative of vital force, such as the MOTHER² and, moreover, the way in which it carries a human being, which implies, yet again, in the MATERANL FIGURE. Jung states: *"This being the case, the 'horse' is something equivalent to 'mother'*³, with a slight difference in the nuance of the meaning, one being the giver of life and the other purely corporal animal life." (Jung, 1987, p. 97).

In our study, in referring to the mother-child relationship, we could not fail to associate certain of D. Winnicott's basic concepts with Jung's assured quote above. For our purposes, Winnicott's concept of *creation space* is indispensable.

According to Winnicott, in the first few weeks of this act, the baby thinks that it is the mother's very breast, because when it is breast fed its satisfaction is total and uterine; in other words, its feelings are of completeness and satisfaction. Little by little, as a result of the growing distance between the baby and the mother and the entire process of neurological development that the baby goes through, the infant begins to realize that the mother's breast is not always available and that, therefore, the mother's breast is not him, the baby.

The distance between mother (external reality) and baby (inner self) was defined by Winnicott through the concept of *creation space* or *potential space*. To the extent that the baby perceives that he is not the other and that there is 'space' between him and the mother, a space both physical and temporal, or, moreover, that the mother is a reality external to him – the baby makes countless attempts of fill this 'space' and to reduce his anguish in waiting for the mother's breast. To fill this space, the baby must 'invent' something, to find a 'substitute' for the mother while he waits; in other words, the baby will need to CREATE so as not to suffer.

And thus the baby, while his mother does not come, is kept content with a bottle, with a pacifier, with a piece of cloth or even with his thumb. These 'objects' that fill in the time between the baby's waiting for his mother and the mother's arrival, objects that minimize anguish, were called 'transitional objects' by Winnicott, and the awakening of creativity for solving the anguish of separation was labeled 'transitional phenomena'.

One must understand that the 'transitional objects' do not belong entirely to the baby's interior reality, but they do have a direct influence on it; neither do they properly belong to the external world, because they are substitutes for the mother that the baby still believes is a part of himself.

According to Winnicott, this situation of 'illusion' – when the baby thinks that the mother's breast is himself and the situation of 'disillusion' – when the infant realizes that the mother's breast is not available all the time, repeats itself in the relation that the human being establishes during the course of life between 'himself' and the reality external to him. This being the case, for this human being to become healthy, he must 'create', and produce 'transition phenomena'. Only in this way an internal dialogue can take place, which will make each human being more tranquil vis-à-vis the eternal question that forever accompanies us: *Who am I*?

"Creativity is maintaining throughout life something that belongs to the experience of childhood: the capacity of creating the world." (Winnicott in Dias, 2003, p. 170).

Thus, in this bold synthesis, we understand that the HORSE, due to its occupying the same position relative to human beings as the MOTHER *archetype* and, furthermore, for being a *transitional object*, has a dual quality as facilitator for teaching the mother tongue, both written and spoken.

In sum, (...) during the development of the ego, in the matriarchal stage, the child feels the mother's body as an extension of its own. In adult life, this may continue and be projected on the horse. By carrying the horseman, this animal – like the mother used to do with the child – rocks him and reminds him of childhood memories and sensations. Thus, it becomes a mother substitute, as an extension of the horseman's body and libido. (Ramos, 2005, p.87).

2.1 THE INSPIRATION OF FREIRE AND THE VOCABULARY UNIVERSE OF THE WORLD OF HORSES.

These thoughts having been voiced, pertaining to the underpinnings of the pedagogical practice of the person engaged in teaching literacy, we will now focus on complementing our exposure to the light of the works of Paulo Freire.

This great Brazilian educator states that the process of teaching literacy is comprised of a *dialogue* between the educator and the student. Thus, one must teach literacy based on the speech of ones students. Consequently, many school books, reading primers and other materials used in the educational environment are empty and senseless from the standpoint of those who are in the midst of the process of learning how to read and write. In order to avoid incurring in such a lack of interlocution, Freire proposes that the work of the educator begin with research of the vocabulary used by the students, which is bound to be the result of the local reality of which they are part. Based on a survey of these words, the educator –

taking into account the phonemic and phonetic wealth of the word and its potential for fostering political-social discussions among the students – selects approximately 25 words, *generating words,* that will serve as the guideline for the process of teaching and learning of the group of literacy students.

In the case of this work, as Freire indicated, we could have put ourselves in the day-to-day lives of these 80 students from the southern part of the city of São Paulo and, through the vocabulary used by them, taught them to read and write, in the way the Master taught us. However, although respecting the work of the Great Educator, we preferred to innovate and to put these students from municipal schools within the world of horses, a new world, even in terms of vocabulary, and to use this new socio-cultural universe of insertion to present and construct a vocabulary universe together with our students.

From this socio-cultural reality, we found ourselves face to face with tales, legends, stories and myths in which the protagonists are HORSES (*mother archetype*, as we must keep in mind).

Thus, we initiated the pedagogical work of teaching literacy, strictly speaking, with the stories of the actual horses of the *Recanto dos Cavaleiros* riding center. In other words, we collected this material, transcribed it, trying to follow the lines of the *fantastic tale* or *chronicle*. These "heroes" were also drawn and transformed into another type of text: *comic strips*.

Once this material was ready, the Portuguese language content started being included, together with the riding lessons attended by our students, through didactic activities that favored both effort and persistence in order to be completed, as well as the fun aspects of the task, and, moreover, fostered conditions for creativity to surface, always taking into account the phonological, phonographic, semantic and morphosyntactic aspects of the Portugese language.

Everything indicates that, as from the second half of this year, we will be able to continue our work using stories of horses from "other times" and "other places", which will constitute our essential work object.

3 FINAL THOUGHTS

Up to now, we hope we have explained why the HORSE, from the points of view of both psychoanalysis and the Freire approach, is the ideal figure within the context of literacy teaching.

Additionally, and no less important, we would like to take into account that the studies and results of hippotherapy are extremely important for the objectives of this project.

We have limited ourselves to writing little, but we point out that one of the fundamental aspects of hippotherapy, or even of the work carried out with horses, is the establishment of a certain ritual, such an important thing for human beings, because it belongs to the world of sacredness, but which, unfortunately, is removed so abruptly from daily practice in the first years of schooling. We are referring specifically to the long-expected graduation at the end of the fourth grade, which used to be a milestone indicating when a person moved into the world of readers.

In the work we carry out, the children arrive, "talk" to the horses, prepare them for riding, relate closely to them during the riding lesson, bid them farewell and then have the opportunity of hearing stories about them and of drawing pictures of their own adventures with the horse, among other activities that, with the passage of time, will become a routine that will enable the establishment of a bond between the horse and the horseman. In other words, paraphrasing the title of this event, there will be a meeting between two friends.

In an attempt to summarize the benefits of Hippotherapy, we recall Opinion 06/97 of the Federal Medical Council, dated April 9, 1997: "Hippotherapy is a therapeutic and educational method that uses the horse within a multidisciplinary approach, in the fields of healthcare, education and riding (...)".

In other words, the work presented here, which is still underway, will seek to encourage self-confidence, self-esteem, speech, language, tactile stimulation, laterality, color, spatial and temporal organization and orientation, memory, visual and hearing perception, direction, analysis and synthesis, thought process, and many other cognitive aspects and the acquisition of Portuguese reading and writing skills among the involved students. We will try to provide our students with the possibility of raising their self-esteem, building friendships and exercising behaviors, such as: helping and being helped, working with people whose pace is different and accepting their limitations.

Finally, when we study myths, legends and fantastic stories with our students – concomitantly with the riding lessons – we intend to present clues for the organization of the unknown unconscious of each one of them. Perhaps after this work is completed, or so we hope, each of the involved parties will perceive that life is worth living, despite the difficulties that it imposes upon us.

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A HORSEBACK TOUR - AN ENCOUNTER WITH NATURE AND ART

Author: Anna Strumiñska - Poland

When we organized lasting a couple of days horseback tours for the charges of the Handicapped Children Aid HIPOTERAPIA we were curious to know how the mentally retarded, autistic and emotionally disabled people would manage in such unknown and difficult circumstances. However, primarily we were focused on offering them authentic, emotional experience related to horses and Nature. A horseback tour gives a chance for a real adventure, is a source of knowledge about the surrounding world and arouses passion for learning accompanying every traveler. A real traveler should quickly learn habits strange for him, easily accommodate to new conditions and skillfully overcome unusual obstacles. Our goal was to teach our charges these skills, so useful not only during this kind of trip but also while traveling on the life paths.

The horseback tour to be described here took place in the autumn 2004 and its participants were young people aged 13 to 16. The group had over a year long experience of work in the stables and they practiced horse riding while attending Saturday Riding Club for The Disabled organized by our hippotherapy centre. The group consisted of three girls with moderate mental disability, including two with the Down syndrome, and two boys, one with the Asperger syndrome, the other with emotional disorder. They were accompanied by four hippotherapists, graduates of pedagogy, psychology and rehabilitation.

Our tour was organized basing on the horses and the assistance of tourist farm close to eastern border of Poland. The first day was as usually devoted to adjustment to new conditions and situation, test rides and horse selection. The stable and kitchen duties were distributed among the participants. On the second day we set on an 18 kilometers tour to a forester's lodge. We were accompanied by a horse driven cart with our luggage and a guide who knew the way. The members of the team were riding their horses by themselves, though for the security reasons the horses were additionally led by the therapists walking by their side. We had plenty of time to admire the route through the magnificent forest full of old majestic trees, blowing wind and the singing of birds. There were some rests, not only for the people but also for the horses. We could share our impressions of the whole day by the fireplace in the evening. On the following day we had to get back taking a longer 20 km route, again full of impressions and, it seems, more exhausting. We were heading towards our farm as a familiar and safe place. After we reached our destination we had some time to work on our fresh experience, drawing, writing short poems and designing the ride T-shirts.

Let our young riders take the floor. The poems they wrote during these few days reflect most adequately the mood and the emotions they experienced.

No doubt, that the horses are the most important during the horseback tour, and ours were perfectly prepared so that our riders felt safe and competent on them. The poems devoted to our companions reflect this relation.

Horse Horse, Experienced, wise, Jumps, gallops, neighs, Softly, loudly Horse.

The participants of the first horseback rides we organized were afraid of their horses. It could be seen not only during the rides themselves, but also on the pictures showing the horses as toothy monsters with small helpless humans sitting on their backs. The second group saw a horse as an experienced, wise, patient and even smiling creature. A rider on its back seems competent and satisfied. Indeed, the riders while on horseback reacted adequately to the situation and skillfully took care of their horses after the tour came to its end.

The forest we were crossing during the vast part of our trip evoked slightly different feelings. The Knyszyñska Forest is truly impressive and the hours spent in the saddle without seeing human settlements might appear scary for the youngsters brought up in a town.

Forest

Forest, Deep, dark and scary, Grows, gets wet, rustles, Slowly, loudly with a deep voice, Forest.

Trees

Trees, High, full of branches, Scare you, wave, and warn you in the night Because of the wind, Trees.

However, some of the ride participants noticed therapeutic and relaxing properties of the forest and the trees.

Forest

Forest Evergreen, wide. Rustles, develops wisdom, Calms down memories, Forest.

Trees Trees, Tall and small, Drink water, give oxygen and joy, Trees. How did the participants of the ride assess the journey itself, crossing time and space, riding on horseback in the pace allowing to observe the passing images and phenomena? What kinds of emotions were accompanying their discovering the world and themselves?

Travel Travel, Long, happy, Moving, passing reaching, All right, we are home, Travel.

As can be seen the journey evoked many positive emotions in its participants, but its vital element was in the majority of cases the return home. "Home" was our safe and well known farm, but not only it. Primarily, it was the family house appearing from there as an oasis of peace and security.

Here, we reach the point to have a closer look at the members of our team. Let us again listen to them talking about a human being, with an autobiographic hint between the lines.

Man

Man, Small, curious, Drinks, eats, excretes, Dreamer, man, woman, Man.

This is Marta, small and curious, absorbing the school knowledge but also everything happening around her. She likes lonely mornings by the burnt out fire and talking with a dog, rabbits or her horse. Marta says she is a boy, and she tries to behave and dress accordingly. She is impressed by adult men, like her father, but also those met during the tour. In her dreams she is not a woman, but a big and strong man, and certainly she has no Down syndrome. Without overstressing it, we treated Marta as a girl and we tried to reveal to her the advantages of being a woman, and particularly being an independent and strong woman.

Man

Man, Ordinary, smiling, Rides, picks leaves for horse, Looks straight over ears of Galicja, Man.

Monika was like that during the tour, but not from the very first day. The beginning was tough. Monika did her best to draw our attention to her. She uttered strange sounds in the car right after we set off, then she kept complaining about her sore throat and cold. However, she quickly forgot about her complaints. She was one of the most persistent chronicles and proved really diligent in keeping a travel journal, the task more or less effectively carried out by all participants. Monika's journal was unusually detailed and neat. She finds it difficult to speak as her speech is indistinct, but what she wants to say is mature and interesting.

XII INTERNATIONAL CONGRESS OF THERAPEUTIC RIDING

Also, she was very independent, as far as self service and the activities connected with traveling are concerned, e.g. while packing her things she remembered every item and managed to pack back everything very neatly in her suitcase.

Man

Man, Grumpy, lazy, Is sleepy, looks at screen, dreams Sometimes in the future in front of the fireplace, Man.

Luckily, it was not this bad, although Ula was one of the less active participants of the tour. All the duties assigned to her she performed conscientiously, but showed no sign of own initiative. With one exception. It was her, who 'in the act of revenge for Monika's misbehavior' devised a scheme against her and Marta, as a result of which Monika's glasses were burnt in the fireplace. Marta threw them there, so Ula still feels no guilt, but she had to admit that after the glasses were taken out of the fireplace they could not be used any more.

Man

Man Good, nice, Cleans horse saddles Precisely with care Man.

On the surface it was Andrzej. He expressed no initiative but usually was sitting somewhere on the sidelines with a mysterious smile on his face. When asked he would carefully carry out his task, "normally", as he used to repeat the word in his poems, but a little automatically. Andrzej was the person with the most serious problems concerning integration with the group. There were some factors influencing it, like a bag full of food he had been given at home, which he took out during the meals and some habits, including the evening reading that he would prefer to the company of the group. All the time he was talking about coming back to Warsaw. The five day stay away from home and the horseback tour was undoubtedly very hard for him. It was the first time he left home without his family and the amount of things changing around and the phenomena he noticed sometimes surpassed his limits. As the only one in the group he announced he would never again go anywhere with us.

The last participant of the tour I would like to introduce is Filip.

Man

Man, Disabled, delicate Thinks slower, has feelings, Suffers in solitude without words, Man.

Filip is a sensitive and intelligent boy. He was deeply impressed by every day encounters with the other members of the group. We know him as a very disciplined horse rider during the therapeutic horse riding. During our trip he was asked to help other riders less competent

than him and he was a keen helping hand showing his initiative. On the other hand, his poem revealed the dark emotions he was going through during the difficult period of adolescence. His state of mind surprised and horrified us. The journey and the track the others treated pretty naturally in their poems, for him was the track and the journey through life, difficult and dramatic, full of existential fear and a sense of helplessness.

Travel

Travel, Between words, without destiny, Cries, tries to get a grip, waits for bread Patiently with hope, Travel.

Road

Road, With pain, recognized, Long one, full of mysteries, In poverty bringing up a child As a good man, Road.

Trees

Trees, Fallen, without life, they are burdens for earth, Decompose after death, Trees.

Fortunately, even in these poems we can find a trace of hope for the better future ("waits for bread with hope") and faith in positive effects of the educational process ("brings up a child in poverty to be a good man"). Thus, Filip avoided the extreme pessimism shared by most existentialists.

These five days spent together made it possible for us to learn more about our charges. They surprised us with their maturity, complexity of their thoughts and experiences, as well as the creative powers dwelling in them.

We have no idea if thanks to this journey they would smile more often. We do not know if they would trust in themselves and if other people would trust them. We do not know if it would change anything in their difficult lives. All we know is that it was worth trying.

YOUR HORSE, YOUR FRIEND

Author: Maya Boss Jaccard - Brazil

FRIENDSHIP = UNDERSTANDING AND COMUNICATION

In the end of the 19 the century, with increasing mechanization, some models of mechanical horses for therapeutical use had been developed constructed. But soon was discovered that the essential element for equotherapy was missing: the emotional and affective involvement and all its benefits: motivation, joy of living, the opening of a new world through the relationship with an alive being of another specie.

The millenarian fascination of man by the horse is an important element in equotherapy as in modern society. A society that suffers every day more from the isolation of the individual, where we all are carrying special necessities. This fascination is ambivalent, composed of attraction and fear, richly documented in art, legends and mythology.

The changing of the utilization of the horse, affected our relationship. After centuries considered a dangerous transport, that needed to bee dominated by mechanical means, to guarantee military efficiency, started an exaggerated anthropomorphism, an equal unrealistic "humanization", projecting into the horse human feelings and reactions.

The professional who works with horses has no right to stay in the field of fascination, fantasies, traditions or the projection of his owns feelings and conflicts. As we will see ahead: the horse, with its sharp perception and high sensibility, is a true mirror of the persons who work with it.

As well known, Equotherapy is relatively expensive compared with other therapies. It always will bee as good or bad as your understanding and relationship with your therapy horses and theirs physical and emotional welfare. Therefore we will invest time and effort to know and understand them better.Without this, we better remain in other therapy modalities. We can only speak of real equotherapy when we go beyond using the horse as mere gymnastic device, and discover it's immense potential to open new horizons, as much for the patient as for the therapist.

Only when there exist **UNDERSTANDING AND COMUNICATION**, we can speak about contact between friends or friendship.

We can observe a spontaneous communication and communion between children and horses, much better than with adults: it is intuitive and without prejudice. Maybe we belong to the few happy ones, that maintain this communication, or we must learn to replace our preconception by correct concepts through observation, reflection and study.

Ethology understands behavior from a **biological** point of view: the necessity for survival. If a specie developed certain behavior, there always is a reason that proved useful for the survival of the individual or the species. If an individual does not live according to his genetic program, his live becomes endangered. The visible consequences are health- or behavior problems: Behaviors we call **inadequate**, which can even bee fatal. In reality the are security –valves or defense reactions to **inadequate environment** modified beyond the limit of tolerance.

The domestication of the horse is discussed between 6-10.000 years, so very recent in evolution terms. It did not change the instinctive behavior since the wild or natural state: always ready to fly in panic.

The ethological study in the **natural environment** permits to establish the ETHOGRAM of the horse: an inventory of the instinctive behavioural repertory, showing its **potential**, **limits and instinctive necessities.** We should never get tired, trying to understand better, ampliate and analyze the ethogram of the horse, in order to know the physiques, physiologiques and psychiques basics reasons for it's behaviour. The horse will always follow its genetic, instinctive program. So from the biological or ethological point of view:

THE HORSE HAS ALWAYS REASON

A small extract of the

ETHOGRAM OF THE HORSE

CLASSIFICATION		CARACTERISTICS	CONSEQUENCES
MAMMAL:	CNS:	MESENCÉPHALUS \ LÍMBIC SYSTEM /	very well developed - Affectivity possible
(The wh	nole neu	ro- and senso-motoric syste CORTEX: proportionally	em is extremely developed and fast) small:- associative - not causal reasoning
HERBIVORE: no	t aggres	sive, without natural defen	ses > "ESCAPE - ANIMAL"
			- Great motricity
			- High perception of minimal signs of danger
	VISIO	N: Independent:	- Laterally separated eyes
			- NO global vision or global comprehension
			- Remarks details
			- Without symmetrical transference
	Witho	ut gradual focalization:	- 2 points of focalization
			NEAR: front of mouth for alimentation
			DISTANT: approach of enemies
			(to adjust focus, it needs to raise head = alert)
	Impre	cise:	- brusque movements scare
SOCIAL:	GREG	ÁRIAN LIFE:	- The herd gives security and Affective relationship
			- Communication through body language
			- Few sounds
			- HERD CODE
HIERARCHY:			- social structure guaranteed
			by space structuring

DOMESTICATION: Neotaenia, maintenance of youth characteristics: allowing **LEARNING**, even as adult

Let us analyze just 3 factors, that influence our work:

- I THE NEUROLOGICAL SYSTEM
- II THE WAY OF ALIMENTATION
- III SOCIAL LIFE

I NEUROLOGIAL SYSTEM

Observing the **brain of the horse**, the amount and depth of the "gyros"(turns) call our attention, contrasting with the popular opinion, that the horse is not very intelligent, especially less than the dog. The brain of the dog shows much fewer and flatter turns.

This aspect of the horse brain leads to questions about our intelligence test. We need also to remember that intelligence depends not only of the cerebral potential, but also of the possibility to develop it, of the stimuli and of the environment.

If you remember the isolation cells (boxes), where most of our modern horses are forced to live, frequently dark, without stimulation and any social contact, I would like to ask you: what degree of intelligence would you bee able to develop in these conditions?

Also let's compare this life with a "dog-life": the dog since puppy lives a big part of the day with human contact and in the relative freedom of a house or outside. So the possibilities to develop its intelligence are much better.

Danièle Gossin in France taught her horse more than 500 verbal commands, more than the signs for hearing-impaired in the famous experience with the chimpanzees of the Gardner's. The cerebellum of the horse is also very developed: it is responsible for locomotion, coordination, equilibrium and the para-sympathic functions. Also is its mesencephala: this allows affectivity, the establishing of bonds and a memory, which is excellent. This makes routine and habituation so important for the horse and for a good collaboration.

The same happens with the olfatic lobe, is very intimate connected to the hypophyse which commands the hormonal and so the emotional system. Therefore we can say: the horse believes not seeing but SMELLING.

Let us analyze the receivers of the external world: the 5 SENSES:

VISION: the horse's eyes are quite different, proportionally the greatest of all mammals. The ziliar muscle is little developed, using other ways of "accommodation" as rise up or lower down its head. The lateral localization (common to all herbivores) possibilits a monocular view of 330 -350 °, allowing simultaneously the distant survey for the approach of eventual predators, and the nearby pasture. There are only two point of acute vision: distant or nearby – everything else looks "vague", of focus, perceiving only movements. The great eyes with their "tapetum" multiply light incidence, allowing good night vision. There exist cones and pigments, letting assume colorful vision.

HEARING: is the **"radar"** of the horse, surveying its environment 24 hours a day. Each ear posseses 13 pairs of muscles, allowing independent movements, a perfect control of the environment, and a very precise communication through "ear-language".

I could find no tests that precise the frequencies horses can hear, but we know, that it can recognize voices of different persons or horses. Also distinguishes different sounds and words, and so can bee trained to verbal commands.

SMELLING: is extremely important, with enormous nasal cavities, covered by multiple layers of olfátic mucous membran.

TASTE: The horse distinguishes the same 4 basic tastes as humans: sweet, salt, sour, bitter. It likes things that for us seem bitter. There are few tests, but taste must be very important, as the horse has no possibility to vomit if it ingests something inconvenient. In nature it searches quite balanced nouriture, including sometimes bark of trees for minerals. We do not speak about over fertilized pastures....

TACTIL: very developed, great sensibility over the whole body.

Once mounted our communication is not only in a kinesthesic way, but also senestesic: through the tactile sensibility. So remember: the finer our communication is the better and more precise will bee the answer. The more we use rudeness and mechanical force, the more the horse will become hardened, resistant or even rebel.

Resuming: before we question if the horse has a sixth sense as some other animals (like the sonar of the bats or the polarizing vision of the bees) we know for sure, that the perception of its five senses is much sharper than ours. The horse as an animal of escape needs to react **imeadiatly**, mainly at the instinctive level of its genetic program: if we remember the evolution of the brain: at any sign of danger, when survival seams endangered, all the later, superior levels are blocked out and the brainstem takes over. That results in an extremely fast reaction and no possibility to relay on learned schemes. So it can happen, that for example during riding, when we **realize** hearing a scaring noise, we are already sitting on the ground.

The horse weights between 300 and 500 kgs (600-1000 pounds), we from 50 -100 kgs (100 - 200 pounds). So we better use our **brain** to prevent dangerous situations, than our "force": we can sharpen our perception, improve our understanding and communication, but most important: we can increase the horse's confidence in us (the way, we will regard ahead), and in the environment by habituation, improving its **emotional stability** and raise its level of tolerance.

II THE WAY OF ALIMENTATION has a great influence on the behavior of a specie. So we never should forget that the horse is an herbivore, ONLY HERBIVORE.

That means: a laborious, systematic and pacific collector, who needs tojoin enough vegetables to supply its dairy nutritional and energetic needs.

1) The digestive system of the horse compels it to collect and ingest small amounts of food during 16 - 18 hours a day, moving forwards constantly, with more than 30.000 chewing movements. What happens, when deprived of this strong, instinctive need, you can observe

frequently in stabled horses. Therefore the adult horse has nor time nor energy to waste in unnecessary running. With exception of the young, who have milk as richer nourishment, therefore more time available to run and play around for improving their physical abilities. 2) In the alimentary chain the horse is always a hunt, a target or victim. Other species have weapons as horns to fight for survival. The horse has nothing but **ESCAPE**.

High speed, hard shoes, permanent alert and perception of the finest signs of danger in the environment are THE BASICS of its instinctive survival program.

THE GENETIC PROGRAM OF THE HORSE HAS NO AGGRESSIVENESS

PERMANENT ALERT/ FEAR ARE THE FOUNDATION OF SURVIVAL

Any action that to us may seem aggressive is only defensive. After many bad experiences, the horse can learn to anticipate this defense.

The horse possesses not even intra - specie agressiveness to defend its territory. As a nomad animal it carries its "**impenetrable**", **individual space** like a protective "bubble". The stallion marks the territory, which the herd is occupying temporary, with volatile pherormones, to prevent the invasion of other herds at the same time.

Inside of the herd, violation of the individual space are prevented by ritualized gestures or virtual threats, that seldom materialize, or only with improper human interference. Even the fights of stallions for the "ownership" of a mare, often remain in the ritual field. When they pass to real fights, they serve to establish the hierarchy. As soon as the looser emits submission ritual, this is accepted and it may remain in the herd. Important wounds are rare and death only accidental.

The behavior of the carnivore is completely opposite: aggressiveness is essential for hunting, though for survival. Hunting demans focalization, planning and an intensive effort during a short time. With the hunger satisfied, it can rest one or several days. Often we can find a common, joint action of the group of hunters, that developes causal reasoning. The horse only needs to lower the head to graze, so solely demanding the associative layers of its brain.

When the carnivore smells our fear, this signals a potential hunt and can provoke an attack. When the horse feels our fear (even unconscious to our self), this means a sign of common, potential danger and provokes its instinct for escape or defense.

With or without fear, the human being as omnivore carries the resultant ambivalence: hour extremely pacific –hour extremely aggressive. Short: not reliable. As hunters we unconsciously emit many signals of aggressiveness (like standing on our hind legs, what in nature means always attack, or gesticulating with our "claws"). So our involuntary aggressive body language represents for the horse a permanent threat, causing stress and awakes its instinct of escape. When this is impossible, in the box or in a corner, it passes to attack as ultimate defense, very dangerous for all involved. So the slower, smoother and more reserved we move, the more we transmit security and confidence.

IN NATURE, WITH SPACE THE HORSE NEVER ATTACKS.

SOCIAL ORGANIZATION:

As the majority of the herbivores the horse is a social animal: the company of its herd companions tranquilizes, gives security and supplys its affective and relational needs.

In nature a lonely horse is a dead horse, as it is the first one predators attack. So the affective need is not only an affective necessity, but deeply related to the primordial need of security.

Between mare and filly or colt exist a much more intensive ties or bonds, than in other herbivoral species. Mainly two reasons make them **"BORN FOLLOWERS"**:

- 1) As animal of escape, few hours after birth, the young must follow the mother and the heard very closely to survive.
- 2) For its small stomach it needs to drink frequently, up to 8 times or more per hour, demanding the constant presence of the mother. So this follow instinct is very deeply rooted.

During all life remains this strong and narrow tie from mare to filly, which you always find in proximity, and also in a lower degree to the colt.

The matriarchal family group is the base of its social organization. Observation of the affective and aggressive interactions during nearly 300 observation hours, (by Marthe Kiley Worthington) showed in 1349 interactions, 979 friendly and only 370 threatening.

Some modern show-men speak about the alfa-stallion, in the center of the heard. This is pure fantasy. In the heard the leading mare is responsible for the order and security inside the herd. The stallion remains on the border, mostly lightly behind responsible for and surveying the outside security.

The hierarchy once established remains quiet steady, a guarantee for tranquility and the functioning of the community life, only changing with birth, illness or new comers. The young is used to it from birth, and once well established doesn't question it. When stallions reach sexual maturity, they can try to establish new authority/hierarchy, so they need a decided leader.

The young horse is very well educated by the herd members, sometimes quiet roughly, to obey instantly the miner signals of its superiors. When the yearlings (our adolescents) donn't behave properly, they are chased to the border or even pushed out of the herd as extreme punishment. This shows, wy the upbringing in a free herd is so essencial for a healthy, educated horse.

All life in community demands **communication**. The horse, threatened by inumeral predators, necessarily uses a minimum of sounds, only in extreme situations, but has developed a very rich body language. Through its very sharp perception it reacts immediately to minimal changes in attitudes or physiognomy of its companions, animal or human.

In nature only 3 FORMS OF POSSIBLE RELACIONSHIP exist:

HUNTER - HUNT	(aggressive, greed – defensive, fear)	+	-
INDIFFERENCE	(without any interest or danger)	0	0
ATTRACTION	(common interest)	+	+

During centuries men were hunting horses. We can continue on the first level of relationship as hunters / predators: a constant threat and stress to the horse, demanding permanent physical/mechanical dominance with all the danger involved when this one fails, so the horse breaks out in panic.

Or we can use the knowledge mentioned above to try to work inside the third level, establishing a positive relationship, gratifying for all involved: Therefore we need to learn the use of the natural following instinct, establishing a relationship in the role of mother – child (offering food) or as a superior of the heard. The using and respecting of the individual space (bubble) and the herd code are tools to establish and maintain the hierarchy.

Instead of "working our horse", we work on our self, observing the natural behavior and communication. So we learn to behave ourselves correctly, from an equine point of view, as leaders and not as stressing predators and to communicate clearly through a non-aggressive body language and we will win confident following horses and security for all involved.

Resuming:

IN NATURE DO NOT EXISTE PROBLEM- HORSES, NOR COLICS, VICES NOR UNADEQUATE BEHAVIOR

We create problems and unbearable condition of life for the horses. In more than 500 horses under my care in farm condition, living in groups and free on pastures, even poor, we never found one of the so frequent problems by expensive stabled horses.

As we have seen, the horse is always in danger. So not only its physical security, but also the **FEELING OF SECURITY IS ESSENCIAL** for its physical and psychological health. When we isolate a social individual, in a box, depriving it of the basic social contact, and restraining its intense need of moving, we transform any healthy individual into a psychopath.

Instead of investing in luxurious constructions and show equipment we can more efficiently invest in more space, where the horse can move free in company at least several hours every day. If we have nothing else, at least we have the working space and need only a bit more time and work. Than we invest time observing it, learning, understanding and communicating. As our master of equine ethology J.C. Barrey says: we can learn to **think horse.** I would like to amplify:

FEEL AS A HORSE OR BEE A HORSE:

A HORSE LEADER

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HORSE HIP ROTATION CHARACTERISTICS USING BIOMECHANICS PARAMETERS TO MEASURE THE HIP ROTATION OF A HORSE RIDER

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INTRODUCTION

Using the horse on hyppoterapy sections the rider establish a complex inter-relationship with the horse, comprising many factors of continuous and reciprocal mental-sensorial interchange (Giovagnoli, 2001) (Figure 1).

The dynamic balance between horse and rider elements foresee that the rider "reactions" act like inputs to the horse, which, therefore, may be able to induce its behavior or mechanical changes (Giovagnoli et al,2000).

Considering that riders with motor deficiency have some march mismatch, the horse's locomotion quality when walking and the hip rotation caused to the rider means important source to the result of the hyppoterapic programs.

During locomotion the horse moves alternating his fore legs or hind legs, and when one side protracts the other side retracts. In the sequence, the four legs change their position, and during a complete stride, the horse walking performs 4 triple stances, 2 diagonal and 2 lateral stances. Starting the movement with the protraction of the right hind (HH), the left hind (LH) retracts, moving back.

This position rotates the right hip ahead and the left hip back (Wickert, 1999).

Figure 1. Model of stimulus that the horse may transmit to the rider and its related sensorial and effects (Adaptaded from Giovagnoli, 2001).



The line between the two hips (hip length) moves together with this movement and experiments the "torsion", moving the column back to the hind leg direction. In order to complete the movement of the Center of Gravity (CG) ahead, the horse flex his neck to the opposite side (left), keeping together with the hip, the column segment over his withers (Wickert, 1999).

The measurement and use of some anatomical parts of the animal body has been considered an objective criteria for morphological evaluation (Mota, 1999). However, there is not yet a measuring objective evaluation method for the torsion or the rider's hip rotation.

The objective of this study is to fix the horse hip rotation using the horse biomechanical parameters to indirectly measure the rider's hip rotation during the hyppoterapy section.

MATERIAL AND METHODS

The experiment was performed by the Equotherapy Project Team of the ESALQ/USP – Piracicaba, Brazil, in cooperation with the Analoc-E group.

It has been used 10 horses from the equotherapy sector, with 2 Thoroughbred-Arabian, 2 Crioulo, 4 Mangalarga and 2 Mangalarga Marchador.

Using the ANALOC-E System (Toledo, 1995) to measure the stance and phase time during a complete stride of the forward movement were obtained the stride length(R) and the step length (R/2).

All horses were measured walking on a track with 10 meter of extension allowing each horse to develop 3 complete strides.

The hip length was measured with a hypometer. In sequence the equivalent horse's hip rotation angle was calculated using the formula:

tg rc =
$$R/6 G$$

(Figura 2)

were,

tg = tangent of the angle rc;

rc = equivalent hip rotation angle in degrees;

R = stride length in meter;

G = hip length in meter;

Figure 2. Biomechanical parameters used for the hip rotation formula.



RESULTS AND DISCUSSION

Table 1 shows the main parameters measured.

Variable	Sample	Media	Standart variation	Min.	Max.
Hip length (m)	10	0,52	0,02	0,47	0,55
Stride length (m)	10	1,49	0,17	1,28	1,72
Step (R/2) (m)	10	0,75	0,08	0,64	0,86
rc	10	0,48	0,05	0,40	0,54
Rotation (degrees)	10	25,39	2,53	21,9	28,4

Table 1. The main parameter measured for the walk of the horses

The hip rotation values obtained are between $21,9^{\circ}$ and $28,4^{\circ}$ (average value of $25,39^{\circ}$). Van der Linden et al (2002), in kinematics and kinetic gait characteristics of normal children walking at a range of clinically relevant speeds, found hip rotation values between 24 and 29 and an average value of 27° .

Table 2. ANOVA of the parameters measured with 10 horses used for equotherapy sections.

					QM				
FV	GL	Hip ¹	Stride	Step ²	tg rc ³	Rotation	Cadency	Stride	Body Velocity
Treatment	3	0,41	0,06**	0,16**	0,06	13,12	1.888,96**	53.124,49**	8,69**
Error	6	0,63	0,01	0,03	0,01	3,07	214,80	4,558,53	1,30
Average		0,52	1,49	0,75	0,48	25,39	156,77	788,27	7,12
CV%		4,80	6,78	6,78	8,00	6,90	9,35	8,57	13,01

¹ Estimated QM times 10⁻³² Estimated QM times 10⁻¹³ Estimated QM times 10^{-1**} Significant at 5%

The differences were not significant for hip length and hip rotation among the horse bred.

Table 3. Pearson Correlation Coefficient for the hip length, stride, step, tgrc and rotation.

	Hip length	Stride	Step	Tgrc	Rotation
Hip length		0.12571	0.12571	- 0.29763	- 0.30518
		0.7293	0.7293	0.3912	0.403
Stride			1.00000	0.90598	0.90925
			<.0001	0.0003	0.0003
Step				0.90598	0.90925
				0.0003	0.0003
Tgrc					0.99973
					<.0001

It was observed a significant correlation between rotation and stride, rotation and step, and rotation and tangent (rc). It was not observed a significant correlation between rotation and hip length.

CONCLUSIONS

According to Riede (1988) apud Rolandelli e Dunst (2003), the horse's walk movement is quite similar to the human walk.

This fact can be confirmed using the results of the present study which found an average hip rotation of 25,39⁰ measuring the walk of the horses. This result is similar to the hip rotation observed by Van der Linden (2002) in kinematics and kinetic gait characteristics of normal children walking at a range of clinically relevant speeds.

Riede (1988) apud Rolandelli e Dunst (2003) also stand out that if the CG (Center of Gravity) changes, due the horse's movement, the rider ought to adjust his muscular tonus in form to maintain the equilibrium and a correct position on the horse's back dorsum.

The conclusion is that as bigger is the horse's hip rotation as bigger is the rider's hip rotation and more effective the muscular enhancement for the practitioner.

The results of the present study revealed that there is not relevant difference among the analyzed horse breed. Additionally was observed that parameters like step and stride have a direct correlation with rotation and the correlation was not significant when comparing hip length and hip rotation.

Considering the results shown in this study, the natural conclusion is that the biomechanical parameters of the horse's locomotion ought to be considered when choosing a horse for equotherapy sections, in advance to other conditions like the horse breed and hip length.

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USE OF HIPPOTHERAPY AS PHYSIOTHERAPY STRATEGY TREATMENT IN IMPROVEMENT FOR POSTURAL STEADINESS IN PATIENT WITH LOWER LIMB AMPUTATED: A PILOT STUDY

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ABSTRACT

This study aims at measuring the effects of equine-movement therapy (hippotherapy) in the stabilometric parameters of people who have had a lower limb amputation. The postural steadiness analysis (stabilometry) of the physical therapy apprentices in this study was obtained previous to the equine-movement therapy (hippotherapy) and after therapeutic process. A relate study type report of cases was carried out with the participation of 3 (three) patients with unilateral above-knee amputation, who were selected among regular physical therapy amputee patients from the Universidade Católica de Brasília Hospital - UCBH. The acquisition of the stabilometry data previous to the hippotherapy were acquired in the Biomechanical and Analysis Laboratory of the Human Movements from the Universidade Católica de Brasília by the F-scan system and the software version 4.21, using a F-Mat sensor model 3100. The stabilometric parameters adopted were: - acquisition frequency of 100Hz, testing time equal to 30 seconds. There were repetitions of 3 (three) data acquisitions for each test situation: (1) Bipodal Support - (feet slightly apart) and open eyes; (2) Bipodal Support - (feet slightly apart) and closed eyes. These sessions of equine-movement therapy were currently carried through at the Centro Básico de Equoterapia "Gen. Carracho" of the Associação Nacional de Equoterapia - ANDE - Brazil - Brasília and were implemented from September to December, 2005, totaling 20 sessions. On December 2005 an acquisition of the stabilometric data was concluded, following the same methodology adopted in the prehippotherapy measurement. Being an unpublished study, the found results were not compared with other studies. There was not homogeneity in the values of the acquisition of the stabilometry data previous and after to the hippotherapy, however, all the apprentices presented changes in those values.

INTRODUCTION

Hippotherapy, a therapeutic method that uses the horse as a working instrument, was recognized/known by the Federal Council of Medicine as a therapeutic resource of motor rehabilitation on April, 1999 (Nóvoa 2005; Ferreira 2003) special needs carriers that use this therapy are known as hippotherapy practitioners (Associação Nacional de Equoterapia ANDE, 2001).

The horse has cycles of similar movement to the cycle of the man during its natural walk, the pace. The parallelism between human walk and the horse walk is evidenced by the three-dimensional action from both (Ferreira 2003). Three-dimensional action of the equine walk

is used by physical therapist or another health professional (McGibbon, 1998), aiming an improvement of the tonic adjustment, corporeal alignment, postural steadiness (PS) and global function of special needs carriers (Ferreira 2003; Brenda 2003). McGibbon's studies in 1998, Brenda 2003 and Lechner 2003, showed that this similar equine movement to the movement of the human walk, the weight discharge in lower limb over the stirrup and the dissociation of the pelvic and scapular arch can help the hippotherapy apprentices to improve his walk and the PS.

Bertoni (1998) studied the effects of hippotherapy in eleven children with spastic diplegia and after ten hippotherapy sessions weeks, accomplished twice weekly, he described that it preceded an improvement in the PS in eight of his patients. Calverley (1990) used the hippotherapy in five children with cerebral palsy in age between nine and eleven years old, describing that after twenty hippotherapy sessions, PS improvement was observed when sat down during the frontal movement in all studied children. McGibbon (1998) observed an improvement of the PS during the frontal movement in all the five present children in his studies, after sixteen hippotherapy sessions.

In a recent bibliographical review, there were not found studies searching the effects of hippotherapy in individuals' amputation carriers. Amputation is a word derivative from the Latin language, *ambi* = around and *putatio* = to prune. According to Carvalho (2003), we can define the amputation term as being the cutting back, in general surgical, total or partial of a member of the body, William (2003) affirms that people with a lower-limb amputation has a high risk of falling, so that 52% of people who has had lower-limb amputation in the below-knee and above-knee levels relates have already suffered at least a fall incident in the last 12 months.

The PS can be evaluated by clinical tests, however, a quantitative form of registrations declare it comparatively is by the stabilometry, in which the oscillations in the axis anterior-posterior (AP) and medial-lateral (ML), that are respectively represented by the x and y axis, were studied in terms of displacement of the Center-of-pressure (COP) (Oliveira et al. 1992; Oliveira 1998; Barros et al. 1998; Prieto et al. 1996). These are measures that characterize the static acting of the postural control system (Prieto et al. 1996).

The PS maintenance involves a complex integration of the proprioceptive, visual and vestibular systems (Tookuni et al. 2005; Oliveira 1992; Oliveira et al. 1996; Barros et al; Prieto et al. 1996). The proprioceptive system is composed by several receptors that notice the position and speed of all corporal segments, the vestibular system is sensitive to the linear and angular accelerations and the visual system enable the person to keeps reasonably the PS (Tookuni et. Al 2005). Disorders attacking any of these systems, as in the case of amputees patients, it can leads to an increase of postural oscillations and a potential loose of PS (Tanaka et al., 1999).

Summers et al. (1987) and Lord and Smith (1984), using a force Platform Double Video, showed that most of the lower-limb amputees, mostly the ones that use an above-knee prosthesis, can not manage to do ideal transfer of weight in the prosthesis member. Hippotherapy, as described previously, contributes for PS's improvement, therefore, it probably contributes to improve in the distribution of the orthostatic weight in a symmetrical

form between non amputees members and the prosthesis ones, consequently improving the PS of the lower-limb amputees.

The aim of this study was to quantify the effects of a Hippotherapy treatment in people's stabilometrical parameters who owns unilateral above-knee amputation.

METHODOLOGY

SAMPLE

They were related three Hippotherapy practitioners' cases with unilateral above-knee amputation, selected among the attended in the physical therapy sector for amputated of the *Universidade Católica de Brasília* Hospital – UCBH who were made available for accomplishing the present study. The patients have had a year or more of prosthesis and one of them had already concluded the rehabilitation process and the others were still in this process.

There were included in the study the practitioners who managed to be in foot, without support, above the platform, for thirty seconds; which did not have any other orthopedic, neurological or cerebellum pathologies (confirmed by the tests index-index, index- nose and Romberg) or some alteration of the sensibility in the not amputated foot (confirmed by the stesiometry) and still the ones that did not have any phobia to the animal. All of them read and signed the consent term, in which the practitioners agreed to take part in the study. The used experimental protocol was previously approved by the Ethics Committee of the *Universidade Católica de Brasília* – UCB.

ACQUISITION OF THE STABILOMETRY DATA

The stabilometry tests were accomplished in the Biomechanics and analysis Laboratory of the Human Movements of the *Universidade Católica de Brasília* by means of the system F-Scan with version software 4.21 and platform sensor F-Mat (model illustration 3100 (Tekscan, Inc., South Boston, MA), connected to a Pentium model computer III.



Illustration 1: Platform F-Mat Source: www. camatsystem.com/ bilder/storfmat.jpg

The practitioners were submitted to a stabilometry exam before they have been taken the first hippotherapy session and the test was repeated after the 20th session.

The platform was calibrated before each stabilometric record practitioner following the proposed methodology by the manufacturer. To the obtainment of an average value, there were accomplished three collections, 30 seconds each, with the practitioner of opened eyes and another three with closed eyes, in each collection, the individuals were guided to tread in the platform with the first foot in your free choice and to adopt the posture in foot over the same with the feet, not amputated and the one with prosthesis, barefoot and remote away freely, arms relaxed along the body and erect head addressed for a referencial fastened in the wall. Among collections, the practitioner rested sat down in a chair for 60 seconds. The acquisition frequency of the registration was of 100Hz.

For the processing, the signals were percolated by a digital filter Butterworth raisin-low of order Wednesday, with phase zero, with cut frequency of 5Hz, using the software LabVIEW version 5.0 and exported for the calculation of the stabilometric parameters in excel worksheet developed by the authors. There were discarded the first 10 seconds of the acquisition, because the literature considers that initial time as adaptation to the orthostatic position (Prieto et al., 1996).

Following suggestion of the International Society of Posturografia (1981) (mentioned by, Prieto et al., 1996), the stabilometric parameters referring were used to the mean velocity (total excursion of the COP divided by the time of acquisition), and the rms distance (root mean square value of the resultant distance) in its total values and in the anterior-posterior (AP) and medial-lateral (ML) directions for comparisons pre and post-intervention of each hippotherapy practitioner, by means of descriptive statistics. These parameters are important because according to Prieto et al. 1996, the mean velocity presents directly proportional relation form to the amount of regulatory activity of the postural control system and the rms distance relates inversely proportional relation to the to the stability level introduced by the subject.

HIPPOTHERAPY

The Hippotherapy sessions were accomplished at the *Centro Básico de Equoterapia "Gen. Carracho"* of the *Associação Nacional de Equoterapia* - ANDE - Brazil – Brasília. There is no consensus in the literature on the adequate number of sessions of necessary treatment to obtain EP's Improvement of the practitioners. In our study, there were accomplished 20 hippotherapy sessions, from September to December of 2005. The practitioners were well educated regarding the vestments utilization appropriated for the practice of hippotherapy, consisting of mesh pants and T-shirt, which allow members' good tennis and helmet mobility and use.

Aiming a three-dimensional stimulus of the more intense horse in inferior members and pelvic waist, there were selected three horses that had a long pace, in other words, that owned a passed wider and consequently of low frequency and allow a rhythmical and cadenced action.

All the practitioners did Australian saddle use for mount, because this kind of saddle owns a wider seat (which accompanies a better anatomy of the pelvic parquet of the practitioner) and previous handle that allows a larger stability for the mount, besides intensifying the three-dimensional stimulus in pelvic waist.

They were used lower stirrups, so that the shoulders articulations, the spinal column, the hips, the knees and ankles were aligned, facilitating the treatment focus in EP's Improvement during orthostatic position.

The horses were only led to the walk, guided by a conductor (health profissional). In all sessions the practitioners were accompanied individually for a therapist.

Each hippotherapy session consisted of the following stages: (1) With the intention of facilitating the mount, the practitioner used a platform for strategy of mounting and desmounting (approach illustration: the practitioner approached the horse demonstrating intimacy, affection and caressed it; (3) lengthening and muscular relaxation: to the beginning of each session, the therapist guided the practitioners to relax and feel the rhythmical action of the horse lengthening the spinal column, the lower and above members; (4) corporeal conscience and sensitization: the practitioners were positioned in front of the a mirror for perception of the corporeal image. (5) Accomplishment postural alignment and EP sat down. For that, It was asked to the practitioner: (a) loosen the hands of the saddle's handle; (b) abducens arms; (6) active exercises of the trunk and extremities (inflection and extension); (7) movement of the horse in serpentine, circle, ascent and slope; (8) good-bye: terminus of the activity on the horses back, in which the practitioner caressed the horse in an affection way.

RESULTS AND DISCUSSION

Practitioner 1 - M. B, 73 years old, male, has suffered an above-knee amputation in the **inferior** right member on February 1999 due deep veined thrombosis (DVT), being prosthetized on September 2004 and since then he makes use of an endo-skeletal prosthesis, with quadrilateral fitting, external and manual knee joins and foot SACH. Since April 2003, he has being accompanied by the Hippotherapy Service for amputated from *Universidade Católica de Brasília* Hospital (UCBH). Nowadays, his accomplishes march training is with a bilateral axillary crutches in 4 points, however, he still uses wheel chairs as main way of locomotion.

According to the results described in the table 1, it is observed that all the stabilometrical parameters presented an increased values post-hippotherapy when the practitioner was evaluated with the open eyes, indicating an increase of the activity of the postural control system (demonstrated by the increase of the mean velocity) and a decrease of PE after the hippotherapy sessions (demonstrated by the increase of the rms distance values).

However, when evaluated with the closed eyes, except for the mean velocity in the AP direction, which increased, the others parameters intruduced dicreased values in the post-hippotherapy indicating inverse results to the situation with the opened eyes.

Parâmetros	Olhos	abertos	Olhos fechados	
	Pré	Pós	Pré	Pós
rms distance (mm)	0,27	0,67	1,52	0,88
rms distance _{ML} (mm)	0,18	0,27	0,75	0,57
rms distance _{AP} (mm)	0,20	0,62	1,32	0,68
Mean velocity (mm/s)	0,88	1,57	2,99	2,69
Mean velocity _{ML} (mm/s)	0,46	0,63	1,95	1,37
Mean velocity _{AP} (mm/s)	0,67	1,33	1,86	2,01

Table 1. Comparison of the parameters stabilometric before and powder-hippotherapy of the practitioner 1.

Legend: rms (root mean square); ML (medial-lateral): AP (anterior-posterior)

Practitioner 2 – L.M, 47 years old, female, was a running over victim on July 2002, and has suffered an above-knee traumatic amputation in the inferior left member, receiving the prosthesis on April 2004. This practitioner makes use of an endo-skeletal prosthesis, with quadrilateral fitting, auto-bloqueante knee and foot SACH. She has being accompanied by the Hippotherapy Service for amputated from *Universidade Catílica de Brasília* Hospital (UCBH). Nowadays, her way of locomotion is the pace, in two points, with ipsilateral Canadian crutch to the prosthesis.

According to the results described in the table 2, it is observed that all the stabilometrical parameters presented a lower values post-hippotherapy when the practitioner was evaluated with the open eyes, indicating that in spite of presenting a decrease of the activity of the postural control system (demonstrated by the decrease of the mean velocity) her PE improved after the hippotherapy sessions (demonstrated by the decrease of the rms distance values).

However, when evaluated with the closed eyes, the paramethers presented an increased values post-hippotherapy, indicating inverse results to the situation with the opened eyes, in other words, showing a worsening of the PE and incrase of the activity of the postural control system.

Table 2. Comparison	n of the parameters	s stabilometric b	efore and	powder-hippotherapy	of
the practitioner 2.					

Parâmetros	Olhos abertos		Olhos fechados	
	Pré	Pós	Pré	Pós
rms distance (mm)	0.46	0.32	0.28	0.49
rms distance _{ML} (mm)	0.29	0.23	0.15	0.25
rms distance _{AP} (mm)	0.36	0.23	0.24	0.42
Mean velocity (mm/s)	1.68	1.30	1.16	1.84
Mean velocity _{ML} (mm/s)	1.04	0.86	0.56	0.82
Mean velocity _{AP} (mm/s)	1.12	0.84	0.95	1.52

Legend: rms (root mean square); ML (medial-lateral): AP (anterior-posterior)

Practitioner 3 – J. A, 63 years old, male, diabetes Mellitus tipoII, with a peripheric neuropath cal historical and formation in the right foot ulcer, what leds to an above-knee amputation on May 2003, receiving the prosthesis on May 2004. The practitioner makes use of an endoskeletal prosthesis, with quadrilateral fitting, auto-bloqueante knee and foot SACH. Since April 2003, he was accompanied by the Hippotherapy Service for amputated from *Universidade Católica de Brasília* Hospital (UCBH) for 3 months (February, March and April of 2005), be discharged of the Hippotherapy on April of 2005. Nowadays, his way of locomotion is the pace in 4 points, with the help of a Canadian crutch ipsilateral and a cane kind sheep-hook contralateral to the prosthetic limb.

According to the results described in the table 3, it is observed that when measured of opened eyes, the relative values to the rms distance decreased and the relative values to the mean velocity increased post-hippotherapy, indicating that as the PE as the postural control activity system increased.

However, when evaluated with the closed eyes, except for the mean velocity in the AP direction, the results are contrary to the results of the opened eyes.

Parâmetros	Olhos abertos		Olhos fechados	
	Pré	Pós	Pré	Pós
rms distance (mm)	0.49	0.36	0.63	0.70
rms distance _{ML} (mm)	0.33	0.21	0.48	0.54
rms distance _{AP} (mm)	0.36	0.30	0.40	0.45
Mean velocity (mm/s)	1.18	1.39	2.79	2.68
Mean velocity _{ML} (mm/s)	0.81	0.85	1.88	1.67
Mean velocity _{AP} (mm/s)	0.69	0.93	1.64	1.78

Table 3. Comparison of the parameters stabilometric before and powder-hippotherapy of the practitioner 3.

Legend: rms (root mean square); ML (medial-lateral): AP (anterior-posterior)

In this present study, all the practitioners' results tests with the closed eyes were oposite to the opened eyes founded. This fact can be justified by the visual input absence that demands a bigger activity of the system proprioceptive. These facts can be justified by Dorna et.al, using two displacement transducers with a range of 8,5cm operated by the traction in a lightly intender wire that was auto gathered, with a transducer connecting this apparatus to a microcomputer that captivated the displacement of the subject during the period of a minute in 144 voluntaries, 39 subjects with above-knee amputation and 105 not amputated subjects (control group) concluded that the contribution of the visual control system in PE is of particular importance when the proprioceptive system is reduced, as in the case of above-knee amputated in which the proprioceptive loss is compensated by the increase of visual system dependence.

However, there was not a standard regarding the result introduced by the practitioners. This fact could have occurred because the sample was of just three cases that presented different characteristics regarded the age, gender, amputation cause and the safety's level and stability during the pace.

Clinical rehearsals with a bigger sample, more homogeneous and that contemplates control group are necessary to a better deepening in the knowledge of the hippotherapy effects in PE of lower limb amputated practitioners.

CONCLUSION

The objective of the present pilot study is to present the case of three hippotherapy patients with unilateral above-knee amputation and also to raise discussions regarding the hippotherapeutical treatment in lower limb amputees. Since research about the theme was not found in the literature, this is a pioneer study and, for this reason, its results could not be compared.

All the patients presented changes in the values of stabilometric parameters showed after the realization of the hippotherapy, even related to the improving or worsening of the PE, as well as the increase or decrease of the activity of postural control systems. There was not, however, a standard tendency in the answers presented by the participants. More studies are necessary with a higher number of participants that could give us a better comprehension of the hippotherapy effects in the PE of lower limb amputees.

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SIT UP TALL!

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INTRODUCTION

Frequently, riders in Therapeutic Riding and Hippotherapy sessions are instructed to "sit up tall" by instructors, therapists and sidewalkers to improve their posture whilst sitting astride, facing forwards, on a horse at halt and whilst moving. This instruction may not lead to lasting postural change despite repeated instructions to "sit up tall". This paper explores the theoretical concept of the "Controlled Open Kinetic Chain" (Open Chain) and the "Controlled Closed Kinetic Chain" (Closed Chain) (Butler and Major 2003) in understanding the posture of riders during Therapeutic Riding and Hippotherapy and in exploring why the instruction to "sit up tall" does not always result in lasting postural change.

OPTIMAL POSTUR

Viewing a rider from either side, the optimal posture is described by an imaginary vertical line, which can be drawn from the rider's ear, touching the shoulder and hip and ending at the heel (Wanless 1998, Swift 1985) and which has the rider's centre of gravity within the base of support. This posture is similar to human standing posture off the horse.

OPEN AND CLOSED CHAINS

The human body can be thought of as a multi-segmented structure with the bones as segments, the skeletal joints as articulations and the muscles as movement generators spanning the articulations (Butler and Munro 2005). The concept of a Chain within the human body is a collection of articulated rigid links formed by the bones and joints. The human structure requires active control to maintain an upright anti-gravity posture within the gravitational environment. From a biomechanical perspective, active control of a skeletal joint can be considered as the body's ability to respond to a change in the direction of the external moment acting at a joint and thus prevent collapse or produced intended movement. The external moment can change from producing a flexing (bending) effect to one that produces an extending (straightening) effect or vice versa. An example of this is seen in the upright standing position where bending of the knee is resisted by anterior thigh muscle action, producing knee extension. In upright standing with a straight knee, the ground reaction force, which is equal and opposite to the force exerted downwards by the subject, passes upwards close to and in front of the centre of the knee joint. However, if the knee is flexed, the ground reaction force passes behind the knee joint centre. The perpendicular distance from the joint to the ground reaction force is the moment arm and the length of the moment arm increases as knee flexion increases. A moment of force is the ground reaction force multiplied by the moment arm. The larger the moment of force, the greater will be the required muscle action to maintain the position of a joint.

In the riding situation it is hypothesised that there is a horse reaction force similar to the ground reaction force which is exerted upwards to the rider from the horse/rider interface and which requires balanced anterior and posterior trunk muscle control to maintain the upright optimal posture. Deviation from this optimal posture inevitably increases the moment of force which correspondingly requires increased anterior or posterior trunk muscle activity to maintain the upright position. Deviation from this optimal posture inevitably increases the moment of force which correspondingly requires increased anterior or posterior trunk muscle activity to maintain the upright position. Deviation from this optimal posture inevitably increases the moment of force which correspondingly requires increased anterior or posterior trunk muscle activity to maintain the upright position. The end product of active control at a joint or joints is the achievement of a functional goal such as kicking a ball, or in the case of therapeutic riding, maintaining an erect anti-gravity posture whilst withstanding the perturbations transferred from the moving horse, essentially "sitting up tall". The task within Therapeutic Riding and Hippotherapy is to help the rider gain active control of moments and moment arms to maintain an Open Chain posture whilst counteracting the force generated by each hindlimb as the horse moves forward.

The Open Chain is seen in the human structure when the end terminal, usually the head, is free of constraint and active control is necessary at all joints to maintain the position. In contrast in a Closed Chain situation, control demands are minimal and the posture can be maintained by active control only at one or two joints. However, the critical feature of a Closed Chain is that it is impossible to know, by simple visual inspection, at which joints active control is being exerted and some people may control a position by using one particular joint whereas another person may use a different joint control strategy. The analysis of the Closed and Open Chain described here should not be confused with Closed and Open Chain Exercise often described in Sports Medicine, which uses a different definition and does not focus on the control requirement. The selective use of either an Open Chain or a Closed Chain strategy or a combination of both Open and Closed Chains is fundamental to the acquisition of skills throughout development. The exclusive use of a Closed Chain is likely to prohibit skill development as there is only that strategy available for use.

DEVELOPMENT

One of the features that identifies human development is the transition from lying to upright sitting and walking, typically by 18 months of age The ability to achieve these major developmental milestones indicates a neuromuscular and sensory system that is able to counteract the constant downward effect of gravity. As independent walking is established the sensory motor experiences available broaden and children participate in a range of physical activities possibly including horse riding. For a child with movement control difficulties, these opportunities are diminished as the skilled movement opportunities inevitably require control of upright stance, on a narrowed base of support, with rapid changes of direction and graded selective muscle recruitment e.g. gymnastics, tennis and football. Children with movement control problems often require an increased base of support to promote stability and the prolonged use of their hands to assist balance and locomotion. Thus, upright, forward movement at other than a, usually slow, self selected speed is only possible by using some form of mobility aid, such as a car or wheelchair, the speed and direction of which is governed by others, unless using a powered wheelchair or walking aid.. These situations do not offer the opportunity to develop postural control whilst moving. The child will respond by using a Closed Chain strategy in order to cope with the frequent perturbations caused by changes in direction. The eventual consequence of the exclusive use

of the Closed Chain is likely to be discomfort, soft tissue and muscle shortening with joint deformity leading to pervasive long term postural difficulties and the continued reinforcing use of the Closed Chain.

THERAPEUTIC RIDING AND HIPPOTHERAPY

Therapeutic Riding and Hippotherapy offer the opportunity to experience upright forward movement on an increased base of support / seat legs interface. It also gives the preparation time necessary to anticipate the postural disturbance experienced as the horse steps forward. The fundamental task for the rider in Therapeutic Riding and Hippotherapy is maintaining their centre of gravity within the base of support; otherwise the inevitable loss of balance will occur.

Children and adults who routinely require extensive supportive seating off the horse are initially unlikely to be able to recruit the necessary trunk control and core stability to be able to sit astride a moving horse in optimal trunk alignment, hence the often repeated instruction to "sit up tall". These riders revert to using a Closed Chain strategy to confer some stability to maintain their position on the horse and withstand the perturbation. Prolonged use of the Closed Chain strategy is likely to have long term postural consequences and is unlikely to progress to true skill development.

The instruction to "sit up tall" may lead to the responses shown in Table 1.

- The rider can make and sustain the required postural change for a variable, increasing period of time (Open Chain)
- The rider can make and appears to sustain the required postural change for a variable, increasing period of time (Open and Closed Chain)
- The rider can briefly attempt the required postural change but is unable to sustain the change (Open and Closed Chain)
- The rider is unable to attempt the required postural change (Closed Chain with possible progression to Open Chain)

Table 1: Rider responses to the instruction "sit up tall"

The first three responses are fluid and interlinked within the motor learning opportunity offered by the horse. The fourth response may appear to be initially static but may also be capable of change depending on the readiness and ability of the rider to participate in the change process. All of the responses are dependent on the understanding and interpretation of the instruction to "sit up tall" and are related to the cognitive ability, motivation, readiness and willingness to change, the physical status of the rider and the selection and use of the horse. Loch (1988) sums this up by saying "riding is so much a matter of feeling, not only with the body but with the mind and spirit" This implies that all body systems are working in harmony and are complementary. In all riding situations, not only Therapeutic Riding and Hippotherapy, the goal is to achieve the first response, of staying in balance with the horse indefinitely, using an Open Chain strategy in all situations whilst mounted.
Photographic evidence of adults and children riding within Riding for The Disabled (UK) Therapeutic Riding sessions and children receiving individual Hippotherapy was examined to identify Open and Closed Chain status.

RESULTS

From the analysis it appeared that there were Closed Chain postures that were frequently observed in both adults and children with differing disabilities. Some postures were very obvious and which mirrored postures seen in riders without a disability, but there were also Closed Chains that were more subtle, where it might be assumed that a higher skill level had been achieved than was actually present. Key observational findings are tabled below:

- Posteriorly rotated pelvis and flexed lumbar spine
- Anteriorly rotated pelvis and hyperextended lumbar spine
- Pelvic obliquity and spinal scoliosis to either side
- Kyphosis of thoracic spine and flexed or hyperextended cervical spine
- Use of hands for support, to hold on or to brace trunk
- Use of the reins as an aid to balance

Table 2: Examples of Closed Chain status observed in Therapeutic Riding and Hippotherapy

The effect of a Closed Chain appeared to prevent the fluid transference of the three dimensional forces from the walking horse to the rider. What is observed is the absence of movement in one part of the trunk, often associated with fixed posture in that area, and excessive movement in another area of the body. Anxiety, muscle tension and breath holding also produced more subtle forms of the Closed Chain.

Many riders were observed who were holding the reins and attempting to control the direction of the horse but who were dependent on using the reins as an aid to balance.

Consequences of the Closed Chain

The exclusive use of a Closed Chain strategy will ultimately prevent the development of higher skills. Some riders may appear to have achieved a level of competence but on close observation the necessary underpinning Open Chain status has not been achieved, for example there may be a fixed immobile pelvis due to muscle and soft tissue shortening. The consequences of persisting Closed Chains may be pain as in hyperlordosis of the lower back (Auvinet 2000).

However, the *selective* use of the Closed Chain enables practice as a higher skill develops e.g. a baby learning to sit will initially use both hands for support (Closed Chain) before acquiring the necessary trunk control to free one hand to reach for toys (still Closed Chain), before learning to sit independently hands free with a mobile pelvis (Open Chain). In this example the Closed Chain is transient and so is not a problem. However, for a child with Cerebral Palsy for example, to achieve any independent sitting they may be permanently dependent on their hands for support (Closed Chain) as adequate trunk control and equilibrium reactions are delayed.

In Therapeutic Riding and Hippotherapy the Closed Chain may be deliberately encouraged as a means of conferring stability in the absence of complete balanced muscular activity. An example of this might be in encouraging a child with Cerebral Palsy with incomplete head control to use both hands for support whilst using selective graded movements of the horse to target the child's active head control. As head control improves the child is encouraged to reduce dependency on their hand support. Some exercises commonly used within Therapeutic Riding and Hippotherapy often involve lifting both hands up, such as reaching to the sky, or putting both hands on the rider's head. If there is inadequate trunk muscular control to withstand the increased complexity as the arms are lifted then in compensation the trunk will adopt a Closed Chain position to confer stability whilst attempting the task and slumping to the side may be seen. The task has been achieved but at postural cost and no true motor learning can be said to have taken place.

CONCLUSION

Recognition of the Open and Closed Chain can lead to greater understanding of the true skill level of the rider and the reasons why alterations to the optimal posture are often seen. The instruction to "sit up tall" does not fully take account of the issues involved. The selective, but not persistent use of the Closed Chain may be encouraged as part of the motor learning process. However, the pervasive use of the Closed Chain strategy will prevent the development of higher riding skills and may lead to long term postural problems for both the rider and the horse.

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IMPROVING THE COMMUNICATION APTITUDES OF CHILDREN EXHIBITING UNDERDEVELOPED SPEECH SKILLS DURING HIPPOTHERAPY

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I have been working for the last twelve years as a hippotherapist with children with different kinds and degrees of disability. Many of my patients experience serious difficulties in communicating with their surrounding due to severe mental handicap, the central nervous system damage or delay in speech development. These are manifested in the lack of, or difficulties in verbal expression, or the lack of any understandable forms of conveying message using sound or gesture.

Thanks to natural situations during the sessions with a horse, a hippotherapist monitors constant interaction with the little patient. It gives an opportunity to teach him to recognize all the richness of emotions accompanying these sessions, naming and copying with them. A therapist makes the child realize his existence through the relation with a horse and another human and begins to feel the urgency to communicate with them. This is the first fundamental step in the complicated art of communication with the outside world. Moreover, the naturalness of the encountered situations gives a chance to enrich the passive and active vocabulary in the circumstances attractive for the child. The emotional involvement causes the desire to share these states, allowing the child to naturally learn to express himself.

I wish to present in this paper my thoughts and experience in working with children with serious difficulties in communicating and the way in which the hippotherapy sessions are helpful in developing this skill.

To begin with let us examine some notions connected with communication.

What is communication?

Communication is exchanging information. It is a two way process, engaging both the sender and the receiver. Its basic tool is language. The participants of the process serve two functions at the same time, they send and receive messages, that should be clear and understandable for both partners of the interaction.

Sender (who is speaking?)Message (what does he say?)Channel (through what chanem is he speaking?)Reciver (to whom is he speaking?)Result (what is the result of speaking?)

Communication is not only verbal. A powerful means of conveying information are body movements, gestures, posture, facial expression and characteristic features of our voice, like volume, timbre and pace of speaking.

The top goal of communicating is establishing relations. From the moment we are born we are equipped to breathe and feed, we quickly master emotional relationship with the closest people, which prepares us to establish relations with other people. The vital part of this process is communication.

The ability to communicate, just like all other abilities, is subject to development. The basic tool of communication in the beginning is scream understood by parents as a message. The little learner uses screaming more consciously as information about states or needs, like hunger, fear or discomfort. Not yet understanding words, the little child reacts to voice, touch and facial expression of his mother or other close people. His communicative skills develop with the passing of time, as far as the means of sending or transmitting information or receiving it from the surrounding are concerned, due to the development of speech. He acquires the ability to understand the meaning of the words describing the phenomena taking place in his vicinity, begins to use language to convey information about himself and his states, but also to get some feedback.

Speech is the basis of communication, and communication is one of the most important skills necessary to function in social life. Proper functioning of the individual is manifested by accommodative behavior.

The children with disturbed speech acquisition experience various difficulties in social accommodation.

When planning the work with a young patient I keep asking myself, how can I help to release or develop his communicative skills? How to begin my work to make this young man see the reason to communicate with his surrounding?

Before I construct a plan of the prospect therapy I carefully observe and interpret the communicative behavior of the child and check the level of his understanding speech.

Depending on the level of communicative efficiency the therapy target for some children will be developing communicative competence and for others stimulating their eagerness to communicate. For children who achieved certain level of speech development and use words or onomatopoeias it will be learning to speak by learning new notions and words. For others the means of transmitting information will be smile, vocalization, touch, face expression or gesture. These wordless messages can include precise meaning, like "I'm afraid", "I like it", "I like you", "I like my horse", "I feel uncomfortable" and many others.

The way we, the therapists, address the child is incredibly important. We want to be understood and therefore we utter clearly formulated and easy to understand sentences. A therapist working with a child should adjust the way he speaks to the patient understanding capabilities. It must be stressed again that he should be aware of the patient's speech level, and primarily his understanding.

The background situation for the communication process plays an important role in this verbal and non-verbal exchange. It consists of organizing the child's surrounding in the way that makes understanding of the information sent to him and the expression of his own feelings, needs and thoughts possible or easier. All child's activity and sensuality become a source of exchange with his surrounding, thus broadening the area of meaning the child

can send and receive. From among the natural means used in building and strengthening the individual system of communication most frequent are:

- vocalizations
- sight and pointing with eyes
- natural and set gestures
- facial expressions
- physical response including general response of the whole body.

The reactions mentioned above are usually the children response to the behavior, presentation of objects or statements of their communication partners.

It is assumed that the hippotherapy sessions release in a natural way the child's need to communicate. Primarily, it means communicating with a horse. Fascinated with a horse, the child eagerly sets the relation with accompanying people treating them as natural addition. Consequently, practicing social functions of language becomes the easier task than in traditional forms of therapy. Thanks to their appeal, constant form and repetitive character of some elements of the meetings, the horse sessions give the communicative meaning, thus being helpful in developing consciousness and the ability to communicate.

Such constant and repetitive elements include:

- greeting a therapist and a horse
- giving a sign to move
- stopping
- saying good bye
- unchanged structure of exercises.

The tools applied in the above are gestures accompanied by a sound, onomatopoeia or a word, depending on the possibilities of a particular child. The role of a therapist is to combine behavior with the manifested need and to choose from the behavioral register of the child the one to be reinforced.

What you should do then is:

- observe the child's behavior, adequately recognize the reason and respond to the message sent by the child
- choose one behavior to make it a signal
- consistently reinforce the signal
- confirm the child that his signal is understood, clear and effective.

Example: The child wants to make the horse stop trying to snort with his lips instead of the commonly used "whoa".

Let us not forget that non-verbal communication is primal in human development and therefore more accessible in the initial stage of life and so important in our work with retarded

patients. The child may not understand the whole situation and our expectations in the beginning of the therapy. Then the therapist as if plays both parts, i. e. saying the child's words and his own, teaching the child certain communicative behaviors. The aim of doing so is to arouse the joy of speaking and willingness to inform as well as to draw the child's attention to a word or sound uttered by the child with a particular meaning and the advantages of using it.

The child coming to the stables greets in different ways with the therapist and a person holding a horse, either by shaking hands and a word or shaking hand and a sound, and then with a horse patting its abdomen, neck and stroking its nose. The next stage is mounting the horse and moving. After a while the child tries to make his favorite horse move, stop or trot without anyone's help. After many repetitions accompanied by a description of the whole situation and use of the same announcements, the child would associate certain activities with their results, e. g. to make a horse move you have to give a signal saying the word "giddy-up!" or the simplified sound like "up connected with the movement of the hips. We have to be careful observers to react adequately, as the announcement sent by the child may be transmitted through a gesture, body movement or sound. The initiative took by our patient, even if minor, must be recognized and supported. The feeling of being noticed and recognized gives a sense of satisfaction and may lead to another initiative meant for interaction and the need of even wordless dialogue. Due to predictability, which is closely connected with repeating some tasks and constant organized situations we deal with during the horse sessions, the child learns and practices such behaviors according to his own possibilities.

Close relation with an animal, its surrounding, Nature and direct situations related to the life of a horse can stimulate children to enrich their passive vocabulary with items related to their favourite animal, the life of people and changes taking place in Nature. The new words are mastered faster during the hippotherapy sessions than the traditional forms of speech-therapy. The crucial element seems emotional involvement. A child participating in hippotherapy sessions faces various situations, sometimes funny, sometimes sad, strange or stressful. He usually reacts to them and tries to draw our attention, because he wishes to show emotions through face expressions, gesture or vocalization.

BASIC CRITERIA FOR EVALUATION OF THERAPEUTIC RIDING IN SUBJECTS AFFECTED BY NEUROMOTOR DISORDERS: METHODOLOGY, ASSESSMENTS, RESULTS

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The repeated administration of our "Therapeutic Riding Extrapyramidal Disorders Assessment Scale" ("TR ED Assessment Scale") (Pasquinelli et al, 1997, 2000) has confirmed the scientific reliability and clinical usefulness of the scale in the quantitative assessment of TR, for defining the TR objectives, TR duration and long-term maintenance on the ground of the positive effects observed on horseback ("maintenance index on the ground"), which is the real target of any rehabilitative treatment. In the meantime the data emerging from the scale suggested the advisability of increasing the range and number of items for a more detailed and broader evaluation so that the scale can be applied to other neuromotor disorders in addition to ED. We therefore proceeded:

1) to revise the "TR ED Assessment Scale", consisting of:

- a) increasing the score range: which has passed from 0-3 to 0-4 points. The possibility of assigning 1/2 point has also been introduced, when expression of the symptom or the neuromotor competence in question is not sufficient to reach the whole next point, but is significant on the clinical-rehabilitative level. All of this is for the purpose of establishing a finer degree of graduation in the codification of even little semeiological modifications, otherwise not objectively classifiable
- **b)** adjusting the scoring method: establishing a precise definition of the quantitativefunctional criteria for Target Symptoms, Consensus Mechanisms (adjustment of tone, timing, strength) and Functional Competences (see enclosed Scale)
- c) including items for the assessment of all neuromotor disorders: spastic, dystonic, and cerebellar disorders
- d) identifying the same items ("Common Items") that are present and assessable on the ground and on horseback for evaluation of the Ground/Horseback effect ratio" (G/H Index) and the "maintenance index on the ground"
- e) identifying the items that are to be assessed individually on the ground and on horseback ("Specific Items")
- f) further analysis of the "TR Time", i.e., the time required for stabilization of positive effects on horseback ("TR Time on Horseback") and on the ground ("TR Time on the Ground"), to establish the useful duration of TR, with definition of the "TR Time min" and "TR Time max", indicating respectively the minimum and maximum time required for positive changes in the items assessed

g) adjusting the score and the mode of evaluating the "G/H Index" as well as the "maintenance index on the ground";

2) to elaborate the new Scale called "TR NEUROMOTOR DISORDERS ASSESSMENT SCALE" ("TR ND Assessment Scale"); it can be applied to both children and adults, affected by pure or mixed forms;

3) to elaborate the specific Data Base.

SUBJECTS (TAB. 1)

We applied this reviewed Scale to a selected group of Subjects (S). Criteria for selection: S affected only by fixed Neuromotor Disorders, pure and mixed forms; stabilization of the clinical picture for at least 4 years; absence of significant interfering factors (uncontrolled epilepsy, severe illnesses, etc.); maintenance of therapeutic treatment when present.

We selected 12 S (7 females, 5 males).

Mean age at the beginning of TR: 17y7m (range: 6y9m-57y1m): children-adolescents: 8 S (range: 6y9m-13y7m); young adults - adults: 4 S (range: 21y10m- 57y1m).

TR follow-up: mean: 5y5m (range: 1y6m-8y2m); in 8 S TR follow-up lasting over 4y10m (in 5S 8y).

5S (BE, QS, RF TG, ZM) had already been assessed by the previous protocol, although with a shorter follow-up period in 3S (BE, TG, ZM), so that it was possible to make a pertinent comparison relevant to the two Scales.

Etiopathogenesis: Cerebral Palsy in 10S; acquired disorders in 2 adults (RF, TG) (the pathological event had occurred many years before TR had been started: respectively, 10 years and 13 years).

Clinical forms: Pure Forms: 7S (5 spastic and 2 dystonic S), Mixed Forms 5 S. Level of Disability (according to "Gross Motor Function Classification System", Palisano et al, 1997): severe disability is present in 6 S (level 5: head control absent in 3 S, level 3: non walking in 3S).

Mental Retardation: 8 S (severe/moderate: 5 S; mild: 3 S). Psychiatric involvement: 2 S. Involuntary Movements: (IM): 4S (BD, QS, TG, ZM): choreoathetoid movements, grimaces.

METHOD

Serial VR and observations both on horseback and on the ground are made at established intervals (0-3-6-12-and subsequently 1 time a year or at greater frequency when necessary) and analysed according to our revised Scale in order to examine:

 A) neuromotor modifications observed on horseback and long-term modifications on the ground with evaluation of the following items: 1) Target Symptoms; 2) Consensus Mechanisms (adjustment of tone, timing, strength); 3) Functional Competences;

- B) possible immediate modifications after the TR session (within 30 minutes); this serves to assess the temporary continuation on the ground of the major positive effects observed on horseback, versus the situation at the start;
- C) acquired riding skills.

The effects of TR on Target Symptoms, Consensus Mechanisms, Functional Competences are scored. Then we assess the **"TR Time min"** and **"TR Time max"**, and the **G/H Index** in order to establish the **"Maintenance Index on the Ground"** (Pasquinelli et al., 1997, 2000).

RESULTS AND DISCUSSION

Positive results were observed in all of the S and for all of the items, although with different distribution and gradualness. Within the context of this global responsiveness of the symptoms, more specific findings on the times and degrees of response are analyzed by :

NEUROMOTOR ASSESSMENT ON HORSEBACK (TAB. 2, 3, 4)

TARGET SYMPTOMS and CONSENSUS MECHANISMS: wide scatter in the results with the presence of numerous responses of Excellent value (9 S) and few of Slight value (2S). No improvement was observed only for 2 items (Latency and Adjustment of Timing) in 1S with severe disability (BM) (level 5 + multihandicap). The particular and immediate responsiveness of the IM was confirmed: Good/Excellent in 3/4S, as well as the particular responsiveness of very disabling symptoms such as Stiffness, Flexion, Opisthotonus/Retropulsion, Torsion, Segmentary Inconsistency, Startle.

FUNCTIONAL COMPETENCES: similar scatter in distribution; very significant results in Sitting and Lower Limbs Function (100%), Motor Planning/ Coordination (91.96%) and Head Control (77.77%). Lower percentage of response for Balance Reactions (66.66%) and Upper Limbs Function (58.33%). No improvement was observed in 4S: in 2S severely affected (BE, BM) relevant to Upper Limbs Function, Balance Reactions and Motor Planning/ Coordination (only in BM) and in 2S (BD,LG) (disability level 3) relevant to Head Control, given the already "good" prior level of competence.

It should be noted that the control of highly disabling Postural Patterns (PP) and Motor Patterns (MP), the marked reduction in Stiffness and the good results achieved in Consensus Mechanisms allow the acquisition of functional competences such as, for example, head control even in all of the severely disabled subjects.

TR TIME on Horseback: 0-5y

Note that, for highly disabling PP and MP such as Startle, Torsion, Opisthotonus/ Retropulsion, for Stiffness and for IM the TR time is often **0** (= immediate improvement).

In general however, a first improvement (**"TR Time min")** in the items occurs within 6m in 82.73% of the cases, and however (very rarely) in **no more than 3y** (BE) in severely disabled subjects. Further improvement can however be observed, albeit sporadically, even at **5y** (**"TR Time max")** but not beyond that time.

NEUROMOTOR ASSESSMENT ON THE GROUND (TAB. 2, 3, 4)

On the whole, good results were found in maintaining the responses achieved on horseback, although the results are of course of lower degree: no "Excellent" scores and fewer "Good" ones.

TARGET SYMPTOMS

Good: in some of the medium-slight subjects: latency 3/11S (LBG, BD, ZM), segmentary inconsistency 1/9 (ZM);

Fair: the majority of symptoms is distributed in this category with high percentages (55%-80%); lower values are found for Startle and above all for IM, which were confirmed as prompt response on horseback but poor maintenance on the ground (1/4S);

None: uneven distribution with sharp predominance of the IM (3/4S).

CONSENSUS MECHANISMS and FUNCTIONAL COMPETENCES: distribution mainly in the **Fair** category with percentage of response varying from 50% to 80% for all items except Balance Reactions and Upper Limbs Function, for which the response is less than 50%.

None: Timing Adjustment in one severely affected S (BM); Head control and Sitting in S already having "good" basic competences.

Note that, even on the ground, all of the severely disabled subjects showed acquisition of head control and of sitting (Slight/Fair values), even when after a long follow-up time (2y-3y).

TR TIME on the Ground: 3m-5y

The appearance of a first improvement ("**TR Time min**") takes place within 1y in 73% of cases, in some cases later, but **not over 4y**, especially in the severely disabled S. The improvement may continue still further, but not over **5y** ("**TR Time max**").

NEUROMOTOR ASSESSMENT ON THE GROUND AT THE BEGINNING AND RIGHT AFTER THE END OF THE SESSION (within 30 minutes)

In all of the subjects, positive changes were observed, which almost constantly preluded to improvement in competences on the ground at a later time. In the severely disabled subjects, the **"TR time min"** is 1-2 years, in the less severe cases, it is 6-18 months; in the latter it appears tendentially longer for the competences that start from a good level and whose modification involves the achievement of particularly complex abilities.

RIDING SKILLS

The above-reported results reached on horseback and their maintenance allowed the S to acquire riding skills.

- Because of neuropsychic severity, **8 S begin with Hyppotherapy (HPP) and remain in this module** but while 3 S (BD, BM, CN) remain at the starting level but with improvement in

execution, the other 5 (BE, GE, LG, LBG, RM) show progressive improvement, going on to higher levels (difference of as much as 2-3 levels).

- **1S** (RF, Disability Level 2) **begins with HPP and after 15m moves on to the Remedial/ Educational Riding (ER) program**.
- 3 S (QS, TG, ZM) (Disability Level 1) begin with the ER program. The good (TG, ZM) and excellent (QS) results achieved in these S regarding neuromotor abilities on horseback, especially when it came to the ability to plan movement and coordination, allowed them to proceed at a good trot (sitting trot TG, and posting trot QS, ZM-) and also to carry out exercises in the arena (slalom, working over poles) (QS, ZM).

OVERALL ASESSMENT AND GENERAL CONSIDERATIONS

G/H INDEX: "Good " in 10 S (TAB. 5) without significant differences in results within the range in relation to age, clinical form, disability level, duration of follow-up; **"Fair" in 2 S** (BE, TG). Confirmed was the prompt responsiveness shown in previous studies with invalidating PP and MP (torsion, opisthotonus/retropulsion) and in the IM with a TR time on horseback often even as low as 0, with confirmation of the particularly appropriate indication of TR for **dystonic subjects**. Positive results are also observed in all of the **spastic subjects** as regards specific targets of the form such as hypertonus, grasping, stenia, startle, whose immediate disappearance on horseback is noteworthy.

On the whole, **good "Maintainance Index on the Ground"** of acquisitions achieved on horseback was confirmed. This rehabilitation result has even allowed for **3S** the **TRANSITION TO ANOTHER DISABILITY LEVEL ON THE GROUND:** CN, from Level 5 to 4, LG and LBG from Level 3 to Level 2.

The long follow up in 8 S lasting over 4y10m (in 5S 8y) has made it possible to evidence the possibility of gradual and continuous improvement in the Target Symptoms and in the correlated Functional Competences, both in severely disabled S (Level 5), in whom the acquisition of a new competence could even be observed (head control, sitting), and in slightly disabled ones (ZM), relevant to more complex competences. Note that, in the severely disabled subjects, improvement may begin even after 3 years of TR. However, no changes, either on horseback or on the ground, were observed after 5 years, from which it may be deduced that the rehabilitative usefulness of TR in fixed forms is d" 5 years.

CONCLUSION

Comparative analysis of the two Scales shows a decisive increase in sensitivity of the present Scale as compared to the previous one, insofar as it offers a spectrum of assessment of results that is more ample and precise, sensitive also in determining minimum changes both in severely impaired and slightly affected subjects, observable in all 3 groups of assessment items. All of this translates into a better understanding of the results for each individual subject, and in general an increase in knowledge relevant to the responsiveness of each individual symptom to TR, thus rendering the indication more specific. The particularly specific indication of TR for highly invalidating symptoms, rarely susceptible to change with the usual therapeutic methods, and the validity of the "TR Neuromotor Disorder Assessment Scale" in subjects very different for age and pathology, has been amply confirmed.

S Sex	Etiological Diagnosis	Semiological	Disability	Ę	Psych.		Age at TR	TR , "
BM M		Diagnosis	Level	MIK	Involv.	IVII	beginning	tollow-up
L L	Ð	PF: Spast Tetrapl	IJ	severe	ou	ou	9y 7m	8y
DE DE	Ð	MF: II Di + Spast	5	no	ou	ou	13y 7m	8y
BD F	Ð	MF: TeDy + AtTe	3	no	ou	yes	11y 8m	3y 6m
CN M	Ð	PF: Spast Tetrapl	5	severe	ou	ou	10y 2m	8y
GEF	G	MF: Spast Tetrapl + TeDy	7	moderate	ou	no	8y 6m	8y
F DI	Ð	MF: Dy-Ataxic Tetrapl; Blindness	ß	severe	yes	ou	7y 7m	5y 8m
LBG F	Ð	PF: Spast Tetrapl	3	severe	yes	ou	9y 3m	4y10m
QS F	G	PF: TeDy	1	no	ou	yes	31y	2y
RM M	Ð	PF: Spast Diplegia	2	mild	ou	ou	6y 9m	5y 1m
RF F	Vascular	PF: Left Spast						
	Disorder	Hemiplegia	2	no	ou	ou	57y 1m	1y 6m
TG M	Trauma	MF: TeDy + Right Dy Hemipl	1	mild	ou	yes	25y 5m	1y 8m
ZM M	G	PF: TeDy	1	mild	ou	yes	21y 10m	8y 2m
mean							17y7m	5y 5m

XII INTERNATIONAL CONGRESS OF THERAPEUTIC RIDING

TAB. 1 - SUBJECTS

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TAB. 2 and TAB. 3: EVALUATION of the COMMON ITEMS on HORSEBACK (H) and on the GROUND (G)

TAB. 2 TARGET SYMPTOMS

RESULTS	Late	ncy	Stiffr	less	Flopp	iness	Flexi	ion	Opisthc Retrop	otonus/ ulsion	Tors	ion	Segmer	ntary stency	Star	tle	Grasp Avoid	ing/ ding	Involur Moven	ltary nents
	Η	IJ	Н	ს	Η	IJ	Η	IJ	Н	IJ	Η	IJ	Η	IJ	Η	IJ	Н	IJ	Н	IJ
EXCELLENT	1/11												1/9		1/5				1/4	
GOOD	2/11	3/11	4/11				3/9		3/10		4/5		4/9	1/9	1/5		1/10		2/4	
FAIR	7/11	6/11	7/11	7/11	2/2	2/2	5/9	6/2	6/10	6/10	1/5	4/5	4/9	5/9	3/5	2/5	9/10	7/10	1/4	1/4
SLIGHT		1/11		4/11			1/9	1/9	1/10	3/10		1/5		2/9		1/5				
NONE	1/11	1/11						1/9		1/10				1/9		2/5		3/10		3/4

TAB. 3 CONSENSUS MECHANISMS FUNCTIONAL COMPETENCES

	lance ctions		G		1/12	4/12	4/12	3/12
	Bal Rea		Η	1/12	1/12	6/12	2/12	2/12
	tor ving/	nation	G			7/12	3/12	2/12
	Mo Planr	Coordi	Η		1/12	10/12		1/12
	Jpper nb	ction	G		1/12	5/12	3/12	3/12
	Left U Lin	Fun	Η	1/12	1/12	5/12	3/12	2/12
	Upper nb	ction	G		1/11	4/11	3/11	3/11
	Right Lir	Func	Η	1/11	1/11	4/11	3/11	2/11
	ng		G		1/12	6/12	3/12	2/12
	Sittiı		Η		1/12	11/12		
	Head Control		G			5/9	1/9	3/9
			Η			6/2		2/9
	nent ling		G		2/12	8/12	1/12	1/12
	Adjust of Tin		Η	1/12	3/12	7/12		1/12
	Adjustment of Strenght		G		3/12	9/12		
			Η	2/12	3/12	7/12		
	ment ine		G		2/12	10/12		
	Adjust of To		Η	2/12	2/12	8/12		
	RESULTS			EXCELLENT	GOOD	FAIR	SLIGHT	NONE

XII INTERNATIONAL CONGRESS OF THERAPEUTIC RIDING

		ON TH	E GROUND		ON HOR	SEBACK
RESULTS	Assisted Standing	Standing Independently	Assisted Walking	Walking Independently	Right Lower Limb Function	Left Lower Limb Function
EXCELLENT					1/9	1/10
GOOD	1/9		1/8			2/10
FAIR	8/9	3/4	5/8	3/4	8/9	7/10
SLIGHT		1/4				
NONE			2/8	1/4		

TAB. 4 EVALUATION of the SPECIFIC ITEMS on HORSEBACK and on the GROUND

Legend - Assessment of difference in score at the beginning and at the end of the follow-up in S in which the symptom or the competence are present

and assessable; we excluded the severely disabled S in whom the competence is impossible - e.g. standing, lower limbs function - or the S having excellent

basic competence e.g. head control, right limbs function in left hemiplegia.

"THERAPEUTIC RIDING NEUROMOTOR DISORDERS ASSESSMENT SCALE" ("TR ND ASSESSMENT SCALE")

Pr. Anna Pasquinelli, Dr. Paola Allori, Pr. Massimo Papini - Institute of Child Neurology and Psychiatry, Department of Neurological and Psychiatric Sciences, University of Florence, Italy

The "TR ND Assessment Scale" consists of two sections:

1- NEUROMOTOR ASSESSMENT on the Ground and on Horseback

2- RIDING SKILLS

The scale is applied at established intervals, 0-3-6-12 months and subsequently 1 time a year or at greater frequency when necessary (0= before the beginning of TR). A score is assigned to the single items and the results are assessed on the basis of the difference in scores monitored during the different administrations of the scale.

1- NEUROMOTOR ASSESSMENT

A - NEUROMOTOR ASSESSMENT ON HORSEBACK and ON THE GROUND (the long-term ones on the ground)

A1) COMMON ITEMS

Target Symptoms	Consensus Mechanisms
Latency	Adjustment of Tone
Stiffness	Adjustment of Strength
Floppiness	Adjustment of Timing
Flexion	,

Opisthotonus/Retropulsion Torsion Segmentary Inconsistency Startle Grasping/Avoiding Involuntary Movements Functional Competences Head control Sitting Upper Limbs Function: right and left Motor Planning and Coordination Balance Reactions

A2) SPECIFIC ITEMS

(Functional Competences assessed separately on horseback and on the ground)

ON HORSEBACK

Lower Limbs Function: left Lower Limbs Function: right Assisted Walking Walking Independently **ON THE GROUND** Assisted Standing Standing Independently

B - NEUROMOTOR ASSESSMENT ON THE GROUND BEFORE AND AFTER THE TR SESSION (WITHIN 30 MIN.)

The items concern the neuromotor modifications which are observed directly and have a ready adaptive meaning. It assesses neuromotor acquisitions (antigravitational competences) and the control of involuntary movements before and after the TR session. We assess:

Antigravitational Competences Sitting Standing Walking Control of Involuntary Movements

NEUROMOTOR ASSESSMENT DEFINITION OF THE SCORE

TARGET SYMPTOMS

SCORE: assessment is made of evocation, temporal incidence of the pathological symptoms considered and their interference with PP and MP having a more favourable functional connotation for the subject's posture and motor abilities.

- **0** = **Absent**: absence of symptom
- **1** = **Mild**: sporadic symptom: it may only be triggered by specific stimuli; it does not interfere with the emergence of more favourable patterns
- **2** = **Moderate**: frequent symptom: it can be controlled and it allows the emergence of more favourable patterns
- **3** = **Severe**: very frequent symptom: it is controlled only with difficulty and it interferes with the emergence of more favourable patterns
- **4** = **Dominating**: continuous symptom: it cannot be controlled and it occludes the emergence of more favourable patterns

CONSENSUS MECHANISMS AND FUNCTIONAL COMPETENCES

SCORE: assessment is made of the acquisition of a competence, its maintenance and the freedom with which it is carried out, and, for consensus mechanisms, the possibility of regulating them.

- **0** = **None:** absence of competence
- 1 = **Slight:** competence acquired with difficulty; fluctuating maintenance; no independence in performance
- 2 = Fair: competence acquired and maintained; poor independence in performance
- 3 = Good: competence acquired and maintained; fair independence in performance

4 = **Excellent:** competence acquired and maintained; good independence in performance **NOTE:** when the expression of the symptom or neuromotor competence in question is insufficient to allow assignment of the next score, ½ **point** may be assigned.

EVALUATION OF THE RESULTS

Assessment is based on variation in scores higher for Neuromotor Competences and Consensus Mechanisms (e.g., from 0 to 1, from 1 to 2, etc.) and lower for Target Symptoms (e.g., from 1 to 0, from 2 to 1, etc.)

worsening:	negative score
none:	unchanged score
slight:	variation of 1/2 point
fair:	variation of 1 point
good:	variation of 2 points
excellent:	variation of 3 points
dramatic:	variation of 4 points

NEUROMOTOR ASSESSMENT

G/H INDEX and "MAINTENANCE INDEX ON THE GROUND" OF RESULTS OBTAINED ON HORSEBACK

CALCULATING G/H INDEX

CONSISTS OF 3 STEPS:

1) for each item the difference in score is assessed, assigning a **WEIGHTED VALUE** as follows:

worsening =	- 1 point
unchanged =	0 points
slight =	1 point
fair =	2 points
good =	3 points
excellent =	4 points
dramatic =	5 points
	worsening = unchanged = slight = fair = good = excellent = dramatic =

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*The difference of half a point is considered a "slight" variation only in cases in which it represents the only change observed; in cases where changes equal to or greater than one whole point are observed, a weighted value rounded off to the lower whole point is assigned (e.g.: variation in score equal to 1.5 is rounded off to 1 point and thus assumes a weighted value of 2);

2) the data thus obtained are added together and divided by the number of items considered: the values obtained are assessed as follows:

< 0: -	worse
0: =	unchanged
0 - 0.74	slight
0.75 - 1.49	fair
1.50 -2.24	good
e″ 2.25	excellent

they express the "GLOBAL ASSESSMENT ON THE GROUND" and the "GLOBAL ASSESSMENT ON HORSEBACK" of the results obtained;

3) the relationship between the results obtained on the Ground and those obtained on Horseback determines the G/H INDEX assessed as follows to obtain the "MAINTENANCE INDEX ON THE GROUND" OF RESULTS OBTAINED ON HORSEBACK :

< 0 =	worse
0 =	unchanged
0 - 0.32 =	slight
0.33-0.65	fair
0.66 - 0.99 =	good
e″ 1=	excellent

2) RIDING SKILLS

TR can be divided in **three branches or Modules**:1) Hippotherapy; 2) Remedial/ Educational Riding and Vaulting, 3) Sport Riding (Pasquinelli and Papini, 1997; FRDI 1999) that can be considered as three phases of the rehabilitative process, at least for the subjects in whom this is possible (Pasquinelli and Papini, 1997). Our Scale assesses the riding skills of the S in Hippotherapy and Remedial Educational Riding; we do not assess riding skills in Vaulting and in Sport Riding because they are evaluated in more specific contexts.

Within the first 2 Modules considered, Levels of increasing difficulty can be identified, which can be further split up into different Sub-levels according to the branch examined.

LEVEL is defined by the mode of horseback riding

SUBLEVEL is defined by the gait of the horse: stationary, slow walk, fast walk, trot

A) HIPPOTHERAPY (the S does not lead the horse by himself)

1st LEVEL: S rides horse with backrider

2nd LEVEL: S rides horse holding handle, with leader holding horse on the longe and TR Instructor aside

3rd LEVEL: S rides horse holding handle with leader holding horse on the longe and TR Instructor in the centre of the arena

4th LEVEL: S rides horse holding reins, with leader holding horse on the longe and TR Instructor in the centre of the arena

B) REMEDIAL/EDUCATIONAL RIDING (the S rides horse independently)

1st LEVEL: with 1 sidewalker and TR Instructor in the centre of the arena2nd LEVEL: TR Instructor in the centre of the arena3rd LEVEL: exercises on horseback

ASSESSEMENT OF RIDING SKILLS: TWO CRITERIA

- Execution Methods

Score: 0=unable to perform; 1= poor ability; 2= fair ability; 3= good ability; 4= excellent ability

Results:

negative= worsening

none= unchanged

fair = variation of 1 point

good= variation of 2 points

excellent= variation of 3 points

dramatic = variation of 4 points

- **Shift of Level and Module:** this parameter is closely connected to basic pathology which can in fact prevent the S from gaining access to higher levels, without necessarily invalidating the rehabilitative results.

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GAIT ANALYSIS OF A THERAPY HORSE AFFECTS OF WEIGHT AND POSTURAL SYMMETRY OF RIDER ON THE QUALITY OF THE HORSE`S GAIT

Author: Luciana Ramos Rosa - Brazil

INITIAL CONSIDERATION

This pilot research was developed by Luciana Ramos Rosa as a Teacher Training Student in Japan at The University of Yamanashi, Faculty of Education & Human Sciences, Department of Physical Education, Sports, and Health Sciences. During her Teacher Training Program 2002 - 2004, she was supervised by Kiyomi Ueya, Academic Adviser, PhD in Biomechanics, and Master in Physical Education.

INTRODUCTION

This research is a simplest descriptive study, a case, which reports data on only one subject. Descriptive studies are also called observational, because observes the subjects without otherwise intervening. The subject of this theme is a therapy horse, a Japanese Breed - Dosanko from Hokkaido. This study was designed to describe and analysis the movements of one horse under four different conditions. Video analysis was used to measure temporal characteristics of the horse's gait. The horse was fitted with adapted reflective markers and recorded by seven different cameras.

CLASSIC HIPPOTHERAPY

In classic hippotherapy, it is purely the horse's movement that influences the patient. The patient may be positioned astride the horse facing forward or backward, sitting sideways, lying prone or supine. The patient passively interacts with, and responds to, the horse's movement. The therapist's responsibility is to continuously analyze the patient's responses and adjust accordingly the manner in which the horse is moving. For this reason the therapist must have sufficient understanding of the movement of the horse to direct the experienced horse handler and therapeutic riding instructor to alter the tempo and direction of the horse as indicated by the patient's responses. (Barbara Heine, April 1997)

EQUOTHERAPY

Equotherapy is a treatment approach that uses the movement of the horse based on the methodology of classic hippotherapy with the addition of the treatment principles that apply to the particular profession of the therapist providing the service. The unique combination of the horse, the horse's movement and non-clinical environment produces an extraordinary effort on all the systems of the body. Therefore, although equotherapy is frequently used to achieve physical goals, it also affects psychological, cognitive, social, behavioral and communication outcomes. Equotherapy is truly a multidisciplinary form of treatment and can be applied by different professionals. Equotherapy uses activities on the horse that are meaningful to the client and specifically address the individual's goals. It provides a controlled environment and graded sensory input designed to elicit appropriate adaptive responses

from the client. Rather, it produces a foundation of improved neuromotor function and sensory processing that can be generalized to a wide variety of activities outside treatment.

Why a Horse?

Equotherapy uses the multidimensional movements of a horse to achieve specific therapeutic functional outcomes. Specially trained therapists use selected horses as mobile therapeutic treatment tools. The horse's walk provides sensory input through movement, which is variable, rhythmic, and repetitive. The resultant movement responses in the special rider are similar to human movement patterns of the pelvis while walking. The variability of the horse's gait enables the therapist to grade the degree of sensory input to the special rider, and then use this movement in combination with other treatment strategies to achieve desired results. Special riders respond enthusiastically to this enjoyable experience in a natural setting. A horse's rhythmic, repetitive movements work to improve muscle tone, balance, posture, coordination, strength, flexibility and cognitive skills. In addition, adjusting to and accommodating for the horse's movements increases sensorimotor integration.

What is Biomechanics?

Biomechanics applies mechanical principles to the study of living systems. In this case the system we are interested in is the horse and, more specifically, we are using biomechanical techniques to study how the horse moves. This process, which is known as gait analysis, measures a horse's performance objectively and allows us to quantify some aspects of performance that are not visible to the human eye.

The Walk

The walk is a 4-beat gait in which the sequence of footfalls is RH, RF, LH and LF. This type of footfall sequence, in which the hind footfall is followed by the fore footfall on the same side, is called a lateral sequence. The footfalls at the walk should be evenly spaced in time, giving a regular, 4-beat rhythm. The limb support sequences alternate between bipedal supports (2 limbs in contact with the ground) and tripedal supports (3 limbs in contact with the ground). The bipedal supports always consist of a fore limb and a hind limb, which may be a diagonal or a lateral pair. The tripedal supports may be 2 hind and 1 fore limb or 2 fore and 1 hind limb. There is no period of suspension in the walk, which makes it an easy gait for the rider to sit.

Gait Quality

According to Hilary M. Clayton research on gait quality has shown that tempo, limb coordination pattern and range of motion of the joints are important features. The purpose of this study was to measure only the tempo and limb coordination. A gait is distinguished by the sequence and timing of the footfalls, which is repeated in a cyclic manner. A single unit is a stride. The stride starts and ends at the same point in the cycle of limb movements. Tempo (or stride rate) is the rate of repetition of the strides. It is usually measured in strides per minute. Rhythm describes the timing of the footfalls within the stride. The support sequence is the sequence of limb combinations that support the body weight during a stride. Limb coordination describes the rhythm of the footfalls. (Hilary M. Clayton, April 23-28, 1998)

Support Sequence

The limb-support sequence describes the number of limbs that support the body sequentially during the stride. In the walk, the horse is supported alternately by three limbs (tripedal

support) and by two limbs (bipedal support). There are eight support phases in each complete stride (Figure 1).

Figure 1. Support phases in the walk

RH-RF-LH: RF-LH: RF-LH-LF: LH-LF: LH-LF-RH: LF-RH-RF: RH-RF



As speed increases, each limb tends to be on the ground for a shorter period (a shorter stance phase), creating less overlap between the various limbs' stance phases. This translates into shorter periods of tripedal support in the medium and extended walks. There are longer periods of tripedal support in the collected walk, which gives the horse a larger base of support and helps him to maintain his balance at slower speeds.

Walk Speeds

Transitions among the various types of walk involve distinct changes in speed: from 82 meters per minute (3.0 miles per hour) at the collected walk, to 104 mpm (3.8 mph) at the medium walk and 109 mpm (4.0 mph) at the extended walk. The speed of a gait is calculated as follows:

Speed (meters per minute) = Stride length (meters) x Tempo (strides per minute) Adjusting stride length, tempo, or both changes a gait's speed. Horses at liberty adjust both stride length and tempo.

Stride Length

Stride length is the distance between successive ground contacts (hoof prints) by the same hoof. This distance is the sum of the lateral distance (the distance between the hind hoof print to the front hoof print on the same side) and the tracking distance (the distance between the front hoof print and the subsequent hind hoof print on the same side). When the hind hoof steps behind the front hoof, the tracking distance is negative: We say that the horse is "not tracking up". When the hind hoof steps into the print of the front hoof, the tracking distance is zero and the horse is said to be "tracking up". When the hind hoof steps ahead of the front hoof, the tracking distance is positive and the horse is said to be "overtracking". Tracking up and over tracking are considered desirable because they indicate that the hind legs are stepping well forward beneath the horse's body.

However, any horse's tracking distance increases with the speed of his walk. Horses are not created equal in terms of their ability to overtrack; conformation and suppleness play important roles. In general, long legs and a short back facilitate overtracking, as does a laterally supple back. Horses with these attributes tend to show higher tracking distances than do those with short legs, long backs, and less laterally supple backs. The best way to increase overtracking in this gait is to improve the relaxation and flexibility of your horse's back.

Tempo

Ideally, a dressage horse maintains the same tempo (stride rate) in the different types of walks. Most horses maintain the walk tempo fairly well during transitions, although the collected walk tends to have a slightly slower tempo (about 52 strides per minute, as compared with an average of 55 strides per minute in the medium and extended walks).

Rhythm

The walk should have a regular four-beat rhythm in which each limb contacts the ground separately and distinctly. In a regular rhythm, the footfalls are separated by equal intervals of time. Therefore, one-quarter of the stride should elapse between each footfall. One of the visual characteristics of a horse that walks in a regular rhythm is that, as his hind limb swings forward, it forms a V with the front limb that is about to leave the ground (Figure 2).

Figure 2. Regular walk rhythm. The front limb (here, the left) leaves the ground just before the hind limb makes contact. The two limbs form a characteristic V. (Courtesy of Hilary Clayton)



Stance and Swing Phases

Every stride consists of a stance phase and a swing phase. The stance phase is the period when the limb is in contact with the ground and is supporting weight, and the swing phase is the period when the limb is off the ground. In the walk, the stance phase constitutes more than 50 percent of the duration of the stride - typical of gaits that lack an airborne phase. The hind limbs have a longer stance phase than do the front limbs, which is a general characteristic of collection. During the swing phase, the limb swings forward; and the longer the stride, the farther the limb must swing. To take longer strides, the limbs must have a larger range of motion around their pivot points. In the walk, the front limbs pivot around the upper part of the scapula; and the hind limbs pivot around the hip joint.

Movement Quality in the Therapy Horse

According to Jan Spink, M. A.1993, the therapy horse provides motivation, a secure base, and a source of movement input to the client. To accomplish therapeutic goals, the horse must be highly trained and responsive to select signals. Horses that are deemed clinically unsound by a veterinarian should not be accepted for the purpose of psychomotor or physical rehabilitation. This is a disservice to the clients, who miss the essence of the treatment and therefore the full effect that only properly trained, athletic, and balanced horses can provide.

A good therapy horse has basic movement characteristics that are similar to those of any good first-level or second-level dressage horse. The horse's movement should follow the golden rule of basic dressage theory: "Forward, relaxed, straight, and pure in gait." A horse that naturally moves this way can be developed to provide correct, therapeutically appropriate input. This type of horse is also more pleasant and comfortable to ride. A good therapy horse willing goes forward and stays on the bit for an amount of time that equals its fitness and level of muscle development. Its back appears rounded, with its hindquarters actively engaged. Its head should be at the vertical for working gaits. Its polls should always be the highest point, and its legs should track straight and true unless the horse is being asked to perform on two tracks as in lateral works.

According to Mary L. Longden, 1999 the fundamentals of dressage provide the foundation skills necessary for a good therapy horse. Dressage is the most appropriate training method for achieving whole-body balance, flexibility, strength, and lightness.

Behavioral Characteristics: Innate and Trained

Regardless of breed, there are a number of key behavioral areas to consider in the selection, training, and use of a horse for therapy purposes. These characteristics are as follows:

- 1. Bonding: The horse's general level of trust and respect for the handler from a perspective of herd dominance.
- 2. Submission: The horse's consistency in trying to comply in an obedient, cooperative manner with what was asked of it.
- 3. Desensitization: The horse's consistency in responding to training that rewards it for controlling more primitive flight-or-fight instincts when faced with unusual or potentially threatening stimuli.
- 4. Select Sensitization: The horse's ability to specifically tune in and become highly responsive to conditioned or select stimuli such as ground cues from therapist/handler that are part of a repertoire of therapeutic techniques and objectives.

RESEARCH QUESTION

Does the weight and symmetry of the rider affect the movement of the horse?

HYPOTHESIS

The overweight and asymmetrical posture of the rider effect the gait quality of the horse in a specific kinematics parameters, such as: velocity, stride length, tempo, lateral distance, and tracking distance.

OBJECTIVES

- 1. To study the effects of weight and postural symmetry of three different riders on the gait quality of a specific horse used in therapy.
- 2. To investigate the differences on velocity, stride length, tempo, lateral distance, and tracking distance of a specific horse's gait under four different conditions.

METHODOLOGY

This is a quantitative descriptive study which analyzed some specific kinematics parameters by a videographic analysis combined with a commercial Japanese Software Components - FRAME DIAS II.

Videography is a popular method of kinematics analysis in horses. Kinematics analysis measures the geometry of movement without considering the forces that cause the movement. Quantifies the features of gait that are assessed qualitatively during a visual examination. In this study the output is in the form of temporal (timing), and linear (distance).

In sound horses, the kinematics is quite stable, and analysis of a relatively small number of strides is representative of the gait pattern. It has been suggested that 3-5 strides are sufficient for kinematics analysis (Drevemo et al., 1980). The data describing an equal number of strides for each limb are averaged and considered to be 'representative' for that limb. The mean value is then used in further stages of the analysis as being representative of that variable for a particular limb in one horse. Most of the stride variables show good repeatability over the short and long term (Drevemo et al., 1980; Weeren et al., 1993), and the stride kinematics of a young horse have already assumed the characteristics that they will have at maturity by the time the foal is 4 months of age (Back et al., 1994).

STEPS OF VIDEOGRAPHIC SYSTEMS IN THREE DIMENSIONAL ANALYSES

- 1. *Skin Markers* This process consist in select 50 points, approximately, in the horse that are commonly used for skin marker placement for kinematics analysis. Appropriate markers are placed on the skin and the lighting is controlled to provide sufficient contrast between the edge of the markers and the surroundings
- 2. *Video Recording* In this phase, cameras will be used in different positions in a specific circuit. Side (right and left), front and back view.
- 3. *Calibration* For three dimensional studies a calibration frame with non-coplanar points is used. The accuracy of the calibration completely determines the accuracy of the final three dimensional data.
- 4. *Digitization* Through the process of digitization the coordinates of the body markers are determined in three dimensional spaces.
- 5. *Transformation* This process integrates the calibration information with the calibration information with the digitized coordinates to scale the data.
- 6. *Smoothing* During digitization small errors are introduced that constitute "noise" in the signal. As a guideline, a low pass digital filter with a cut-off frequency of 10-15 Hz is adequate for most videographic studies of equine gait.
- 7. *Normalization* Normalization of data facilitates comparixsons between different horses by standardizing certain parameters.

RIDERS SELECTION

In this study three specific riders were selected.

- 1. Subject Number 1 Male, 21 years old, 60 Kg, no disability and no experience on riding.
- 2. *Subject Number* 2 Female, 17 years old, 58, 65 Kg, Moyamoya Syndrome, a left hip dislocation and no experience on riding.

3. *Subject Number 3* - Male, 18 years old, 114, 15 Kg, mental disability and no experience on riding.

HORSE SELECTION

A Japanese Breed from Hokkaido, Dosanko, mare, 8 years old, 386 Kg, 1.39 cm. A sound and balanced mare, good ability to overtrack, without hoof shoes. She is used in a riding center - Shirane Horse Riding Welfare Park, small recreational therapy program, in Yamanashi, Japan.

STEPS OF RECORDING DAY



A special walking trail was prepared for this procedure. First the horse walked 88 meters and then recorded in four different conditions.

1. Condition " A": Horse + Horse Handler



2. *Condition "B"*: Horse + Horse Handler + Subject Number 1



3. Condition "C": Horse + Horse Handler + Subject Number 2



4. Condition "D": Horse + Horse Handler + Subject Number 3



PICTURES SEQUENCE



XII INTERNATIONAL CONGRESS OF THERAPEUTIC RIDING

RESULTS

	Condition "A"	Condition "B"	Condition "C"	Condition "D"
Velocity(m/s)	1.3	1.2	1.1	1.0
Stride Length (m)	1.55	1.53	1.44	1.35
Tempo (strides/min)	54	53	51	50
Lateral Distance (cm)	145	144	140	139
Tracking Distance (cm)	10	9	5	-8

Velocity and stride length were significantly lower in the conditions "C" and "D" than in the conditions "A" and "B". The tempo of the condition "D" was significantly slower than that of the condition "A". Most of the change in speed was result of alterations in stride length. In the walk, stride length can be expressed as the sum of the lateral distance (distance between the hind hoof and the next placement of the fore hoof) plus the tracking distance (distance between the fore hoof and the next placement of the hind hoof). The decrease in stride length at the walk was almost entirely due to a decrease in tracking distance. In other words, the horse showed less ability to overtrack in the conditions "C" and "D".

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THE INFLUENCE OF THERAPEUTIC RIDING ON THE BALANCE OF INDIVIDUALS WITH NEUROLOGICAL ALTERATIONS USING THE BERG

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INTRODUCTION

For the human being the preservation of balance and the stability of corporal posture are considered main functions, and when they are threatened, all the body's segments are recruited to perform the conservation of this balance (EDWARDS, 1999).

According to Enoka (2000) a system is in mechanical balance when the total sum of the forces that act upon it is equal to zero. However, this system is stable only if, after a perturbation, it returns to its initial balance.

The balance or postural control depends on the interaction between the muscle-skeletal system and the neural system. Are referred to the muscle-skeletal system: the muscle tonus, muscle power, the range of movement and, the coordination of the synergetic movement and the corporal arrangement that must be unchanged as to assure that the maintenance of the balance remains perfect (SHUMWAY-COOK & WOOLLACOTT, 2003).

Relating to the neural system we are referring to the sensorial system (vestibular, visual and somatossensorial) and to interpretation of these information in order to generate proper motor responses to the postural control (SHUMWAY-COOK & WOOLLACOTT, 2003).

The somatossensorial information also called proprioception, are based on information obtained from the receptors in the contact with the environment, through receptors in the skin, in the muscles, tendons, bindings, joints, and bodily organs. These structures are sensible to mechanical deformations in the body surface; they inform the body's position in the space, the direction and intensity of the movement as well (ROTHWELL, 1996; LATASH, 1998; apud SHUMWAY-COOK & WOOLLACOTT, 2003).

The vestibular system is related to the postural control, it's compounded by three components: a peripheral sensorial system, a central nervous system (CNS) and a mechanism of motor responses. The peripheral devices are movement sensors that send information to the central nervous system (cerebellum and vestibular nuclear complex) about the angular speed of the heard, the linear acceleration and the head orientation related to the gravitational axle (SHUMWAY-COOK & WOOLLACOTT, 2003).

The visual information are related to the shape, color, and movement of the objects and to the body itself, they are important but not essential for the postural control (HORAK & SHUPERT, 1994; apud SHUMWAY-COOK & WOOLLACOTT, 2003; WIECZOREK, 2003). The integrity of the muscle skeletal system assures the proper muscle power and the muscle tonus, allowing the execution of postural tonic reflexes (SANVITO, 2002).

Thus, when the group of visual information, labirintic and proprioceptive, is not correctly integrated in to the CNS, a perturbation of the state of balance occurs, heading to the possibility of fall and reduction of the level of independence (RIBEIRO & PEREIRA, 2005).

In neurological patients there is a large range of alterations that may interfere on the balance control. These variations are divided in two large groups: problems in motion components and/or in the sensorial components (SHUMWAY-COOK & WOOLLACOTT, 2003).

Regarding to the motion part, a discordnation (synergic disorganization of the muscle contraction) may occur, besides disorders of the postural arrangement, restriction on range of movement, changes in the muscle structure and changes in muscle function and muscle power, are muscle skeletal dysfunctions very frequent in neurological patients (SHUMWAY-COOK & WOOLLACOTT, 2003).

When there is a sensitive damage it's possible to happen a reduction of sensorial information, and also difficulty to integrate these information to the environmental requirements or even sensorial organization problems (HORAK & SHUPERT, 1994; apud SHUMWAY-COOK & WOOLLACOTT, 2003).

In the current study, involving patients bearing Cerebrovascular Accident (CVA), post operation sequel of cerebellum cancer and Cerebral Palsy (CP), that according to Ghez, 1991, and mentioned by Shumway-Cook & Woollacott (2003), they tendencies respectively to stand with then weight turned to the not affected side, and to stand in a large base of support and show contractures that result in alterations of the balance.

According Medeiros and Dias (2002), just by men/horse gravitation arrangement is possible to reach the nervous system, performing tasks like: tonic adjustments, improvement on balance, corporal conscience and arrangement, motor coordination and power muscle. The Therapeutic Horseback Riding (THR) or Hippotherapy may contribute because stimulate the various systems responsible for the balance, the vestibular system is stimulated mainly by changing of position, the visual system will be stimulated mainly by changes of the visual extension that the rider has when is on the horse. In the somatossensorial system there is a complete stimulation of the rider's body which is activated by the 3 dimensional movement of the horse causing a new proprioception (MEDEIROS & DIAS, 2002).

This sensorial motion experience involves also vestibular aferências, that stimulate answers of arrangement and balance of riders, like constant adjustments with the variation of the pace, speed and direction. Heat and adaptation of the rider to the horse rhythm demand simultaneous contraction and relaxing of the agonists and antagonists muscles providing a relaxed state which will help to reduce muscle spasticity (HEIPERTZ-HENGST C., 1994; apud FONSECA, 2004).

OBJECTIV

The main objective of this aims to analyze in a quantitative way through BBS - Berg Balance Scale (SHUMWAY-COOK & WOOLLACOTT, 2003) the effect of THR on the improvement of the balance in five disabled riders presenting different neurological conditions.

Besides this, this report intends to make stronger the suggestion of some authors in order to use this BBS on the assessment of neurological patients with balance deficit, since it's usage is more usual among aged population.

MATERIALS AND METHODS

Site of study:

This work was performed in the "Projeto Equoterapia ESALQ-USP" in Piracicaba, with the contribution of professionals and hippotherapy disabled riders. Participators:

Five disabled riders were selected and classified from A to E and it was necessary that they had the following skills: to stand without help at least for two minutes; to make a walk (with or without help); had preserved there capability to understand simple and complex orders and that they had a minimum score of 50 on BBS. The average of the disabled riders was equal to 36,6 (DP = 21,04), being 2 females and 3 male, 2 carried sequels of CVA, 1 bearer of post operation sequel of cerebellum cancer and 2 bearers of CP.

Procedures:

The disabled riders were assessed in the Assessment Room of the "Projeto Equoterapia ESALQ-USP" by the same assessor (initial and final) through BBS applied previously and after 10 sessions that occurred weekly lasting 30 minutes each.

Materials:

The necessary equipment for this assessment were a chronometer (or a ordinary watch with fingers of seconds) a scale or other instrument to measure distance, with scales of 5, 12.5, and 25, chair (of reasonable height) that should be with and without support for the arms, a step or a seat (as high as a step).

The BBS, developed by Berg in 1993 and adapted by Bronstein in 1996 is compounded by 14 common tasks that involve dynamic and static balance such as to reach, to turn, to move, to stand and to get up. Each item may punctuate since disability (score = zero) till a level of independence (score = four) for every function, reaching the maximum of 56 points (MIYAMOTO *et. al.*, 2004; BERG *et. al.*, 2003).

For the disabled ride's therapeutic process it was used a horse prepared for THR, a special array, **bridle**, and **longe line**, and other materials as sticks, bolls, arcs to accomplish exercises aiming to improve as much as possible the balance.

To analyse the results Test t was used with index of significance p \pm 0,05.

RESULTS AND DISCUTION

The option for BBS was due to the fact that it is a scale with great sensibility and specificity which according to Shumway-Cook *et. al* (1997) is 91% and 82% respectively, besides being simple in its application and equipments it doesn't require much time for its application.

The table 1 reports the list of five disabled riders that were submitted to treatment, as well as their BBS scores and average initial; BBS score and average final.

Disable Rider	Sex	Pathology	Initial Score	Final Score
А	Male	VCA	48	50
В	Male	СР	29	32
С	Male	VCA	50	52
D	Female	Post operation sequel of cerebellum cancer	37	43
E	Female	СР	48	48
		Average	42,4	45

Table 1 – List of Disable Riders

The result reveals a statistically significant difference p=0,028 which may be observed in figure 1 by means of comparison of initial and final scores of each disabled rider, where there is, with exception of E, an evolutionary tendency.



Although disabled rider A had reduced his punctuation in tasks 10 and 13, he presented a gain in his general balance due to a better accomplishment of tasks 8 and 14, showing then a initial punctuation 48 and final score 50.

In the same way the disabled rider B, presented a reduced score in tasks 7 and 12 but through his overall punctuation, initial punctuation 29 and final punctuation 32, given by gains in activities 1,4,5,9 and 10 it was possible to observe a improvement in his balance.

In the case of disabled rider C, it wasn't perceived any reduction of punctuation, only gains in tasks 11 and 14, what made his punctuation to go up from 50 to 52.

The disabled rider D also didn't show deficit in his punctuation in any task, only gains in tasks 7,8 and 12, presenting a initial punctuation 37 and final 43, performing the best result of the above mentioned cases.

However, the disabled rider E, although she had presented a better performance in task 12, she didn't change her overall result, because she fell down in two other tasks, having her initial result kept in 48.

According Berg and co-workers, 1992, cited by Shumway-Cook & Woollacott (2003), the spasticity changes the muscle fiber properties, which contributes to the coordination deficits observed in disabled riders with spasticity. Thus, we may infer that one reason for the improvement of balance, assessed in this report, is due to the adequacy in the muscle tonus of the disabled riders that performed the treatment in hippotherapy.

Yet, Botelho *et al*, 2004, bring us after his research in order to check the influence of TRH in muscle tonus, that the 3-dimentional movement of the horse provokes on the rider several oscillations on horizontal, sagital and frontal levels, causing passive flex-extension of several muscle of the human being, which leads to a reduction of hiperexcitability of motoneurons alpha 10 contributing to a reduction of spasticity and causing improvement of the balance. Reinforcing the results obtained in this study Bertotit, 1988, cited by Fonseca (2004), evaluated the postural control changes in 11 disabled riders with spastic cerebral palsy, after participation in a 10 sessions program of hippotherapy were a statistically significant difference was found, having the stand posture being improved in 8 out of 11 disabled riders.

Similarly, Mc Gibbon *et al* 1998, also cited by Fonseca (2004), assessed the effect of hippotherapy in the characteristics of the pace, in energetic expenditure and motor function in five bearers of spastic cerebral palsy and all of them showed a decrease of energy expenditure during the walk, and a significant improvement in the motor performance, evaluated before and after the program by the test of Gross Motor Function Measure (GMFM). All the studies related to THR like this one, demonstrated significant improvement that will lead to gains in balance, both through the adequacy of muscle tonus and muscle power and by improvements in the posture and in the motor function or even through the activation of the sensorial system responsible for balance.

CONCLUSION

In this report it was demonstrated that with the use of BBS was possible to detect changes in the balance of neurological patients and not only in aged patients as this scale is usually applied.

Observing figure 1 it was possible to find out that the majority of disabled riders showed an evolution relating to their balance, which allow us to say that for most of the cases studied, the THR with a number of session equal to 10, proved itself as being efficient relating to the stimulation of balance, which is a statistically significant finding according to the average results, initial average of 42,4 points and final average of 45 points (p=0,028).

So, we want to emphasize that neurological patients should be submitted to a treatment with THR, because besides offering good results for the gain of the balance, this treatment is a complementary work, it's playful and very pleasant to whom practice it.

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THE EFFECT OF THE RIDING THERAPY IN THE POSTURE AND BALANCE AFTER STROKE: CASE REPORT

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INTRODUCTION

Hemiparesis is a voluntary movement deficit of side of the body, being a classic signal of neurovascular brain illness frequently associated to the stroke, resulting in sudden and persistent neurological deficiency (UNPHRED, 2004).

The hemiparesis leads a modification in position of body in relation to the gravity and the basis of support, leading to an asymmetry, with discharge of weight to the side not affected, promoting damage in the maintenance of the position and the balance, as well as difficulty to liberate the members for function (PAI et al, 1994). There are also account, of patients who resist any attempt of passive correction of its position, also pushed strongly to the hemiplegic side, as described in the Pusher Syndrome by Davies (1996).

Marisco et al. (2002) affirm that the erect position configures as the rest or balance position favored by the perfect sinergism between the agonist and antagonistic muscles, that with its harmonious tension keep the body in state of dynamic rest. However Shumway-Cook & Woollacott (2003), point out that the ideal alignment in the vertical position allows that the body is been in balance with a minimum consumption of internal energy.

In the individuals post-stroke the presence of equilibrium and balance reactions alter in accordance with the tonic abnormal degree and with the quality of the present voluntary motricity (UMPHRED, 2004). The attempts to keep the balance and the alignment are made by the remaining voluntary activities, generally insufficient (BOBATH, 1978).

The alignment of the body refers to the segments organization, as well as the corporal position in reference to the gravity and the base of support, being that changes in the alignment can be interpreted as a muscular skeletal impairment or a strategy to compensate other impairments (SHUMWAY-COOK & WOOLLACOTT, 2003).

The postural control is complex and depends on the integration between sensorial information that comes from the visual, proprioceptive and vestibular systems (NASHNER, 1982; SANVITO, 2002; SHUMWAY-COOK & WOOLLACOTT, 2003). Such ways supply information the position and the movements of the body in relation to the environment. Normally, these information are processed for neural structures, that produce motor reply reflected organized (CHANDLER, 2002), however in the people after stroke occurs a feedback
sensorial sequel abnormal of the periphery to the Central Nervous System - SNC (UNPHRED, 2004), what damage this reply.

The riding therapy is used as therapeutical resource for people who have of neurological pathologies, promoting a functional and motor improvement. According to Medeiros & Dias (2002), it is a therapeutical and educational method which uses the horse inside an interdisciplinary boarding, in the areas of the health, education and riding searching the hole development of human been of carrying people who have deficient and/or with special needs.

The riding therapy presents as main objective stimulate the tonic adjustments, improve the position, stimulate the laterality, improve the trunk and head control and promote an alignment corporal (SEVERO et al., 2000). There are still improves in the time-space coordination, corporal conscience project, inhibition of consequences, with consequent relaxation, what it can be very useful for the cases of spasticity and other alterations of muscular tonic (ANDRADE, 1999).

Another important point to show is that the disable rider is done in a full contact with the nature, providing application form of exercises of psychomotricity, of recovery and integration, complementing the conventional therapies carried through in clinics and doctor's offices. Being based on the following citation of Medeiros & Dias, (2002) which says that only for the gravity force alignment Man/horse, is already possible to set in the nervous system motion, reaching objective such as: improvement of the balance, tonic adjust, alignment and body conscience, motor coordination and muscular force, the objective of this study was to evaluate the effect of riding therapy on position and its direct relation with the balance in a hemiparetic disable rider post-stroke, through the use of the Biophotometry and Scale of Functional Balance (Bronstein et al., Berg Balance Test).

MATERIALS AND METHODS

This assignment was developed in the "Projeto Equoterapia ESALQ-USP" located Piracicaba city, counting on the contribution of the professionals and the volunteers of the project.

The disable rider A.S. is of the masculine sort, is 60 years old, hemiparetic to the right, with crural predominance, showing preserved sequel of stoke since 1995, cognitive one, and without communication difficulties. This was verbally invited to participate and received all the instructions and rights on the experimental procedures to be carried through.

The collection of the photographic images and the evaluation of balance was made in the evaluation room of the "Projeto Equoterapia ESALQ-USP", before starting riding therapy and after retaken ten sessions of the same one, being these carried out weekly with duration of thirty minutes.

For the accomplishment of the photos, was used a digital camera a SONY DSC W1 with definition of 5.1 megapixes, located at the height of the navel was used, to a distance of 180 cm of the simetrograf behind which it was found the disable rider. In the case of photos analysis the program Corel Draw 11 was used.

The photos had been made in the views: previous, lateral left, right lateral through the accomplishment of a series of initial photos before the session of riding therapy another series of photos soon after 10^a session to register the effect of the riding therapy on the corporal alignment and the balance.

The measures analyzed in the photometry in the lateral view had been: head protrusion; looking horizontality; thoracic kifosis; lumbar lordosis; and in the previous view had been: cervical dislocation of the average line; shoulders symmetry; nipples symmetry; dislocation of navel average line.

For the evaluation of the balance it was used the listed Scale of Functional Balance (Bronstein et al., Berg Balance Test) and materials as follow: metric ribbon, chronometer, a lower bench, the other highest one, a chair without arms and another one with arms and a small ball, everything for the accomplishment of the test.

The scale was developed by Berg in 1993 and adapted by Bronstein in 1996 and is composed for 14 items graduated of zero to four, with maximum punctuation of 56 points. The disable rider is instructed to keep a position for determined time. If he does not obtain or need of external assist to the execution of the task are deducted some points in accordance with the given assist (BRONSTEIN et al., 1996), beyond that the instructions to disable rider must be objective, always prioritizing the maintenance of the balance in all items (BERG, 1992; MIYAMOTO et al, 1996).

For the therapeutical process of disable rider, the horse used had a blanket with flexible handle, stirrup, being this used eventually for the execution of some activities, as for example, discharge of weight in the inferior members, besides materials as batons, balls and arcs for the accomplishment of exercises aiming the balance and position.

RESULTS AND DISCUSSION

In the initial evaluation the disable rider presented an asymmetrical position, with inclination of the trunk to the right, asymmetry of shoulders being the right lowest dislocation of navel average line to the right, this suggests that although to exist trend account to incline to the compromised side as in Pusher Syndrome (DAVIES, 1996), this disable rider does not present the other characteristics that was told as: corporal and space hemineglected, the injury side abandonment, compromised of the balance in the seated position, loss of the ambulatory capacity, visual and auditory deficit of the compromised side, monotonous voice and lack of the face expression. In this way the postural evaluation suggests accented reduction of the corporal sence in scapular waist and trunk of the right side provoking dislocation as accounted above.

Kendal (1995), salients that the standard position is that one which involves a minimum amount of effort and overload, and leads the maximum efficiency of the body. The dislocation of the several points of reference from the plumb line discloses the extension in which the alignment of the person is deficient. When visualizing the position in foot the plumb line, in this case, the line traced by computer, represents the average line of the body and a projection of the gravity line. It starts in middle of the way between the heels, extends to the top between the inferior members, through the average line of pelvis, column, sterni and skull. In the posterior view the reference line coincides with the average line of the head and with the thorns processes cervical and the head can't be inclined, nor twirled.

Table 1. Measured analyzed in the lateral sight: head protrusion (HP) (cm), looking horizontality (LH) (cm), thoracic kifosis (TK) (grade) e lumbar lordosis (grade).

	RIGHT		LEFT	
	PRE	POST	PRE	POST
Head protrusion (cm)	4,77	0,57	5,13	4,33
Looking horizontality (cm)	2,46	2,19	2,54	1,92
Thoracic kifosis (grade)	137°	143°	136°	137°
Lumbar lordosis (grade)	149°	149°	150°	152°

(PRE) Before the intervention; (POST) Immediately after 10^a intervention.

In accordance with table 1., the result of the photometric, referring to the criterion postural analyzed in the previous views, showed the differences between the images registered in the two evaluations before and after-therapy; to the end of the tenth session the disable rider presented improvement of static postural ability, as it can be observed through the improvement of symmetry. This is verified, because he got reduction of values to cervical dislocation of the average line: before:3,09cm, after:0,20cm; dislocation of navel average line: before:2,13cm, after:1,06cm; shoulders symmetry: before:2,76cm, after:1,33cm and nipples symmetry: before:2,26cm, after:1,50cm, coming close to the average line.

Table 2. Measures analyzed in the previous sight: Cervical dislocation of the average line (cm), shoulders symmetry (cm), nipples symmetry (cm) e Dislocation of navel average line (cm).

	PRE	POST
Cervical dislocation of the average line (cm)	3,09	0,20
Dislocation of navel average line (cm)	2,13	1,06
Shoulders symmetry (cm)	2,76	1,33
Nipples symmetry (cm)	2,26	1,50

(PRE) Before the intervention; (POST) Immediately after 10^a intervention.

In the lateral view, the plumb line, in this case, the line is traced by computer, which represents the gravity line in the medium-coronal plan, passes lightly in front of malleolus lateral, lightly in front of the axle of the knee joint, lightly posterior to the axle of the hip joint, on the bodies of lumbar vertebrae, shoulder joint, external acoustic meato and lightly posterior the apex of coronal suture (KENDAL, 1995). Through the qualitative analysis the position of the disable rider in the lateral view was presented with head protrusion, dorsal protrusion of shoulders, thoracic hiperkifosis, protrusion abdominal, antepulsion, characterizing a "clumsy position".

Analyzing quantitatively the postural criterion in the lateral view is observed the difference between the registered images in the two evaluations before and after-therapy (table 2.). For

studied items, the disable rider presented: head protrusion in cm, right side before:4,77 and after:0,57; left side before:5,13 and after:4,33. The final value suggests that the disable rider can have presented a rotational component and for being multidirectional, was not evaluated, but the head protrusion is suggestion for indirect measure of rotation and of this form the biggest dislocation line to the left could be associated the biggest rotation, moving away the ear lobe from the average line. For looking horizontality the values had been in cm: right side before:2,46, after:2,19; left before:2,54, after:1,92.

In the study realized by Duarte (2004), through the photometric evaluation, for comparison of the modified angle Cobb with the angle for tangent in 52 patients submitted to the functional bandage, observed that the value of angular average to thoracic region is $147,12 \pm 3,88^{\circ}$, and the value of angular average for lumbar region is $146,96 \pm 5,21^{\circ}$. In the case of this disable rider it can be observed by the analysis of the lumbar region that presents an inside value of physiological exactly the same as before the treatment and it was kept after the therapy. For the thoracic region, the disable rider presented an increase of thoracic kifosis, therefore the values were down of the reference values and this was kept without alteration post-cure (table 2.).

In the result of the evaluation of balance applied in the disable rider, it can be observed that it had increase of the general score in Balance Scale, being initial of 50 and end of 52, the improvements had been observed in following tasks;"11 - turning 360 degrees "and" 14 - in foot, supporting one of the feet ", having increase of a point for each one of them. This means that for the item 11 the disable rider was capable to turn 360 degrees for the two sides with bigger security and in a lesser time and with adequate discharge of weight and before it made only to a side; as for item 14, it was capable to raise the leg independently and to keep for more than 10 seconds, what before he made with less time.

It was possible to observe from the above described data, that it was an improvement on the postural alignment through the improvement of the symmetry observed for the difference of height of shoulders and nipples and for dislocation of navel average line beyond the best cervical positioning observed by the values of head protrusion, looking horizontality and cervical dislocation of the average line.

So, one suggests that the riding therapy can have aided on the improvement of the balance, on the improvement of the cervical positioning and symmetry , since the disable rider did not carry out another therapeutic activity. As also observed for FREIRE (1999), the riding therapy provided a motor improvement on the head, trunk and hip of the disable rider, beyond to influence in the development of the corporal scheme, organization secular space and improvement of the balance, observed for the increase of the punctuation of Scale of Functional Balance.

CONCLUSION

The results gotten in this study, in the used experimental conditions, had shown qualitatively and quantitatively the riding therapy can be a therapeutic supporting method on the treatment of stroke carriers, for besides contributing with the postural control also has influences on the functional balance.

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RIDING THERAPY: WHAT THE PRE-SPORTING PHASE CAN DO TO HELP THE DOWN SYNDROME PATIENT

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SUMMARY

Introduction: As a technique, Riding Therapy has been providing biopsicosocial benefits in the areas of Health, Education and Horsemanship, among them the adaptation of the muscular tonus, the coordination, equilibrium, the development of the strength, the corporal self-understanding, the self-confidence, the sociability. Those acquisitions are important in the treatment of the several physical or mental pathologies, among them the Down Syndrome. Objective: To evaluate the evolution of the Down Syndrome patient in the pre-sporting phase, specially, in the jumping and in the sand track Methodology: As a case study, this research was characterized by being descriptive and exploratory, aiming to demonstrate through qualitative analysis, the evolution of a Down Syndrome patient. The technique used for the collection of data was an extensive direct observation, using a therapeutic plan directed to the patient and her needs in the pre-sporting phase being these therapeutic situations developed in the Center where the cited research was accomplished, in the period from January to December, 2005. Results: The patient became able to obey simple orders, reduced the necessity of being helped in some daily life activities such as dressing and feeding; improved the interaction with the environment, was able to understand concepts such as: up, down, tall, short. Conclusion: The means of reaching the objectives in that therapeutic modality is the horse, because this practice demands the participation of the patient whole body, of all her muscles and of all her articulations. It can be verified that Riding Therapy brings complementary benefits but it does not substitute other therapies. No therapy type proposes the cure but it helps in the treatment according to the limits of each individual, providing a better quality of life.

Key words: Riding Therapy; Down Syndrome; Quality of life.

INTRODUCTION

As a technique, Riding Therapy has been providing biopsycosocial benefits in the areas of Health, Education and Horsemanship, among them the normalization of the muscular tonus, the coordination, the equilibrium, the development of the strength, the corporal self-understanding, self-confidence, the sociability, among others. Those acquisitions are important to the treatment of several physical or mental pathologies, among them the Down Syndrome.

The Riding Therapy ppatient is taken to follow the movements of the horse, having to maintain the equilibrium and coordination in order to simultaneously move trunk, arms, shoulders, head and the remaining of the body according to her limits. The three-dimensional movement of the horse leads to a displacement of the patient's gravitacional center, improving the equilibrium, normalization of the tonus, the postural control, the coordination, the reduction of spasms, breathing and proprioceptive information, stimulating not only the functioning of the articulatory angles as well as the ones of the muscles and blood circulation.

There is a range of professionals that work together in the Riding Therapy, such as: physiotherapists, speech therapists, occupational therapists, educators, fitness teachers, horsemanship instructors, psychologists and doctors resulting in interdisciplinary and multidisciplinary work.

In this method, the horse acts as a kinesthetic-therapeutic agent since its three-dimensional rhythmic movement stimulates the metabolism, regulates the tonus and improves the cardiovascular and breathing systems, acting in the extra-pyramidal systems as a facilitator of the teaching-learning process as well as a social and reinsertion agent.

The horse is the means to reaching the objectives in that therapeutic modality since this practice demands the participation of the patient's whole body, of all her muscles and of all her articulations. The rhythmic, precise and three-dimensional movement of the horse that moves forward and back / for a side and for the other / upward and down / when walking can be compared to the action of the human pelvis when walking, allowing sensorial entrances at every minute in form of deep proprioceptive, vestibule, smell, visual, auditory and kinesthetic stimulations.

The Riding Therapy makes possible a concrete and human relationship, mediated by the horse and horsemanship techniques done in cooperation with a multidisciplinary team. This therapeutic method complements the evolution of the speech process of development of the child and favors her independence, considering the individual differences and having her potential development as reference.

The objective of this research was to evaluate the evolution of the Down Syndrome patient in the pre-sporting phase, I mean, in the jumping and in the sand tracking aiming at a better social insertion.

In João Pessoa, the Riding Therapy Center where the children are assisted at the Exhibition Park, named Center of Riding Therapy of Paraíba (CENEP) created since October, 2000. Now, it assists to the most several pathologies, reaching expressive conquests.

According to Mustacchi; Peres (2000) the Down Syndrome is observed in the whole world, independent of culture, race or social class. It happens due to an anomaly of the chromosome 21, usually under the form of chromosome 21 supra numerary - Trissomia - resulting in a total of 47 chromosomes.

In Riding Therapy the Down Syndrome patient is evaluated by the doctor through the ray-X with the purpose of verifying the existence or not of the atlanto-axial instability caused by the laxity of the ligaments of the first vertebras of the cervical column. The existence of the instability is a contraindication for the practice of the Riding Therapy. The incidence of this instability goes around 10 to 20%. In the Down Syndrome the therapeutic practice is only allowed to start from three years old on.

The Down Syndrome patient is taken to follow the movements of the horse, through horsemanship exercises, trying to maintain the equilibrium and coordination to move trunk, members and head simultaneously also working low tonus, lack of attention, concentration and hyperactivity which are Down Syndrome characteristics. With the maintenance of the posture, it is obtained a better breathing, and as consequence, an increase in the speech development and of the vocabulary.

The activities done during the therapeutic sessions are identified as initial interaction with the therapists, interaction with the horse, mounting, command to start walking, observation of actions, objects and people; playful activities that include: guided verbal activity, space location and sung toy; the good-bye to the horse; the dismounting; and the good-bye to the therapists.

METHODOLOGY

This research was characterized by being descriptive and exploratory as case study, and it intends to describe through qualitative analysis the evolution of a patient in the pre-sporting phase, I mean, in the jumping and in the sand tracking, aiming at a better social insertion. The procedure used for the collection of data was the one of intensive direct observation comparing each variable to the presented patient's state, before the observation and after the therapies.

The universe of the research was constituted by a Riding Therapy patient, female, six years old, who presents a hypothetical diagnostic a secondary speech delay Syndrome of Down assisted in the Riding Theraphy Center of Paraíba - CENEP in the period from January to December, 2005. This child was properly regulated and authorized for this study, according to the Resolution 196/96, of the National Council Health.

In relation to the used instrument, it was elaborated the matrix analysis of the playful activities done based on the exercises proposed by CENEP. This matrix was the basis to the qualitative analysis and it contains the categories of the identified activities in the of Riding Therapy, such as: as initial interaction with the therapists, interaction with the horse, mounting, command to start walking, observation of actions, objects and people; playful activities that include: guided verbal activity, space location and sung toy; the good-bye to the horse; the dismounting; and the good-bye to the therapists.

These categories of activities were evaluated according to the following parameters:

- Initiative (the child's action proposing or executing **activities done by the child** before the therapists' command);
- Attention and Concentration (the child's current expressions that evidence attention and concentration in the **playful activities** proposed by the therapists);
- Limitations presented by the child (resistance to the accomplishment of the most complex tasks and the perseverance demonstrated in the proposed activities; comfortable of winning her own limit)
- **Relative progress in relation to the social insertion** demonstrated through the increase of independence in relation to the daily life activities.

RESULTS

The favorable results obtained through the Riding Therapy are due to the differential of using the animal, what allows to work more the affection, the autonomy of coming and

going. "The connotation of freedom, of moving around is essential and, besides, there is the physical gain, provided by of the horse, besides the emotional gain ", according to the National Association of Riding Therapy (2002).

It was observed a greater initiative in relation to the attention and the concentration as well as the accomplishment of the activities proposed by the therapists. The incentive to the contribution to the playful activities accomplished along the sessions, demonstrate that the Riding Therapy, when seen in its totality, contributes in a positive way to the development of the independence and social insertion because they help in the growth and improvement of life quality.

In spite of the difficulties presented by the child in accomplishing some tasks and of the fears of transposing those difficulties, to surpass her own limit, this study showed that the use of the sung toy could provide the auditory stimulation, the melody and the vocal rhythm as well as a spontaneous progression and the evolution happened little by little from the simplest activity such as " make-believe " that picks the fruit from the tree, cuts and eats it up to the most complex such as inserting the ring in the cone with the horse walking, to trot and to dominate the reins, where we can observe an evolution in relation to the psychomotor domain.

Besides the considerations above, the results of this study allow us to affirm that the horse can transmit stimulus that go beyond the three-dimensional movement, acting in the development of the psychological and cognitive functions; such functions were mentioned by Vygotsky (OLIVEIRA, 1997) when he tells that the speech is a psychological function, characteristic of the human species. The horse could be seen as a mediator of the attention, concentration and initiative both of the patient as of the therapists, representing a union factor, a link that is established since the first session when the animal is presented to the child. It is then established a mediator entail among the emotional, calm and reciprocral relationships between the patient and the team, making the process of development of the oral intrapsychic and interpsychic language.

In Riding Therapy there is the possibility of providing activities that develop the responsibility in a balanced way, causing the increase of self-esteem and independence through commands on the horse, and at the same time, inducing to the learning of a solidary function through the helpful activities.

The horse is the intermediate object that makes possible the emergence of the questionings in an enriched way, allowing the therapists to intervene in the appropriate moment. The richness of the stimulus and the motivation for the presence of that animal provide that the therapists can build a wide repertoire of activities, what suggests that this therapy is able to provoke a strong impact on the development and, this way, to positively influence in the patient's social insertion.

DISCUSSION

After a year of riding activities, the results obtained with the work were tested in relation to the playful activities directly related the psychomotricity since this is a science that studies the human being through the movement of the body and the relationships with the internal and external world, used in the Riding Therapy, as well as the ones that the patient is able to do, and the regular time foreseen for the automation of each activity.

In relation to the body aspect, Wallon (apud ANDE-BRAZIL, 2002) reports that this is an indispensable element to the formation of the child's personality. In the Riding Therapy, it is through the development of the body aspect that the child becomes conscious of her body and of the possibilities to express through that body. The child in this study showed discernment about this type of activity after four months of treatment.

The space organization, Tasset (apud ANDE-BRAZIL, 2002) when mentioning the orientation and the structuring of the external world, refers first to its group of elements, later the other objects or people in static position or in movement. In the Riding Therapy it happens firstly the conscience of our body in relation to the environment, together with the things and with the people that surround us. It would be the possibility for the subject organizing himself face the world that surrounds him, of organizing the things to each other, of situating him in a place, and of moving them. The child presents fluctuations in relation to the development of that type of activity since it is considered complex for his understanding level.

With relationship to the laterality, the child got to accomplish the automatism of this activity after eight months of riding sessions since the complexity of this activity also requires a development of the cognitive patterns. Limongi (2000) says that the motor activity and the learning activity initially walk together; the learning leads to the construction of new relationships.

In relation to the temporary orientation, this activity corresponds to the capacity to relate actions to a certain dimension of time, where successions of events and of time interval are fundamental. The patient presented automatism of this function from the fourth month of the sessions. According Medeiros and Dias (2002), the temporary organization is provided by the cadence of the step of the horse (rhythm) and also by the structuring of each session, having beginning, middle and ending.

The global coordination according to Costallat (apud ANDE-BRAZIL, 2002) is defined as the simultaneous action of different muscular groups, with the purpose of getting wide and voluntary movements more or more complex, involving mainly the work of inferior members and trunk. It is also referred to the activity done with effort after ten months of therapy since the patient presents good control of muscular force.

The acquisition self-confidence is the first item to be developed in the sessions since this is the basis to settle down an entail among horse-horseman having to be put in practice with the approximation of the patient being conducted by the therapist. The process of taking the horseman to lose the initial fear for the animal is developed through the physical contact, of the simple gesture of caressing the horse in order to feel its hair, noticing the difference between "our skin and the skin of the animal ".

The Independence support was developed in the sense that the patient could acquire freedom of movements, the execution of the command of the dismounting; the psychomotricity exercises; the capacity to maintain herself on a sustaining basis of the body, in other words, while riding they were intended to the use of the legs for obtaining muscular strength and the liberating of the hands from the saddle with the purpose of developing safety and emotional independence. The search for flexibility and the disembarrassment referring to the patient's position; nowadays with the help from professionals, they are obtained through movements that indicate the relaxation of the articulations; the flexibility of the shoulders, arms and fist; and complementing, the flexibility of the lumbar area.

CONSIDERATIONS

The means to reaching the objectives in that therapeutic modality is the horse, since this practice demands the participation of the patient's whole body, of her muscles and of all the articulations.

From the earlier childhood the child is exposed to countless interaction possibilities with the most varied social environments, as well as with her own behavior. The social insertion is a factor that helps in human development and as it grows, these interactions are kept and make her conceptual behavior more complex, based in controls through more and more sophisticated stimulus.

The greatest reward is to have the certainty today that this research surpassed the proposed objectives since the barriers of fear and the limitations presented by the child could be transposed and the road to the development in a harmonious way was found.

It can be verified that Riding Therapy brings additional benefits, but it does not substitute other therapies. No therapy type proposes the cure but it helps in the treatment in accordance to individual limits, providing a better life quality.

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RIDING THERAPY AND MOTOR POINTS OF THE FACE: ACTIVE ELONGATIONS IN PATIENT WITH CEREBRAL PALSY

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SUMMARY

Introduction: The use of the active elongations related to the motor points of the face is an alternative to the Speech Therapy and, in the Riding Therapy, it is adapted to the horseback riding bringing benefits to their patients and allowing the adaptation of the oral structures and the favoring of the development of the articulation of the words. Objective: To apply techniques of active elongations in patients with cerebral pulsy, and to verify the evolution of the oromiofunctional alterations and of the articulatory patterns. Method: As a case study, it was characterized by being descriptive and exploratory. The technique used to collect data was the extensive direct observation and important notes contained in the medical register that annotates the therapeutic situations developed in the Riding Therapy Center of Paraíba (CENEP). Results: By doing the active elongations there was the diminishing of the alterations of the orofacial structures in relation to the motor functions and the mobility of lips and tongue as well as the adaptation of the suction functions and swallowing proving that the riding therapy provided the practitioner the tonic adjustment through the threedimensional movement of the horse, of the different paces, together with the maneuvers applied by the therapists, also resulted in better articulatory patterns. Conclusion: Benefits were observed in relation to the orofacial alterations, being considered the limitations of the patient, because through the Riding Therapy there was the improvement of the patient potentialities as well as of his muscular pattern.

Key words: riding therapy; cerebral pulsy; active elongations.

INTRODUCTION

The therapeutic riding method acts through the three-dimensional movements of the horse (latero-lateral/antero-subsequent and longitudinal), that transmit a great amount of different pulses for the patients. The interaction horse-horseman propitiates gains in the biological part: posture control, normalization of the muscular tonus, improvement of the motor coordination, reduction of spasms, tactile and vestibule stimulation, among others. In the psychological part, it provokes the increase of self-esteem, of self- trust and of self-determination. In the social part, the largest integration with the family, that usually participates of the process in an active way, and also with the friends.

In the speech aspect it helps in the development of the speech and the adaptation, or even the minimization of the alterations found in the oral communication, as well as the stimulation of the development of the psychomotor capacity; it also looks for a better structuring of the stomachal functions and the reorganization of the tonus and of the speech organs, seeking for the physical, cognitive and emotional development of speech and for children and adults with mental, social, emotional and speech disturbances. The competence of the speech therapist in the therapeutic riding is commonly the clinic one and, according to the responsible Council, it consists in: to evaluate the practitioners, to trace appropriate methodologies, to participate in the choice and making of the didactic materials; to participate in the elaboration of projects; to develop prevention works related to the area of written and oral communication, speech and audition and, finally, to make directions, in case the patient needs specific therapies besides the treatment that is being developed.

The bearer of special needs, that presents a significant delay in the elementary motor functions, reflects that situation in his psychomotor behavior, harming and dephasing the global development. In this sense the therapeutic riding comes as facilitative, providing the interaction to the physical and social environment, and working the relationship between the subject's conscience and the world that surrounds him/her. This therapeutic method completes the process of development of the speech and favors its independence, considering the individual differences, having his development potential as a reference.

The Riding Theraphy Center of Paraíba - CENEP, located in João Pessoa, where this research was developed, uses this complete method, that is, riding therapy. Functioning since October, 2000, it works with several pathologies, such as: Cerebral paralysis, Autism, Disartry due to Cerebral Paralysis, light Motor Disturbance, Down Syndrome and Dande Walker Syndrome. Those pathologies cause delay in the neuropsychomotor development, motor, physical, linguistic and learning *deficits*.

The chronic non- progressive encephalopathy can be defined as a neurological incapacity caused by a lesion in the motor centers of the brain. It generates not only a loss of the functional muscular control, but also causes alterations of the sensorial system. Such alterations should happen in the first two years of the child's life, that is the most important period of neurological maturation as well as where it happens the first acquisitions in the motor and perceptual levels (LIMOGI, 2000).

According to Finnie (2000), Cerebral Paralysis (PC) it is a disturbance and posture nonprogressive movement, but it is constant and begins in the first years of life. It is caused by the damaging to the immature brain, in other words, it always begins in childhood years.

The patients with PC present problems in the oral structures, which, according to Marinelli, present some difficulties that manifest themselves with much frequency (ADVANCED COURSE, 2003).

In the jaw, the quick ability to transfer food to and fro and precise movements of the lips can be absent. The head back - open jaw, difficulty in closing it, excessive movements of opening and closing in suction - the breast-feeding is slow and lengthy, ingestion of air (causing colic).

The tongue presents associated movement of the head, as well as of scapular waist and of neck, and these can influence the width and the type of movement of this structure. The neck retraction, in other words, tip of the chin returned upward, language retraction (decrease of the oropharynx - decrease of the passage of air), the child's attempt of tensioning the back in the hard palate, to avoid harming the breathing, problems with feeding, hindered suction, and sounds of the speech.

The lips and cheeks are structures that work together. The low muscular tonus - cheeks do not create a barrier sufficient enough for the food to move against the gum and the teeth - they fall in the vestibule – the lips do not close – it is difficult to maintain the food and saliva inside the mouth. High muscular tonus - lips and cheeks are impelled out of the retraction - it hinders suction, introduction of spoon and body - transferring of food - wrinkled lips can be found in the attempt of reducing the retraction.

There is an influence of the stomachal components in the normal speech production and this influence are demonstrated through the authors that report that the articulation of the sounds requires an appropriate breathing flow, good functioning of the valve with soft palate, tongue, lips, dental and alveolar structure sufficient to maintain the labial tonicity, freedom of movement of the jaw and an intact nervous system. (FELÍCIO, 1999).

The objective of this research was to apply techniques of active prolongations with practitioners of cerebral paralysis, and to verify the evolution of the oromiofunctional alterations and articulatory pattern.

METHODOLOGY

This research was characterized by being descriptive and exploratory as case study. The technique used for the collection of data it was the one of intensive direct observation during the therapeutic situations developed in the Riding Theraphy of Paraíba (CENEP).

The data collection was accomplished from abril/2005 to abril/2006 period. In relation to the interpretation of the data, this was obtained through the qualitative method of the data on each questioned aspect.

The first step consisted of analyzing the contribution of the playful activities to minimize the oromiofunctional alterations; the second step was the identification of the different types of postures accomplished along the sessions that favor the adaptation of the stomachal system; the third step was to describe the presence of difficulties in accomplishing the activities presented in relation to the motor oral *deficit* presented and to conclude, the analysis was proceeded through the handbooks registering the development reporting on the decrease of the practitioner with PC oromiofunctional alterations.

The universe of the research was constituted of a six years old patient, male, that is attendance once a week, in a thirty minutes session, in the city of João Pessoa, in the State of Paraíba. This patient presents as a speech diagnostic hypothesis: language delay and oromiofunctional disturbances due to the cerebral paralysis. For this research the main focus was given to the oromiofunctional disturbances, which received therapeutic attendance regarding to the active prolongations.

The exercises used in the patient followed a miotherapic approach with stimulation of motor points of the face, reinforcing the distention of the stimulated muscular fibers, looking for improvements of the oromiofunctional alterations and articulatory pattern.

RESULTS

With the execution of the active prolongations there was a minimization of the oromiofunctional alterations in relation to the motricity nd mobility of the lips and tongue and the adaptation of the suction functions and swallowing proving that the riding therapy provided to the patient a tonic adjustment through the three-dimensional movement of the horse, of the different walkings, together with the applied maneuvers for the therapists, also resulted in a better articulatory pattern.

Activities such as to wrinkle the forehead (FT), angry face (AF) and closing of the eyes (FO), were accomplished in the face, with the patient initially presenting difficulties in the oral motor system, resulting in deficit in the mobility and motricity of such structures. However, during the development of the sessions, at the end of one year it was noticed significant improvements in relation to the movements before accomplished with a lot of difficulty.

In the lips, the proposed exercises were the beaked mouth (BM), open smile (OP), united lips crack (ULC) and reserved lips crack (RLC). During the execution of these exercises, the inferior lip always subverts and through the repetition of the movements and the correction during the sessions, the patient already gets to accomplish such movements without subverting the inferior lip.

Lermontov (2004) reports that in a riding therapy patient the responsible muscles for the production of the speech are influenced by the three-dimensional movement of the horse. That gives an impact in the muscles of the oral cavity, in the vocal pleats, in the muscles of the larynx and in the muscles of the breathing.

In the patient with PC the motor function is affected since part of the brain was harmed and consequently it could have no improvement. Puyelo (2001) affirms that the motor problems of expression in the cerebral paralysis can be multiple and affect in different ways, according to the case, the individual's expression.

In the riding therapy, the rhythmic, slow, uniform and constant movements of the horse provoke in the patient a relaxing and sedative lulling, stimulating a decrease in the level of muscular tonus. This way, the spasticity, for instance, is reduced with the rhythmic movement of the horse. The increase of muscular tonus is obtained by the information given by the hazing, for being this a vertical and saltatory movement or for the prolonged step, which determine a very stimulating reflex action, favoring the increase of muscular tonus (LERMONTOV, 2004). This results in favorable postures to the riding therapy patient with tonus alterations that will also favor the decrease of the oromiofunctional alterations related to the muscular tonus.

In the tongue, "beaking" exercises (BE) and rotation (R). These exercises were proved to be complex for the patient where he ignored the place where the tongue would be because he had difficulty in the proprioception, being still executing up to the current days those movements with difficulties.

The use of the active prolongations, referring to the motor points of the face is an alternative of the speech therapy which can be used also by the riding therapy reaching positive results.

CONCLUSION

The riding therapy contributes to minimize the oromiofunctional alterations found in the patient with PC, which associated to the active prolongations, contributed in a significant way in the minimization of those alterations since it uses the different walkings of the horse, the different types of walkings, the applied stimulus via marrow up its reaching of the Central Nervous System, of the three-dimensional movement, of the tonic adjustment and of the activities that the therapists develop in each session, also resulting in the reports of the relatives, that after the employment of such exercises there was improvement in the articulatory pattern.

Benefits were observed in relation to the oromiofunctional alterations, being considered the patient's limitations, because through the riding therapy, there were the maximization of the patient's potentialities and improvement of his muscular pattern.

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THERAPEUTIC HORSEBACK RIDING RESULTS ON MUSCULAR TONUS OF LOWER LIMBS AND MOTOR PERFORMANCE ON CHILDREN WITH SPASTIC CEREBRAL PALSY

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INTRODUCTION

Cerebral Palsy may be defined as a central nervous system abnormality of non-progressive character and it is not considered a disease but a group of cerebral chronic disturbance due to some injury or abnormality of the development occured during fetal life, birth or up to the first three years of age (LIANZA, 1995). In general, children who have cerebral palsy find difficulty in keeping the balance in the action of muscle groups for a smooth, coordinated and efficient motor performance; instead, they use the agonist muscle more frequently (TECKLIN, 2002). The palsy of the quadriplegia type is the most severe and it's usually associated to spasticity (TACADIJEAN, 1995) and its cause would be explained by a lessening in the pre-sinaptic inhibition of the alfa motor neuron, resulting on an exaggerated gain on the strain reflex (CASALIS, 1990). In this pathology, there is injury on the SNC which results in a tonus alteration, leading to deficient movements. For the occurence of a normal motor function, some factors must be considered, among them: normal posture tonus, exchanging inervation, motor-sensory feedback and feedforward, balance, rectification and protection, reactions and biomechanical properties of the muscles (EDWARDS, 1999).

Thus, in the Cerebral Paralysis the neurological damage, it is manifested by several physical inability. In certain conditions, the presence of abnormal tonus dominates the picture. Environmental factors, as correct positioning and movements to maintain and, when necessary, to recover the muscle and the width to articulate, they are essential to guarantee the great level of each individual's function (EDWARDS, 1999).

Therefore, the importance of a treatment with the objective of counting on the plasticity advantages and neuron adaptations is underlined, making it possible for the child to experience movements and postures to which he/she would not have maintenance possibility due to his/her neurological state. So, it's necessary a team work and yet, parallel to the basic treatment, the horseback riding. (BOTELHO, 2003)

The therapeutic horseback riding was selected, which according to ANDE-BRASIL, is a therapeutic and educational methodology that uses the horse within an interdisciplinary approach in the areas of health, education and horseback riding, searching the bio-psychosocial development on people with deficiency and/or special necessities.

When the horse moves at the walk, it produces a three-dimensional motion on its back, in the three axis, up and down, forward and backward, to the right and to the left, besides a rotational component which makes the horse's pelvis suffer a rotation as if it were walking. The benefits on this therapy occur because stimulus are generated with rhythm, amplitude and speed capable of decreasing the muscular tonus through the slow vestibular stimulation. The proprioceptive information that the disabled riders receives when he/she is on the horse favours the muscular tonus adaptation and facilitates the normal motor function (FREIRE, 1999).

OBJECTIVE

To analyze longitudinally the results of the therapeutic horseback riding on the muscular tonus alteration of lower limbs and motor performance by using respectively the Muscular Tonus Evaluation Scale Durigon and Piemonte(1993)- pre and post therapy and GMFM Evaluation on children having the Spastic Type Cerebral Palsy.

MATERIALS AND METHODS

This study was carried out under the "Projeto Equoterapia ESALQ-USP" (Agriculture Major School Luiz de Queiroz- University of São Paulo), in the city of Piracicaba- S.P. Seven disabled riders were evaluated-ages between four and twelve- all having the cerebral palsy.

Table 1: Disabled riders classified	ed in agreement with eti	iology, topography, ton	us and GMFCS:

Disabled riders	Etiology	Topography	Tônus	GMFCS
A.A.R.	Perinatal Asphyxia	Quadriplegia	Mixed	Level V
D.S.V.S.	Prematurity	Quadriplegia	Mixed	Level V
G.M.C.	Congenital heart disease	Diparesis	Mixed	Level III
G.C.F.A	Perinatal disturbance	Diparesis	Spasticity	Level III
G. H.S.	Prematurity	Quadriplegia	Spasticity	Level V
J. D.G.R.	Postparturition convulsion	Diparesis	Mixed	Level III
T. M.S.	Perinatal disturbance + hydrocephalus	Diparesis	Spasticity	Level II

Several horsemanship materials were used, among them, blankets, stirrups, saddles, selected according to each clinical case.

The disabled riders were evaluated through the GMFM before the first session and before the eleventh session, or better, each patient was submitted to ten therapeutic horseback riding sessions. They were weekly, lasting 30 minutes each.

Motor performance evaluation was made through GMFM which is a standardized observation instrument and enables the evaluation of how much a child performs of gross

motor function, being made of 88 items divided into 5 dimensions: A) Lying and rolling; B) Sitting; C) Crawling and kneeling; D) Standing; E) Walking, running and jumping. It is acceptable to do the test in any order, tends the child 3 attempts for each item, and the attributed score will be it of the best performance, besides the child to have to accomplish the movements spontaneously without the examiner's help, that can only aid with verbal commands. The punctuation of the scores is based on a scale of 4 points for each item, in the following way: 0 = it doesn't begin, 1 = it begins (smaller than 10%), 2 = partially it completes (larger than 10% and smaller than 100%) and 3 = it completes (100%) (RUSSELL et al, 1993).

The disable riders were classified in agreement with the Gross Motor Function Classification System (GMFCS). This is based on the solemnity-initiate movement, contends five levels differentiated to each other by the functional limitation and need of external attendance (PALISANO et al, 1997).

The children of the level I of GMFCS have scores (%) larger in GMFM, they are children whose functional limitations are not so pronounced, he/she has diagnosis of light PC or with low severity. In the level II, the children present difficulties in accomplishing motive functions as to run and to jump. For the level children III in GMFCS there is difficulty in swinging and mobility, affecting mainly the independent march without auxiliary device. In relation to the level IV, there is just functionality in the seated posture. The level V of GMFCS is children with multiple disorders that present restrictions in the voluntary control of the movements and in the ability to maintain posture anti-gravitational of the neck and of the log, presenting sustains low in GMFM (PALISANO et al, 1997).

Muscular tonus evaluation was also carried out with a score from 1 to 10 according to Durigon and Piemonte, 1993, pre and post therapy. This evaluation was performed in a room using a stretcher, always done under the same evaluator. The studied motions were ankle dorsiflexion and hip abduction with the patient in a lying down position, knee flexion and extension and hip extension in lateral lying down position, always with the child in a midline position.

For statistical analysis, a "t" test with meaning of pd" 0,05 was used.

RESULTS AND DISCUSSION

Based on data obtained from the Muscular Tonus Evaluation Scale Durigon and Piemonte (1993)- pre and post therapy- it's possible to observe that the movement of ankle dorsiflexion (bilaterally) had a significant improvement on the graduation, or better, from 6,36 to 5,03 on the right side(p=0) and from 5,96 to 4,57 on the left side (p=0); the movements on the extension of the right knee and left hip extension also presented significant result, decreasing from 3,37 to 2,83 (p=0) and from 2,56 to 2,31 (p=0,01), respectively, and the hip abduction had a decrease of 4,22 to 3,15 (p=0). On the other movements (bilateral knee flexion, left knee extension and right hip extension), the results were not significant.

It's important to highlight that the movement of knee flexion was kept close to normality (graded 2) on most of the disabled riders, which justifies the non-significant result because it did not present important alterations. On the other hand, the significant results on the

movements of right knee extension and left hip extension can be justified by some disabled riders who presented a greater muscular commitment on one side better than on the other and because they were not evaluated individually but in a general manner.

Another result to be highlighted is the abduction movement, demonstrating that there was muscular tonus loose from the hip adductors.

	Pre	Post
Dorsiflexion of right ankle	6,36	5,03*
Dorsiflexion of left ankle	5,96	4,57*
Flexion of right knee	2,94	2,67
Flexion of left knee	2,93	2,65
Extension of right knee	3,37	2,83*
Extension of left knee	3	2,78
Extension of right hip	2,31	2,18
Extension of left hip	2,56	2,31*
Hip abduction	4,22	3,15*

Table 2: Results of the Evaluation of Muscular Tono Durigon and Piemonte, 1993

Figure 1: Graph of Results of the Evaluation of Muscular Tonus Durigon and Piemonte, 1993, only values with pd"0,05.



One of our evaluated disabled riders was classified in the level II of GMFCS. Three were classified in the level III, as characteristics they presented high scores in certain dimensions (dimensions A, B and C) and low in other, being those determined as goals for the treatment physiotherapy.

Three apprentices were classified in the level V, then they were just appraised the dimensions A and B, obtaining low scores in the same ones.

With reference to the GMFM Scale, the results have not been significant, demonstrating that this improvement on the muscular tonus was not sufficient to generate an improvement on the motor function, probably due to the small number of sessions, considering that the improvement on the motor performance is related to the long and repeated exercise and maintenance of seated posture during therapy (which does not permit transition exploration) (BERTOTI, 1983, CALVELEY, 1998). It should be taken into consideration the data analysis which was done on a general manner, and that on the individual analysis one disabled riders got better on the A and B scale dimensions.

According to Copetti (2004) an improvement was observed on the walking motor performance due to the horse's three-dimensional movement, which during the therapeutic horseback riding practice generates more complex movements of rotation and translation and, the proprioceptive information are interpreted by posture and balance sensor organs, demanding adjustments from the child to keep her/himself on the horse. The horse's walking stimulates the balance reactions, leading to the restorage of the gravity center inside the base maintenance.

In a similar study, Padra et al (2004), the gross motor function was evaluated in three disabled riders having the Cerebral Palsy through the GMFM test. An improvement of 20,95% in dimension A, 20,73 % in dimension B, and 21,55% in dimension C was observed, obtaining an average gain of 20,92% in ten sessions of. therapeutic horseback riding.

Yet, according to Padra et al (2004) during observation on the results of his study, on the three dimensions of GMFM, it was concluded that patients who were submitted to therapeutic horseback riding sessions obtained as the greatest benefit the control and consequently, the postural lining, in agreement to the articles in literature that show maintenance improvement of the sitting posture and in the symmetry of this same function.

In another study, Rodrigues et al (2004) during his study, noticed that a group (average age: 43 months) presented scores significantly greater on dimensions like lying and rolling, sitting and walking, running and jumping in the second GMFM evaluation, proving that the therapeutic horseback riding is a good therapeutic indication for patients with a poor body trunk control.

Specifically for children, studies demonstrate that the horse's walking rhythm promotes cocontraction which leads to cause activity of the hypotonic glutaeus muscles and free the iliopsoas muscles from its spasticity in children with neuromotor disturbances and, this is not noticed in any other intervention means (ANDE, 1996)

At another study, Fonseca (2004) claims that the rider's heat and adaptation to the horse's rhythm demands simultaneous expansion and contraction of the agonist and antagonist muscles, promoting the relaxation, and they may also help to reduce muscular spasticity, especially on the adductors of the lower limbs.

This is confirmed by Botelho et al (2003) in his study, who noticed improvement of the spasticity in all the 14 cases evaluated through the modified Asworth scale, besides registering also an increase on the amplitude of his abduction, measured through the intercondylar distance, with sharp and slow movements. This shows that the therapeutic horseback riding is a valid cooperating method to reduce spasticity and to increase the amplitude of hip abduction.

Completing these studies, according to Magalhães, 1997, Motta, et al., 2001, Medeiros, Dias, 2003 apud Leite, et al, 2004, we still have the sensorial stimulation given by the horse in a pleasant way, to be offered at the ideal quantity and quality to the organization of these information, facilitating the neurological process of sensorial integration, what may be translated in a motor, perceptive, cognitive and emotional improvement of the disabled riders.

CONCLUSION

The present research revealed that in all the seven cases of spasticity observed, there was improvement significant on the tonus, in spite of not observing improvement of the motor function.

We conclude that the therapeutic horseback riding with a minimum of 10 sessions, may be a valid cooperating method to reduce spasticity, being a facilitating agent of muscular tonus adjustment.

Although this study has demonstrated the therapeutic horseback riding efficiency on children with cerebral palsy, we suggest that further researches be carried out with a greater number of sessions, to enable results more significant, related the motor function

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STRUCTURING THE HYPPOTHERAPY SPACE ADDRESSED TO AUTISTIC CHILDREN TREATMENT.

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CASE STUDY AUTISM HISTORY AND CONCEPTS

Leo Kanner (1943) and Hans Asperger (1944) were the first physicians to identify and make reference to children having characteristics of extreme social isolation and incapability to establish relationship with other people. Both of them described autistic disturbances and published detailed descriptions of autism cases. They believed the children they observed since childbirth had a basic disturbance which originated problems with the same characteristics in all of them. The term autism had already been used by the psychiatrist Eugen Bleuler in 1911 to identify a schizophrenia basic disturbance that impairs the child relationship with other people and the external environment. Thus, the word "autistic" comes from the Greek *autos*, which means "self". Nowadays, this word is used exclusively to identify the autistic developmental disorder where different children show singular characteristics in common, mainly the congenial difficulty to develop a normal affective relationship, what contrasts with Bleuler schizophrenia concept. (MELLO, p.13)

Salomão Schwartzman (1997) considered autism as being a "development disorder characterized by a peculiar behavioral picture always involving social interaction, communication and behavior areas with different severity degrees; such picture is probably unspecific and would represent a particular reaction of the central nervous system when facing a great variety of impairments that can affect similarly certain central nervous system structures during its early development periods". The qualitative deviations of interaction, communication and imagination, which happen at the same time in autism, were named "triad" by Lorna Wing and Judith Gould (1979). Such triad is responsible for a repetitive and restrict behavior pattern, although under variable intellectual conditions: severe mental retard and over the average IQ score.

Autism is a social learning difficulty that is different from an intellectual deficit; therefore, it can happen at any generic cognitive level. Generally, people with normal or supernormal autism and intelligence are reported as having Asperger syndrome; nevertheless, those in the so called autistic spectrum share the same difficulties not only in the triad areas (social interaction, communication and imagination), but also in the cognitive functioning, sensorial processing and behavioral repertory.

Nowadays, the autistic spectrum is a widely used term; autistic conditions and conditions similar to the autism shown by an individual. As such characteristics are comprehensive, mainly concerning autism associated to other conditions; autism identification and early diagnosis turn out to be quite difficult. Gillbert (1991) has mentioned the existence of different forms of autism with symptom spectra ranging from mild to severe.

Inger Nilson (2003) divided autism in three explanation levels so that it could be understood easily: Symptom level, describing the original data on the autistic behavior observation; cognitive level, questioning how the autistic reality perception and interpretation differ from those considered normal; and, biological level that questions what happens in the autistic mind that makes it function in a different way from that of a normal person.

Recent American statistics show that 1/1000 children are classic autistics and 1/250 encompass all types of autism. According to data collected by Ami Klin (2005) in the Yale University Child Study Center, a research and diagnosis center, autism early diagnosis and treatment has improved in every aspect: 80% of the cases can be diagnosed before the child is one year old; 100% of the cases can be diagnosed in the first two years of a child's life. In the Yale Child Study Center autism can already be diagnosed in the first year of a child's life, thus increasing from 2% to 30% a classic autistic prognosis that he/she can work and have an independent life, and from 20%-30% to 50% the same prognosis for the autistic that could not speak.

Gillberg (2003), while visiting Brazil (In Curso Conviver – (*Life-Sharing course*) p. 05), mentioned there is an incidence of 1 to 2/1000 children with classic autism and of 3 to 7/1000 children with Asperger syndrome and atypical autism. He has also mentioned important conclusions, such as: nowadays, the autism incidence in boys and girls is almost the same but girls, in general, tend to be more aggressive and intellectually compromised; 5% of school children are autistic, 70% have a certain degree of associated mental retard and 20% have an average or over-average degree of intelligence.

Ami Klin told, during a speech in Brazil (2005) (III Jornada conviver de autismo - III *Autism Life-Sharing journey*), that 60% of the autistic children have mental deficit and 40% of them do not have it. He also highlighted that the increased incidence of autism cases is due to the fact that nowadays it is possible to make early diagnosis and also because people awareness has also increased significantly, thus making it easier to detect autism cases. But, he warned that in Brazil there is little awareness of the subject on the society, health agent and educator part, so autism is required to be treated as a public health problem.

Therefore, the hyppotherapy professional has to play his/her social role as an information disseminator and gradually demystify the social vision that the autistic is distant and introspective, seeing that, in fact, the autistics communicate and express themselves in a different way. The professional is also responsible for disseminating communication approaches that see the world through the autistic eyes, for we cannot ignore the autistic vision of the world.

Therapeutic approach

Although the autistic has difficulties and characteristics inherent to his/her syndrome degree, he/she can overcome several barriers, learn "normal" behavior patterns, exercise citizenship and develop communication abilities to be integrated into society through getting specific and early treatments.

When organizing and designing the treatment we must prioritize the autistic form of communicating, that's to say, we have to avoid using abstract language, seeing that the autistic has concrete thought (each word denotes exactly what it means) and thinks through images. We should also take into consideration other autism harms:

- Execution function harm: planning, organizing, focusing, generalizing and prioritizing difficulties;
- Mental process harm: difficulty in abstracting and understanding other people's feelings.
- Sensorial system dysfunction: difficulty in processing all sensorial information (more difficult or less difficult according to each individual). For that reason, we have to work one stimulus at a time, for example, if we are working the visual aspect we should avoid overloading it with verbal and auditory aspects;
- Difficulty in developing games and imagination (objects do not have symbolic meanings). Intervention: using concrete things, direct and objective words, and preventing the use of double meaning messages;
- Verbal and non-verbal communication difficulties. Intervention: communicating through visual clues.
- Resistance to changing routines: Intervention: routine flexibility;
- Difficulty in sharing group experiences;
- Difficulty in changing the rules already learned. We have to be careful when approaching this aspect, because once the autistic internalizes a piece of information it turns out to be a fixed rule and it will be difficult to re-elaborate it;
- Aversion to news and surprises: Intervention: planned predictability and informative organization of everything we want to communicate to the autistic. (VIANNA,p.7-9)

TEACCH educational techniques

The Treatment and Education of Autistic and related Communication handicapped Children (TEACCH) is a program which involves educational and clinical care through a predominantly psycho-pedagogic practice addressed to autistics and children with communication deficit. It was created in the sixties when Dr. Eric Shopler joined a group of psychoanalyst researchers in the North Carolina University (EUA), who were carrying out studies based on a judicious observation of the autistic behavior in different environments, forms and stimuli. The main results of such observations showed improvement occurred when the autistic children were subjected to direct work proposals and not to quite free situations, to visual stimuli and not to auditory stimuli. They also improved when they could express themselves and understand what we expected from them. Little by little TEACCH started to be acknowledged in the United Sates. In 1972, North Carolina legitimated it as the first state program to provide a lifelong care to the autistics and their families. Nowadays, each city in North Carolina has a TEACCH training center that fits the child profile and aims at guaranteeing the development of a wide variety of services addressed to the autistic child care (VIANNA, p. 10-12; MELLO, p. 27-28).

TEACCH educational techniques include:

- Showing the Information we want to communicate visually, that's to say, providing predictability; thus, making TEACCH a receptive communication system;
- Working strategies directed from left to right and from top to down (always in the same way, since sequencing is a difficult task for the autistics. This also facilitates writing directions);

- Using the "it's over" concept correctly, clearly showing the activity has finished (there is a specific place for the activity when it reaches its end);
- Using a daily bulletin board containing the routine the autistic has to follow (such routine includes flexibility for the educator to alter it as needed. To that end the child must be familiarized with the system, so that he can trust the daily bulletin board);
- Individualization: the activity program must always be developed to meet each child needs. It has to be motivating and creative, preventing an excessive amount of activities.

The physical organization should always inform:

- What the child will do (physical space limit);
- When the child will perform the activities (bulletin boards);
- In what order the child will perform the activities;
- What will happen after performing the activities;
- How to use the available material (beginning-middle-end of the activity).

The physical structure should:

- Include information on what the child is required to do;
- Be organized in sectors;
- Be predictable;
- Offer an objective learning context (specific place for independent work, specific place for playing and resting, specific place for learning and specific place for group work). (VIANNAL, p.14-19)

Case study – Strategies developed for organizing the Hyppotherapy environment and the autistic student care

Since it is necessary to provide a follow-up to the work autistic students carry out in a TEACCH class and there is a possibility of adaptative and qualitative improvement on their part if the hyppotherapy context is organized according to the way they understand and communicate, we have developed some strategies addressed to receiving autistic students in the Horse Place Hyppotherapy Center (*Centro de Equoterapia Horse Place*). Firstly, the environment was organized to receive a specific autistic student and observe his behavior and reaction to our way of communicating: if it was adequate; if it was easy for him to understand the activities he was required to perform, in what order they had to be performed, what would follow the end of an activity, where would the activities happen and if the environment would transmit the safety and predictability needed to prevent crisis and anxiety usually triggered when the autistic faces new information and situations.

The student we selected was an 11 year-old boy who was under treatment through the TEACCH method in the clinic "Centro Conviver de Autismo" (*Autism Life-Sharing Center*) in Curitiba-PR, since February 2005. After a seven-month work being in the clinic, the student was already familiar with the method and we decided he was ready for hyppotherapy. The following objectives were prioritized: the autistic student should accept the horse nearness and contact (soil contact, agreeing to use a helmet and getting on the horse); he should agree

to remain in that environment even in the presence of other animals, such as dogs and cats (the student was animal-phobic and when seeing them he reacted screaming and avoiding them); and facilitating the adequate physical and emotional answers for the activities performed with the horse.

We chose to use just few visual clues in order to situate the autistic student within the spaces marked to be used in specific moments and activities. The visual clues chosen to be used before and after the hyppotherapy session communicated and provided relaxing moments, seeing that we intended to highlight the horse session as "work time" and the remaining time as "leisure time" during hyppotherapy afternoons. We also chose a pre-set information routine, which was made flexible only in the hyppotherapy session and included variations in the amount and type of activity (bringing, in a certain way, some "novelties" to help him accept unexpected situations calmly and make him be willing to give information when needed).

Sequence of the visual clues we used:

- Card 1 hyppotherapy visual clue attached to the clinic routine bulletin board (arranged daily before the student arrives);
- Card 2 car visual clue (informing it is time to take the transportation to the hyppotherapy center);
- Card 3 chair visual clue (showing where he has to go to wait for the hyppotherapy session after getting off the car);
- Card 4 horse visual clue (showing the moment he has to go to the hyppotherapy session with his therapist);
- Card 5 chair visual clue (showing where he has to go after the session)
- Card 6 toilet visual clue (usually offered two or three times in the afternoon: after the hyppotherapy session, after snack break and before going home);
- Card 7 snack visual clue (showing snack break, always at the same time);
- Card 8 playing visual clue (showing the specific place for painting, scribbling, handling magazines and molding);
- Card 9 resting clue (showing where he can sit down or lie down outdoors);
- Card 10 walking visual clue (this activity is added according to the weather conditions);
- Card 11 car visual clue (showing the time to stay in the hyppotherapy center is over and he has to go back to the clinic).

Observations

- We decided not to use visual clues (to make the routine flexible) during the hyppotherapy session, we maintained always the same activity sequence instead: the session was started with two or three soil activities (color and animal pairs, mortise, puzzles and animal selection); in the middle of the session the student put the helmet on and performed activities while riding the horse; at the end of the session the student took the helmet off and fed the horse;

- The sequence of visual clues we used from the beginning of the treatment up to this moment are the following: chair card, hyppotherapy card, chair card, toilet card, resting or playing card, snack card, toilet card, and resting, playing, chair or walking cards (ranging among these options);
- The next clues we intend to add to our list are the following: ball card (to provide another choice of having a ludic-motor activity) and TV card (for rainy days);
- Some days before starting the activities we dedicated to observe the behavior pattern
 of the autistic student in the clinic and to find out which leisure activities he preferred,
 so that we could use them to choose the clues for the hyppotherapy work (for example:
 scribbling , handling magazines and molding);
- Each visual clue has its pre-set and invariable place and the student has to return it to its original place after receiving it. Such place is called *check in* (each *check in* has a visual clue identical to that given to the student, thus it clearly communicates the student where he must place the card he received).

Comments on the psychomotor observations and on the student behavior during the sixmonth hyppotherapy work (from September 2005 to March 2006)

- The autistic student increased his tolerance towards staying near animals (when a dog or another animal approached him, the student only gazes at it and allowed it to come near him without screaming or avoiding it);
- The student showed pleasure and satisfaction each time we communicated it was time to work with the horse (frequently when grasping the visual clue, he smiled and produced sounds expressing happiness, thus showing he liked to be in contact with the horse);
- He increased his corporal perception capacity while riding the horse; when he straight up his body on the mantle correctly (at first, when sliding on the mantle towards the horse sides he needed the therapist help to centralize his body);
- He understood short verbal requests concerning the contact with the horse and answered such requests more easily showing willingness and attention (requests as: "caress the horse." or "Feed grass to the horse.");
- There were no signs of increased anxiety, internal disorganization or resistance to any proposal (while in contact with the environment sounds and movements his face showed tranquility, what indicated confidence, safety and reliability to perform the activities).

Final considerations

Our hypnotherapy team believes the TEACCH physical and visual organization system facilitates communication. We are in the initial phase of application of our work system. At the moment, we are using the same procedures with another autistic student. We intend to continue this experiment aiming at improving our data bank and assessing the effects of the TEACCH method on different individuals.

We close our conclusions quoting Inger Nilsson synthesis of the TEACCH method main objective (2003): "The purpose of this work is to provide the autistics with greater real independence and feelings of success by improving their capacity of understanding daily life without being constantly helped by the therapeutic team and their families. In addition, it teaches how to accept changes increasing their life flexibility through a trusty system".

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RIDING THERAPY AND MULTISENSORY INTEGRATION OF POSTURAL BALANCE

Author: Satu Selvinen - Finland

Sensory systems of balance; can the improvement of balance in riding therapy be explained by changes in neurophysiology?

When we talk about the effects of the riding therapy, we always mention improvement of balance. But what exactly is balance and how does the riding therapy improve it?

Balance is defined as maintaining the center of mass over the base of support. It is achieved through a complex process involving the reception and integration of sensory inputs, motor planning, attention and muscular execution. Any damage in any of these areas affects on balance.



Research suggests that the ability to relate sensory input to motor output forms the basis of posture control development. Sensory feedback is an integral part of the over all motor system and is critical in modifying CPG-generated motor programs in online adaptations to the environment.

Central pattern generators (CPGs) are spinal functional networks, on which walking, postural control and other rhythmic behaviours as feeding and respiration are based. Infant stepping is an evidence of the existence of CPGs and it shows that CPGs are active controllers of human movements.

The rhythmic movements of the horse activate CPGs and this could be one explanation for the positive effects of riding therapy, specially improvements in walking.

In my presentation I will focus on sensory systems involved in the control of balance.

The ability to maintain balance depends on sensory information that the human brain receives from four different systems; **proprioception, tactile, vestibular and visual system**. Each of these sensory systems sends information in the form of nerve impulses from sensory receptors to the brain, and they provide both unique and redundant information for balance.



Mechanoreceptors of the tactile system are in the skin and give information about touch and pressure. Proprioceptors located in the joints, ligaments, muscles, and skin provide information about muscle length, stretch, tension, contraction and joint position.

Central vision allows environmental orientation, contribution to the perception of verticality and object motion. Peripheral vision detects the motion of the self in relation to the environment.

The vestibular system provides information about the motion of the head and its position in relation to gravity and other inertial forces.

Yet ambiguities exist within each sense. The somatosensory system alone cannot distinguish between a change in surface tilt and changes in body inclination. The visual system alone cannot discriminate motion in the environment from self-motion. The vestibular system alone cannot determine whether head motion signaled by the semicircular canals is caused by flexion at the neck or flexion at the hips, or weather head motion signaled by the otoliths is due to head tilt or to linear acceleration or deceleration.

Multisensory integration permits resolution of these ambiguities by using information received simultaneously through other senses that may or may not be consistent with the information gained from a single modality.

Sometimes the integrating activities are more complicated than at other times. For instance, there are times when the sensory input that we receive from one of the sources conflicts with the input from the other sources. For example, when we sit in a train and the train next to us is moving. At the beginning our visual system gives us information that our train is moving, but when our vestibular system reacts it gives more information and we realize that the train next to us is moving.

As the integration of the sensory input takes place, the brain sends out impulses to the muscles. These muscles make your head and neck, your eyes, your legs, and the rest of your body move and allow you to maintain your balance and have clear vision while you are moving.

Sensory processes and their contribution are important in building up functional representations of the body called **body schemas**. They are needed for movement control, for building up self-concept and for feeling own body ownership, also called **body awareness**. It is well-known that disorders in processing of sensory information disturb the development of functional body schemes, which are also important for the control of balance.

Poor balance is is often associated with **neurological disorders**, and there are often impairments in sensory systems behind balance problems. Especially in these cases riding therapy can be helpful.

I will present a single case study of the effects of riding therapy on a 28-year-old man, who is suffering of the **MS-disease**. He has big problems in his balance control and needs therefore to use a wheelchair. The causes of the poor balance of this patient are ataxia, visual problems and somatosensory deficits.

For the assessment of the effects of riding therapy we used **the force platform technique**. The balance of the patient was measured before and after three riding therapy sessions. The results showed less body sway after each of these sessions compared to the sway before riding therapy. Improvement of balance was also seen in the walk of the patient.

How is a person with sensory problems able to control his balance?

One explanation is multisensory integration. No single system can alone give enough information to maintain balance, but multisensory integration is able to do this.

Luckily, the central nervous system also has **plastic** properties. At a blind person, for instance, the presentation of the somatosensory system in the brain becomes larger, which will make the system more sensitive. Therefore, it has a more important role in the control of balance than in other people, who rely strongly on their visual system.

On the horseback, the rider gets an enormous amount of sensory inputs, and all the sensory systems involved in balance are activated, allowing multisensory integration to take place. Balance training on horseback is not only efficient, it is as well **motivating** and fun. The horse has an important role by giving **friendship and contact**, which empowers the effects of the movements of the horse.

THERAPEUTICAL RIDING AND ITS BENEFITS IN PSYCHOPATHOLOGY

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ABSTRACT

The literature available in Brazil is too scarce to explain the complexity of the method that utilizes horses as therapeutic agents in psychotherapeutic interventions. The present study aims to contextualize the theory of therapeutic equitation and its benefits in psychopathology found in German literature with the practice of equotherapy developed in Brazil. Therapeutic riding acts in a different manner for each clinical condition of psychopathology, having a multifocal character that considers the diagnosis, planning of strategies, as well as the prognosis. In the setting with the horse, it is possible to register the role that the animal plays for practicers in the elaboration of certain conflicts. During the therapeutic riding process, the therapist encounters space to describe the psychopathological phenomena observed in relation to the practicer with the horse and, as the practicer acquires internal resources to recognize and elaborate them, progress is occurring, making the changes and benefits visible to the practicers. The setting of therapeutic riding is preceded by a detailed investigation of expectations, complaints and the practicer's requests to the therapist. The present study shows the need for more publications on the therapeutic riding method in psychopathologies since its efficiency has been proven in Brazil and the results are in accordance with German literature. In Brazil, the utilization of horses as therapeutic agents has increased significantly in recent years. However, there are still no courses offering specialization in the area of therapeutic riding with emphasis on the formation of professionals to attend psychopathological practicers.

Keywords: equotherapy, therapeutic riding, psychopathology, benefits, settings

INTRODUCTION

The interest of psychologists in the utilization of horses in psychotherapeutical interventions grows year after year. However, the literature available in Brazil is still too scarce to explain the complexity of this method, its possibilities and limitations.

In the bibliographic survey performed, little research in the area of therapeutic riding was found in our country and what is available is restricted to the benefits of persons diagnosed as autistic or mentally deficient. References to psychotherapeutic works using horses in the treatment of schizophrenia, bipolar disorder, depressive disorder, anxiety disorder and other psychopathological disorders were not found, as was the case for registers regarding planning and therapeutic strategies for the method that uses horses as psychotherapeutic agents.

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References regarding the prerequisites for the psychologist, staff and horses used in the therapy were also not encountered.

Germany, however, has a tradition of more than twenty years in this area, which has generated numerous publications. The German studies show that each riding program has its specific indication in Medicine, Psychology, Pedagogy and sports and must be understood within an actuation in which a field of inter-relationship and common interest exists. Therapeutic riding is located in this field and permeates all of the programs that attend patients (called practicers) presenting some type of psychopathology. The indications of each program are utilized in therapeutic equitation, correlated to the phases of the patient's illness.



In Germany, the denomination of this field of inter-relationship was given by Dr. Michaela Scheidhacker as *"Psychoherapeutisches Reiten"-* "Psychotherapeutic Riding". In Brazil, however, this nomenclature has not been discussed. Therefore, in this work, the term 'therapeutic riding' represents the 'psychotherapeutic riding' suggested by the German author.

Dr. Michaela Scheidhacker is also the founder of the School of Psychotherapeutic riding, in Munich. This school performs its work in conjunction with the "*Bezirkskrankenhaus Haar-BKH*" psychiatric hospital, in Munich, where therapeutic riding services are provided for psychiatric patients, and research and courses have been carried out for nearly two decades. Psychotherapeutic actuation with horses has grown each year and, for this reason, the "Specific Group for Work with Horses in Psychotherapy" ("*Fachgruppe Arbeit mit dem Pferd in der Psychotherapie – FAPP*"), was founded in Germany in 2001, and is also recognized by the German Association for Therapeutic Riding, "Deutsches Kuratorium für Therapeutisches Reiten e.V. – DKThR".

The present study seeks to put the theory of therapeutic riding and its benefits in psychopathology found in German literature into context with the practice of the equotherapy developed in Brazil.

In Brazil, Dr. Gabriele Brigitte Walter has contributed to the divulgation of the complexity of the possible interventions of the psychic aspects in a therapeutic Setting with horses. In the courses that she offers at the Rancho GG Foundation, Center for Training, Research and Teaching of Equotherapy, she has been pointing out for years the benefits of therapeutic riding in cases of psychopathologies. As a researcher, psychologist, physical therapist and riding instructor, Dr. Walter possesses significant knowledge and experience in the field of therapeutic riding, contributing to the fundaments of psychotherapeutic interventions in the work with horses in our country.

The interventions made in therapeutic riding have a multifocal character, taking into consideration the diagnosis, strategy planning and prognosis. However, a specific psychological approach is not discussed for this psychotherapeutic method that utilizes horses. According to Scheidhacker (1998), page 16, "Psychoterapeutische Ansätze gehen über von dem Körper - und bewegungstherapeutischen Gesichtspunken über erzieherische Mabnahmen bis hin zu verhaltenstherapeutischen, tiefenpsychologischen und analytischen behandlungsform". (The psychotherapeutic references utilized possess aspects of the therapies dedicated to the body and the movement, cognitive and behavioral therapies, as well as psychoanalytic therapies or the so-called deep psychotherapies).

Therapeutic riding acts differently for each clinical condition of the psychopathology. The mentally retarded practicers are bearers of cerebral lesions and many times do not have sufficient cognition for the self-reflection proposed in conventional psychotherapeutic therapies. However, in the therapy proposed with horses, actuations involving aspects of learning, sports activities and social reinsertion are possible and are also utilized in equotherapy in Brazil.

The chemically dependent practicers do not initially present cerebral lesions, but frequently manifest personality disorders and relationship difficulties and, in these cases, have a tendency toward self-image distortions, inferiority complex and the desire to regress to primary stages. In the therapeutic proposal, the horse acts as an element that makes the reinforcement of the fragilized personality possible, proportioning equilibrium in the person's narcissistic aspects since the practicer projects on the horse his desire for possession, benefited by the animal's dignity and beauty.

The benefits of practicers diagnosed as psychotic, or borderline, suffering from delirium and frequent hallucinations, are justified by the fact that these patients are requested to establish contacts and new relations with the horse, obtaining an improvement in corporal perception. Scheidhacker 1998, page 14, "Konkrete Lerninhalte bei der Pflege der Pferde födern zielgerechtetes denken und Handeln." (Concrete Learning in the handling of the horse stimulates objective thoughts and actions).

The horse may signify an object of projection or a means of catharsis for the practicers, in which nervous excitement and tensions can be eliminated. The practicers who, by "confessing themselves" to the horse, go through an affectionate discharge, with tears and anger, may feel a certain momentaneous relief. In the setting with the horse, it is possible to register the role that the horse plays for the practicers in the elaboration of certain conflicts.

The following is the account of one of the cases attended by the author of this work - E.A.P., a 43-year old practicer with a CID-10, F31.4 diagnosis - Affectionate bipolar disorder, current episode mixed, agitated by the session, cried for more than half an hour, hugging and kissing
a mare: "I love you, I love you...you are my reason to exist...". "You are marvelous, you are marvelous, it is you who understands me... you understand me... thank you, thank you". The therapist watched this situation from a distance and the practicer silently left the mare, thanking the therapist for the time she had to be alone with the horse.

According to Dalgalarrondo (2000), page 154, in the case of depressive disorders, alterations of the image or corporal scheme may occur. "The depressed person lives his body as something heavy, slow, difficult, a source of suffering and not of pleasure. The person feels weak, exhausted, and unable to face the demands of life". As in grave conditions of anxiety, the practicers feel their body is compressed, asphyxiated, with corporal depersonalization and the sensation that their body is entering in collapse or becoming disorganized. In these cases, the horse's tridimentional movement stimulates an adequate corporal perception in the practicer, constantly seeking equilibrium. This search for equilibrium is not restricted to the practicer's physical aspects but is inherently connected to the self-perception of "*I want*" and "*I can*", Gäng (2003), page 75.

In a case of an adult with a CID-10, F32.2 diagnosis, it was possible to observe grave depressive episodes without psychotic symptoms, a significant improvement after three months of therapeutic equitation, when the practicer managed to conduct the horse autonomously, riding at gait over an obstacle without height. This activity, aside from the physical demand, provided a symbolic representation, making the practicer feel capable, overcoming pre-established, irrational beliefs.

Neurosis is treated in psychotherapy when internal conflicts begin to have relevance and reduce the subject's productivity and manifestation of enthusiasm for everyday life. Neurotic practicers frequently possess a corporal experience related to a sentiment of inferiority or castration. According to Dalgalarrondo (2000), page 75, "The neurotic feels his body as impotent, weak and sick. Corporally, he feels like a child or an old person." Horseback riding, in these cases, contributes to the decrease of defense mechanisms, acting directly on corporal perception. By the sway of the horse, the person is mobilized to the emotional, cognitive and physical levels, collaborating with the acquisition of the capacity to assume responsibility over himself.

Therapeutic riding offers a space in which the practicer can recognize his competences, without pressure and demand for productivity. This is relevant for the majority of psychiatric patients since many have been inactive professionally for some time. According to Gäng (2003), page 74, "Trotz intensiver Therapieversuche und medicamentöse Behandlung ist der Patient Häufig in seiner Kranheit gefangen" (Even with intensive therapy and medicinal accompaniment, the psychiatric practicer is frequently caught up in the symptoms of his psychopathology) and has little capacity to relate with others in a satisfactory manner. The lack of effective communication in these patients generates aggressiveness, insecurity and fears. Here, the horse permits a new form of communication.

According to Walter (2004), page 76, "the union can be such that the horse is perceived as a very close companion, even as a prolongation of the body, a body that agitates, a companion of fantasies and insanities, perhaps allowing the horseman the discovery of himself." The horse is frank and authentic in its relationship with others, efficiently reflecting the practicer's inadequacy, but without punishment or judgment. This makes it possible for the therapist, through the horse, to identify the mechanisms of the practicer's psychopathology as well as his psychodynamic functioning. This is possible because, in the relationship with the horse, the practicer reproduces his limitations such as, for example, difficulties in establishing new bonds, aggressive attitudes, the lack of decision making, among others. . *"Der Therapeut fungiert als Bindelgied zur Realität und als Mittler zwischen Pferd und Patient."* (The therapist acts as a link to reality and as a mediator between horse and practicer). Gäng (2003), page 75.

During the process of therapeutic riding, the therapist encounters space to describe psychopathological phenomena observed in relation to the practicer with the horse and, as the therapist acquires internal resources to recognize and elaborate them, progress continues, making the changes and benefits to the practicers visible. According to Scheidhacker (1998), page 17, "*Das Pferd allein bringt noch keine Änderung und keine Heilung*". (The horse alone does not bring about changes or cures). The signification of the triple dynamics of the horse, practicer and therapist is necessary. From this signification, the practicer may have the necessary insights, contributing to his improvement.

The therapeutic strategies vary according to the situations and to the psychopathological aspects of each practicer and should not be understood as necessarily sequential. They may be utilized in a varied manner in one same session. In the literature, examples are found that suggest the strategies of therapeutic riding with the horses at liberty, where each person identifies himself in a subjective manner with the most diverse characteristics of the animals, of their gaits and their group phenomena. The horse appears as an object of identification in which the practicer projects his psychic demands.

The handling of the animals, such as basic care with feeding, cleanliness and correct saddling, stimulates the approximation and even the complex processes of work. Using this strategy, the practicers can overcome their fear of entering into contact with others, and also develop new practical capacities. The activities of animal handling provide concrete situations involving new abilities, positive actions and concrete thoughts in psychiatric patients.

Riding the horse using just the blanket provides greater physical contact for the practicer and an awareness of his own body due to the horse's rhythmic movement, making it possible to liberate repressed emotions such as, for example, non-manifested aggressions that cause rigidity and tensions in the practicer. Here, the variation of several horses with different gaits stimulates a positive perception of the practicer's own body.

Autonomous horseback riding goes through the stages of circling to independent riding on a saddle or blanket. This strategy stimulates capacities such as decision-making, autonomy in subjective aspects and in the structuring of the practicer's ego. Riding outside, in the countryside, stimulates the will and joy of living, thus motivating psychiatric practicers to face new challenges and to develop personal maturity.

It can be affirmed that in therapeutic riding the possibilities of the strategies are numerous. However, the professional must possess specific knowledge of the psychopathology and psychodynamics. The German authors also refer to the importance of the psychologists who utilize horses in psychotherapeutic interventions having a solid formation in their specific area, as well as knowledge of horse ethology and advanced horsemanship.

Thus, the horses utilized in therapeutic riding need specific training after each day of work, guaranteeing their physical and mental health. The author Scheidhacker (2005), page 117,

affirms that "...das Pferd als Reit-und Therapiepferd ist auf seinen Ausbilder angewiesen," (the horse that is utilized in sports or therapy necessarily depends on its trainer). A disunited horse transmits tension and insecurity to the practicer, a young and instable horse transmits the need to be led and the sick horse requests protection and care. The preparation of each horse is the responsibility of the therapist-equestrian, not the practicer.

The need to assure a rigorous contact in therapeutic riding is great, thus guaranteeing the success of the treatment without exposing the practicer to unnecessary risks. this setting is preceded by a detailed investigation of the expectations, complaints and practicer requests to the therapist. Many times the therapeutic setting is confounded with riding classes and, unfortunately, we can see in practice that even professionals confound the sport with the therapeutic proposal. "The setting is under the continuous threat of being disparaged by both the patient and the analyst due to the impact of constant and multiple pressures of all kinds." Zimerman (1999), page 301.

As in conventional therapies, the therapist must have self-knowledge and know the reasons for which he wishes to work with horses in their setting. "Immer wieder hört man, das Pferde uns etwas geben, das unserer Seele gut tut." (We can always hear that the horse gives us something that is good for our soul) (Witter, 1998, page 186). However, there is the risk that the method with horses be utilized by the therapist for self-satisfaction and his own needs, giving false success to the practicer in favor of the professional.

Therefore, the criteria are numerous for the conventional psychotherapeutic professional to be efficient in the method that utilizes horses. The author Scheidhacker refers to the selfknowledge of the therapist as indispensable, also including the knowledge of his own representations in relation to the horse. This relationship between the therapist and the horse undergoes changes over time in which the therapist matures in relation to his reasons for wanting to utilize the horse for his psychotherapeutic work. In this signification, the horse is no longer an object of pleasure and really becomes the co-therapist and facilitator of the professional.

In the school of Psychotherapeutic Riding, in Munich, study groups do not analyze the practicers' phenomena exclusively but also the actuation of the therapist, reflecting on how he comprehends the relation of the practicer with the horse. For this work, Dr. Scheidacker uses all of the theoretic fundamentation of the Balint method. These courses have proved to be very effective since they are not restricted to theoretical explanations but instead promote self-knowledge and reflections on the part of the therapists in their practice of psychotherapy with horses.

CONCLUSION

The present study showed the need for more publications on the method of therapeutic riding in psychopathologies since its efficiency has been verified in Brazil through it use with practicers which in accordance with the German literature. Therefore, there is the need for translation of the references utilized in this research so that other Brazilian professionals who are not fluent in the German language can have access to this knowledge. This research illustrated the variety of strategies possible in the intervention with practicers and their psychopathologies, utilizing the horse as the main therapeutic agent. For each

specific demand, therapeutic riding can bring benefits in the causes and symptoms of the psychopathologies, constituting an exclusive or complementary method, depending on each case.

The setting with the horse must be rigorously established for each of the practicers' demands and may be used for individuals or groups. The therapist himself must have profound knowledge of the psychopathology, psychodynamics, therapeutic riding and of equitation as well as self-knowledge of the horse's representations.

In Brazil, the utilization of horses as therapeutic agents has increased significantly in the last ten years and the National Association of Equotherapy of Brazil (ANDE -Brazil) has greatly contributed to the normatization and quality control of this method. However, there still are no courses offering specialization in the area of therapeutic riding with emphasis on the formation of the professionals in attending psychopathological practicers.

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WAYS OF INTERVENTION IN THERAPEUTIC RIDING AND HIPPOTHERAPY. 'STUDYING, ANALYZING, CATEGORIZING, CLASSIFYING OF ITS.'

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Scientific Company for Therapeutic Riding and Hippotherapy, Hellenic Hippotherapists' and Therapeutic Riding Instructors' Association.

Several years after the first efforts to put scientific programs of therapeutic riding into practice, and, unfortunately, the existence of few scientific papers in comparison with their overall number, it is obvious that therapeutic riding has not progressed as much as we all expected. Most of the times, volunteerism, on which most teams initially were based, did not give its place, as it should, to fully qualified scientific teams.

In the best of cases, we do not get from the horse what it is able to offer.

Most groups' programs insist only on the entertainment that can be provided, and thus they limit the available options of treatment.

But it is only if we address these problems seriously and without fear that we will be able to assist in its further development.

The Scientific Company for Therapeutic Riding and Hippotherapy, established in Greece, together with the Hellenic Hippotherapists' and Therapeutic Riding Instructors' Association, which constitutes the official body of scientists working on Therapeutic Riding and Hippotherapy in Greece, concerned by the evolution of Therapeutic Riding, presents this paper.

Our aim is to,

- Study exactly how and in what way Therapeutic Riding works
- Understand the mechanisms which render it effective
- Study the pathological entities and ways to increase our efficiency.

The search, thus, of a more effective way to intervene through therapeutic riding, led us to realize the need to better understand both the horse, as a therapeutic means, and all the other means used to achieve healing. We believe that the recording of all these elements will be beneficial to:

- 1. the child or adult participating in this therapeutic process
- 2. the therapist himself who puts into practice this type of therapy
- 3. the better co-operation between therapists (both within and beyond the team)

To conduct a therapeutic session with the horse, the therapist should be specialized because:

He then knows how to use the horse as a means for treatment.

He is able to adapt and can cause the patient to adapt to the special conditions prevailing at the treatment area, i.e. the arena.

Being aware of the several types of dysfunctions and familiar with the normal development of children, he can then modificate the therapeutic session.

He knows how to generate the right stimulus and what the response to it should be. He can give the child the chance to adapt, and learn by trial and error.

This paper aims at studying, analyzing and recording the most important ways, as well as the means, of intervention, which constitute the tools for therapeutic riding and hippotherapy.

It deals with:

• categorizing the positions on the horse, analyzing them and citing the cases in which they should be practiced.

In this way gradual training and strengthening of different muscle groups is achieved, and so is the reeducation of balance, by giving different balancing responses from different positions and by intensely stimulating the vestibular apparatus.

We are given the possibility for a wider range of manipulations – facilitations, as per the needs

The patient receives different stimuli (optical, kinesthetic, etc.)

The possibility of streching various muscle groups is easily available.

The possibility for multiple therapeutic games is provided.

• the input of change of course, modification in speed, starting and stopping, ground inclination, direction of the horse in the arena, etc.

With the change of course, the patient's response to either an intense or not stimulus is increased to the extent we wish for (stimuli such as deviation from the gravity line and mandatory weight displacement).

Different parts of the body are educated, the hemiplegic side is reeducated and the protagonists – antagonists and stabilizers' alternating twitch is generated.

Depending on the speed selected each time, the intensity and the pace of stimuli received by the patient are diversified. Parameters, such as oscillation and stimulus frequency, require diversification of the requirements on the patient's part, concerning coordination, balance and muscle tone. The child psychology should be always taken into account.

Starting and stopping give rise to balancing responses, alternation of muscle strategies to control the body and, of course, participation of the child in the whole process, which increases its self-confidence and self-esteem, its levels of alertness and attention.

The ground inclination causes intensely diagonal patent and education at the level of shoulders and pelvis, diversification of the pelvis inclination, change of the center of gravity, and a particularly intense stimulus which, most of the times, is amusing.

One should never forget that the repeated exposure to a combination of stimuli, for example a weak and a strong one, with the gradual withdrawal of the strong one results in the weak stimulus, producing the desired results.

• The role of the horse's walk, its size, its height, shape, etc.

All the above constitute very important elements, not only for the initial approach of the patient but also for the further program.

The horse's walk, for example, is connected with the quality of the stimulus and its pace (length of stride, three-dimensional move of the pelvis in space, etc.).

Its size is connected with the rhythm and the speed required. Moreover, its size, height and color are important for the first stimulus given to the child, mainly through eye contact. Psychologically speaking, thus, all these elements, or even more personal ones specific to each horse, play an important role for the initial approach.

Its size has to do with chief treatment elements, such as the abduction of hips, the supporting base, but also with practical ones, such as the child's size and weight.

All the above also depend on the program to be followed and the type of therapeutic riding required depending on the incident.

• It treats and records the grips implemented by therapists.

The grips constitute one of the most important parts of therapeutic riding and especially hippotherapy. They stemmed from the need for more safe and effective programs.

The persons responsible to select and implement them are the group's therapists. They are moreover authorized to modify the existing ones, or even plan their own, when this is deemed necessary for the personalized needs of each incident, and, always within the frame of anatomy and kinesiology.

One should naturally always bear in mind that, through grips, the patient should be assisted only to the extent needed.

Surely, the usefulness of grips is multiple:

Psychological reasons: Through grips, the subject feels safe and, thus, becomes more effective. *Safety:* The safety during the session is greater, because in this way both the subject and the horse's walk are controlled, combined with ceaseless eye contact.

Facilitate active movement at any stage, and intercept pathological motor models, so that the child experiences a voluntary natural movement.

These techniques include the interception of primary reflexes and of tonic reflective activity with simultaneous facilitation of orientation and balance automatic reactions, always in comparison with the normal developmental succession.

Handling is used to enhance the symmetry of the body, to limit or obliterate the abnormal tone, to regulate the tone, to provide the sense of normal motor models and to promote active motor models.

Stabilize the joints.

Furthermore, two more chapters, both of equal importance, include the terminology and play (means).

• Play

Play constitutes a behavior with inner motive.

Therapeutic play aims at integrating the fundamental motor models and skills required in a setting of play, learning, competition and co-operation and at enriching them with complex perceptive-motor skills, which characterize normal movement and behavior.

• Terminology

The existence of a commonly acceptable terminology is necessary, for the unhindered communication between the therapists either within the same group, or between therapists of other groups to be secured. Its use provides, in addition, speed in communication, as well as better effectiveness during sessions; proper handling by the therapists, should the grip require more than one, use of the same terms toward the child and simplification of orders used by the group is thus achieved. Moreover, it facilitates the evaluation and recording of each session.

This difficult and laborious work is the outcome of long lasting study and observation, and the fruit of our ideas and philosophy that nothing should be done accidentally, and that everything should have a scientific base. We hope that this paper shall provide more motivation, but also provide useful information to all therapists involved with therapeutic riding and hippotherapy.

TRANSDISCIPLINARY MEDIATION – THEORETICAL CONCEPTIONS AND PRACTICAL EXAMPLES WHICH JUSTIFY A RECENT AND FUNCTIONAL ACTING

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INTRODUCTION

Because we are in a moment that the scientific production of inter and transdisciplinarity is rising, it is propitious for the Therapeutic Riding studies to reflect about and consider the different levels of relationship which may co-exist in a team work, aiming the efficiency in our own work, through the structure of a team coherent to the purposes and principles of that therapy.

Intended for doing that, we looked up for the definitions of "discipline" and its derivations – multi, pluri, inter and transdisciplinarity – and went on studying from their historical sources to the practical principles of a team work, which determines the differences and consequences of the different ways that disciplines deal with each other. Concentrating not only to theoretical references about those conceptions, but also and mainly to the practice of those relations working at Therapeutic Riding, we could reach a reality of an *interdisciplinary team* with *transdisciplinar mediation*, what according to our own experience has achieved good results up to this moment.

INTER AND TRANSDISCIPLINARITY

1- HISTORICAL SOURCES

The transdisciplinarity is a theoretical principle from which result many practical consequences, even in academic methodologies and teaching purposes as in the development of disciplinary relationships, while sciences in contact. But this idea is not new. According to *Programa de Educação Continuada do Instituto Paulo Freire* (Continued Education Program of Paulo Freire Institute), it recedes to pedagogical ideas from the beginning of the XX century, when it was used to discussing about global teaching and of which famous educators considered, such as, the French Ovídio Decroly (1871-1932) and Celestin Freinet (1896-1966), the North-American John Dewey (1852-1952) and William Kilpatrick (1871-1965) and the Sovietic Pier Blonsky (1884-1941) and Nadja Krupskaia (1869-1939). The transdisciplinarity concept is a kind of "evolution" of the interdisciplinarity conception.

The interdisciplinarity, as a gnosiological question – about the limits and conditions of knowledge existence, since subject-object relationship – emerged in the end of the XIX century. Sciences had been divided into many different disciplines and the interdisciplinarity re-established, at least, a dialogue between them, although it could not recuperate a unique and total knowledge.

It has been in the Educational area that, since then, the conception of interdisciplinarity has been most increased. It emerged in 1912, when the Jean-Jacques Rousseau Institute was found, in Genebra, by Edward Claparède, Piaget's master. By that time, it was greatly discussed about the relationship between main-sciences and relative-sciences put on educational questions, such as sociology (in education), psychology (in education), etc. and co-related notions have came up , as the conceptions of pluri and transdisciplinarity.

After the World War II, the interdisciplinarity appeared as a humanistic concern, more than a science care. Since then, it seems that all of the thinking areas have been worked on that question.

First, Phenomenological Theology found in this concept a key to the dialogue between Church and the world; second, the Existentialism, aiming to give to sciences a more "humanistic" appearance; then, the neo-positivism, which aspired in the basis of positivism the solution for the science union problem; and, also, the Marxism, which aimed a different route to the re-establishment of the union between unity and totality.

The interdisciplinary project in sciences turned from a philosophical-humanistic stage of terminology definition and exposition, in the 70s, to a second stage, more scientific, of discussion about its place in human sciences and Education, in the 80s.

Today, the interdisciplinarity intends to guarantee the construction of a global knowledge, breaking the disciplines frontiers. For doing that, it is not enough only to combine contents. It is necessary an interdisciplinary attitude and posture. Attitude of targets, participation, conscientiousness, reciprocity front knowledge – minimal necessary attitudes for a Therapeutic Riding professional.

2- THEORETICAL AND PRACTICAL CONCEPTIONS

For conceptualize, more than contextualize, the terminology used in this work – mainly inter and transdisciplinarity – we started from the term discipline, about which we found several authors and concepts, choosing some exemplified definitions and emphasizing the ones that we would use in the present work.

Berger (1972) defines *discipline* by a specific combination of information that has its own characteristics in the areas of teaching, formation, mechanisms, methods and materials. Palmade (1979) affirms that a discipline treats about a kind of category of phenomena which aims to turn intelligible and with regard to which plans to preview or, more usually, establish associations.

We will use Heckausen's (1972) concept about discipline in which it means the same than science, using seven criteria that allow us to differ a discipline to another: 1) the material dominion or the object of study; 2) the possible combination of observed phenomena; 3) the level of theoretical integration; 4) the methods; 5) the analysis instruments; 6) the practical applications; and 7) the historical contingent.

From the term *discipline* we go toward the need of the term *disciplinarity*.

Heckausen (1972) recognizes it by "a scientific exploration specialized in a determined and homogeneous dominion, exploration that consists of producing new comprehension or information that will substitute the old ones. The disciplinary activity drives to a continuous building and re-building of the current knowledge body about the dominion in question. And Japiassu (1976) completes it when affirms that as you take "discipline" by science, the disciplinarity allows us to evoke a systematic and organized group of information with its own characteristics in its teaching planning, formation planning, methods and subjects.

At this point, we reach two of the terms we need; we understand "discipline" by "science" and follow the definitions above for "disciplinarity".

Anyway, it is important to remember that every science is a discipline, but not every discipline is a science, and a discipline always depends on the integration with other disciplines. So, it is necessary to establish joint levels for disciplines in contact, when, finally, we get the concepts of multi, pluri, inter and transdisciplinarity, our main study object.

The first level is the *multidisciplinarity*.

Berger (1972) and Jantsch (1972) state it is a gathering of various disciplines, sometimes with no visible relationship between them.

Piaget (1972) uses the term when the solution of a problem requires the information from one or more sciences or knowledge areas, without changing or increasing the disciplines involved.

Japiassu (1976) concludes the ideas above when describes multidisciplinarity as question that evokes a sort of disciplines simultaneously proposed, but without making apparent the possible relations between them. It is a kind of system with only a level and multiple objectives, and there is no cooperation between the disciplines.

In the meantime, the lack of an articulation does not mean a lack of relation. The fact is that the professionals, in this case, are in an automatic scheme which does not make possible an articulation as happens in other kinds of disciplinarity (Iribarry, 2002). It seems as looking for a gastrologist, a dermathologist and a psychologist to solve health problems caused by stress. The person knows that all the symptoms are related to each other, but, at that moment, the patient looks for different professionals separately, without establishing contact between them.

The multidisciplinarity drives itself to he interdisciplinarity when the relations of interdependence between disciplines emerge. It passes from a common "exchange of ideas" to a cooperation and a kind of compenetration of disciplines (Palmade, 1979).

The second level is the *pluridisciplinarity* and it evokes a variety of concepts and, sometimes, divergences between authors.

Berger (1972) identifies the term as a junction of disciplines close to each other in their knowledge sphere.

Delattre (1973) defines it as a simple association of disciplines that drive to a common realization, but without sensibly changing each discipline in its points of view or methods.

"Methodological and instrumental cooperation between disciplines that does not mean an internal conceptual integration" (Palmade, 1979). Resweber (1981) affirms it is a confrontation between many disciplines, aiming to analyze the same object and without making a synthesis. Gusdorf (1990) affirms, in such strict way, that it is a junction of specialists, strangers to each other. Qualitative point of view. It consists in gathering people with nothing in common, each one speaks what wants or knows without listening to the others, who do the same thing.

It may be Japiassu's (1976) definition with Iribarry's (2002) example, the best idea for us to use. Its general description involves a junction of various disciplines, generally placed at the same hierarchical level, and arranged in order to appear the relations between them. It is a kind of system of one level and multiple objectives; there is cooperation, but there is not coordination (Japiassu, 1976). For example, when a patient looks for psychiatric assistance and, after orientation and pharmacological prescription, he or she is directed to a psychologist, for therapy. The professionals cooperate, but do not necessarily articulate in a coordinated way. In this case, the cooperation is mechanical, but follows the finality to establish contacts between the professionals and their knowledge areas (Iribarry, 2002). Contacts are made by "prescriptions".

We finally reach the term *interdisciplinarity* of levels of discipline interactions.

The prefix "inter", according to Gusdorf (1990), does not indicate only a plurality, a junction, but evokes a common space, a cohesion issue between different sciences (experiences). Specialists from different disciplines must be motivated by a will and accept to work hard, far from their own area and technical language, to explore a new territory. It presumes open thought, curiosity aiming more than itself.

Berger, in 1972, affirmed that it was an interaction between two or more disciplines, which could involve from a simple communication of ideas to a mutual integration of directive concepts, of epistemology, of terminology, methodology, procedures, investigation data and organization and of related teaching. An interdisciplinary group is formed by people with different formation in different areas of knowledge (disciplines), having each one his/her own concepts, methods, data and themes. Piaget, by the same time, defined interdisciplinarity as a mutual exchange and reciprocal integration between many sciences, having as result a reciprocal increasing.

Marion (1978) emphasized the cooperation of various scientific disciplines to exam the same and unique object.

Consequently, the interdisciplinarity overcomes the pluridisciplinarity because it goes farther into the conclusion analysis and confront; because looks for a synthesis in the level of methods, laws and applications; because it precognizes a return to the discipline groundwork; because it reveals in which way the identity of the studied object increases its complex through different methods of different disciplines and illustrates its problemacity and mutual relativity (Resweber, 1981). We can add at this moment, in practical terms, the introduction of discipline coordination which comes from an inner level (or superior level) and gathers such disciplines focusing in the process finality (Japiassu, 1976).

Iribarry (2002) offers us the example of an ambulatory work team for poor pregnant teenagers. The team is formed by a pediatrician, a psychiatrist, a psychologist, a social assistant, a psycho-pedagogue, a nurse and a secretary. Each one of the mentioned area aggregates probationers working in the ambulatory. However, it is the medical know-how that prevails, and the coordination and final decision is up to the medical professionals, who direct and orient the work team.

To conclude, we reach the term *transdisciplinarity*.

According to Piaget (1972), the term refers to a global integration of various sciences. The level of the interdisciplinary relations is followed by a superior level, which would be the transdisciplinarity that not only could reach the interactions and reciprocities between specialized investigations, but also could place them into the middle of a total system, without strict frontiers between the disciplines. It would be a general theory of systems and structures that would include operative and regulatory structures and probability systems and would gather those various possibilities through regulated and defined transformations.

Japiassu (1976) completes such idea referring to a kind of system with multiple levels and objectives in which the coordination requests a common finality for all systems.

Gusdorf (1990) affirms that transdisciplinarity evokes a transcendental perspective that explores toward the limits of knowledge itself. If each discipline proposes a way to be close to knowledge, if each approximation reveals an aspect of global truth, transdisciplinarity points to a common object, which is beyond the horizon of epistemological investigation, at the imaginary point where all the parallels converge.

According to Caon (1998), it is a challenge put by the interest of a professional team that is together by the metaphor proposed by a transdisciplinar situation, in which each researcher inquires the concepts of different areas. Each one goes into the colleague's discipline and looks through the colleague's lunette, interrogating the theoretical and practical tools used by the host researcher and with which he/she sees what he/she says that sees. In transdisciplinarity, the tools used to solve a problem are more important than the solution itself.

For example (Iribarry, 2002), in a hospital there are lots of different professionals all together. We can take as illustration a work team that is responsible to people with mental injuries. Such team must count on psychologists and psychiatrists, nurses, social assistants, phonotherapists, physiotherapists, neurologists, doctors in general, etc. When a patient arrives to a global examination, all professionals would examine him/her and search for a diagnosis about the case. To do it in a transdisciplinar situation, it is not enough for each professional opine in his/her own area, but it is also necessary that all of them, fundamentally, are placed reciprocally in their own area and in the colleague's areas, too.

It is important to emphasize that the transdisciplinarity is not a superior style of interaction, but a level to be searched for its benefits, although it preserves the other modalities of interaction levels. Those ones are natural and able to take part in any kind of group or team interaction where useful (Iribarry, 2002).

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INTER AND TRANSDISCIPLINARITY IN PRACTICE

Practicing the interdisciplinarity while reciprocal interaction process between various disciplines and knowledge areas, "able to rupture the structures of each one of them to reach an only and common view of knowledge working with partnership", according to Palmade (1979), is with no doubt a work that demands a great effort of us.

The principle of interdisciplinarity permitted a great advance of the integration idea, but the particular interests of each discipline is preserved. The principle of transdisciplinarity intends to overcome the concept of discipline. Here, we search for intercommunication between them, treating effectively about a theme/object in common, and transversal.

This way, it only makes sense if we work inter and transdisciplinarity through projects that promote the interaction of various disciplines. Project means to throw, to impel toward the future. Practically, elaborating a project is the same as elaborating a plan to make real certain idea. Therefore, a project supposes the realization of something that does not exist yet, but a future possible. It means reality in course and possible utopia, realizable, concrete.

The methodology of interdisciplinary work implies to:

- 1. content integration;
- 2. going from a fragmental conception to a unique conception of knowledge;
- 3. overcoming the dichotomy of teaching and research, theory and practice, starting by the various discipline contribution;
- 4. plan and practicing centered in the point of view that we learn along the way, we are in process.

APLICATION

In march, 2005, after a deep and important professional restructure, the Associação Beneficente São Lucas - ABSL (Saint Lucas Beneficent Association), a philanthropic institution which is in Bragança Paulista, SP, and offers different therapies to people with special necessities, aiming the global inclusion, added the Therapeutic Riding to its therapy board, through an alliance between some "new friends": Centro Hípico Viverde, Kether van Prehn Arruda, the creator of the project Equoterapia Pegasus, and the institution itself.

The institutional work group used to be *multidisciplinary*, composed by three psychologists, a music therapist, a physiotherapist, an occupational therapist, a pedagogue and two phonotherapists, among other managerial workers. The clinical therapies used to be pluridisciplinar, it means, the contact between therapeutic areas used to happen through development reports and prescriptions.

To form the therapeutic riding team, the professionals used to meet once a week, becoming quickly an interdisciplinary team, based on the professional ability of the therapeutic riding instructor, Kether Arruda, and studies about intellectual and emotional development and (educational) inclusion process.

The team training, developed by Kether, took 20 hours of theoretical studies about therapeutic riding and 20 hours of practice, working with the horses. From this team, 04 professionals began to work as mediators, having experience support, and to the others were required the evaluations, prescriptions and therapeutic planning of the disabled people. To better comprehension, we separated the professional into two kinds: the *mediators* and the *evaluators*. From the trained people, three have already had the *ANDE Brasil* practical professional training, and two have been working in this area at another Center. It had never been worked this way before, and we credit to the Therapeutic Riding the example of the most actual and solid inter and transdisciplinarity that we could reach up to our current practice.

Since then, a disabled person who would take part in this program should be submitted into an evaluation in each specific area of treatment, which would turn from pluri to interdisciplinary at the moment that the professionals from those different areas gathered to plan the therapeutic strategies of the case. Each one of the professionals showed the person's necessities in his/her area, and with a special attention to others' comments, improved the planning in a global way. That planning was built involving from the person's development priorities, up to the questions of the choice of the horses and specific equipment for practice.

Fortunately, we experienced the transdisciplinarity when we developed mediators able to use the therapeutic strategies of all areas into each disabled person's treatment, it means, independently of being a Therapist, a Psychologist or a Riding Instructor, the Therapeutic Riding professional must put in practice, while working, all the strategies involved with the process of global development of the person, no matter the area it owns, based on the interdisciplinary therapeutic planning, studying and improving his/her own knowledge about each area, understanding the magnitude of knowing the right way to act with the disabled person in order to his/her global development.

As a result, we developed an *interdisciplinary team* with *transdisciplinar mediation*.

Although the righteous institutional principles and excellent results of that work (16 people with special needs that, in 02 or 04 months being under Therapeutic Riding treatment, got great improvement as never seen before in traditional therapies), the *Associação Beneficente São Lucas* (ABSL) could not keep on with that work, mainly because financial problems. Because of that, Pegasus, only a project until then, "flew up" higher and became a Therapeutic Riding Center in January, 2006, going on with its partner, *Centro Hípico Viverde* (Viverde Riding Center), offering private and philanthropic therapy, expanding its benefits to all people interested in that treatment, irreversibly sustaining its principles of work team and mediation.

INTERDISCIPLINARY WORK TEAM



TRANSDISCIPLINAR MEDIATION



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FUNCTIONAL INDEPENDENCE MEASURE AND THERAPEUTIC ALLIANCE: THEIR ROLE IN THE CONSTRUCTION AND EVALUATION OF THE REHABILITATION PROGRAM

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INTRODUCTION

The horse is a rehabilitation mean which provide many different stimuli to the patient. As a consequence, the person with disability gets a great help to reach the best level of autonomy in the daily life activities and in his relational life. So far, many authors described the effects and the advantages of Therapeutic Horse Riding (THR) in pathologies as children cerebral palsy and marked the effectiveness of such treatment both on motor functions and on behavioural and cognitive status [Frascarelli et al. 2001, Barolin et al. 1991, McGibbon et al 1998]. Outcome advantages have been observed also in many adult neurological pathologies [Freeman et al. 1997] and, more recently, in different orthopaedic diseases [Rothhaupt et al. 1997, Gottwald et al. 1981].

Indeed, the three-dimensional movement of the back of the horse can induce a corresponding movement on the pelvic apparatus of the disabled, which reproduces the movements of human deambulation; moreover, the variations of the horse step of, as well as the changes in speed and direction, stimulate equilibrium and facilitates postural stabilization [Tauffkirchen 1978, Freeman et al.1984]. In addition, due to the emotional contact with the animal, many psychogenic effect are added to the benefits on motor function [Exner et al. 1994]. Finally, some observations carried out on the energetic demand of such activity in the disabled people demonstrated that THR is related to an elevated metabolic request and represents a sort of muscular training [Veicstenas et al. 1994].

One of the main target of THR is to transfer the improvement of the compromised functions in the patient everyday life, in order to achieve a higher independence in common and relational activities. However, despite all the above mentioned benefits, some concerns recently raised about the possible transferability of such advantages of THR in the daily life of the patient, aimed at reaching a good self-efficiency. In this context, it is of paramount importance to use standardized and validated instruments in the judgment of the effectiveness of THR, as also requested by the quality assurance standards applied to rehabilitative services [UNI EN ISO 9000, 1994, Johnston et al. 1992]. In an our recent work we attempted to collect objective data on THR effectiveness by means of the FIM (Functional Independence Measure) scale [Artuso et al. 2002], a standardized and validated scale which measures different features of the rehabilitation outcomes in terms of motor and relational self-efficiency [Uniform Data System for Medical Rehabilitation. 1992; Granger et al. 1990, Msall et al. 1994, Sperle et al. 1997]. Although after 6 months of THR we observed a significant improvement of the FIM scores in the enrolled patients, there were still poor indications of an effective transferability of the results obtained in the clinical setting to the daily life environment [Weiner at al. 1993]. Therefore, we hypothesized that a successful transfer of

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the THR results in the patients everyday life could not only depend on the rehabilitative benefits obtained in the clinical setting, but also on the availability of a "ally" (usually a relative of the patient, but also an educator or a teacher) which could facilitate the transfer of the acquired THR competences into the home environments. This family guide may be described as a "therapeutic ally".

AIMS

Aim of this work was to assess the importance and the contribution of therapeutic allies in the transfer of the results obtained inside the therapeutic setting (apparently limited to the equestrian environment) of THR to the daily life activities and relationships.

MATERIALS AND METHODS

Subjects

We evaluated a sample of n = 50 subjects (22 females, 28 males; age 21.4±10.6 years [m±DS]) with neuro-motor, psycho-motor, psychiatric and mixed damages. All subjects were part of an equestrian rehabilitation program of 8 months duration. (Two therapy sessions/week; 45 minutes/session).

Therapeutic setting

The therapeutic setting of the riding school was a typical "close setting", where the rehabilitation activity was structured on the typical triad rehabilitator-patient-horse. Such setting has been opened only in occasion of the "rehabilitative project control", an event with a programmed time schedule, where the figure of the therapeutic ally was admitted and allowed to observe the whole rehabilitation session directly into the clinical setting.

Experimental procedures

Measures have been taken with the FIM scale in two different phases of the rehabilitative program: at the beginning and after 8 months of rehabilitation. The sample has been divided in two subgroups of 25 subjects with matched age, sex and pathology distribution (Table 1), based on the presence of a therapeutic ally.

Table 1. Distribution of the enrolled patients based on the pathologic conditions, age, gender and the availability of therapeutic allies.

	Therapeutic Allies (A)			NO Therapeutic Allies (B)		
Pathologic Group	п	Age (yrs)	Gender (m/f)	п	Age (yrs)	Gender (m/f)
Neuro-motor	4	30±17	0/4	6	28±15	4/2
Psycho-motor	1	14±0	1/0	3	21±15	3/0
Psychiatric	7	13±6	4/3	5	29±11	2/3
Mixed	13	19±6	9/4	11	20±8	5/6
Total	25	19±9	14/11	25	24±11	14/11

In the first subgroup (Group A), during the whole period of rehabilitation, the therapeutic allies (parents, relatives, educators, teachers) have been actively involved with a predefined time schedule (called "rehabilitative project controls", at the 10th, 20th, 30th, 40th THR session). The inclusion criteria for the definition of a therapeutic ally were the following: a) his/her presence on the therapeutic setting was inserted into the clinical record of the patient in occasion of the first visit; b) he/she expressly accepted to participate in the rehabilitative project; c) he/she was always present in occasion of each rehabilitative project control (every 10th THR session). For the second group of patients (Group B) the therapeutic allies were not actively involved, because of practical and/or objective problems.

All patients or their legal tutors gave an informed consent to participated to the study, whose design was approved by the Local Ethics Committee (Don C. Gnocchi Foundation). Statistic analysis

If not stated otherwise, data are expressed as mean±standard deviation (m±SD). Differences between mean FIM scores, for both the whole and the individual FIM items, in group A and B were tested by a Student *t* test for unpaired data. The statistical comparison between preand post- treatment was executed by means of a Student *t* test for paired data. Relationship between variables were assessed by a simple linear regression analysis. Statistical significance was set at P<0.05.

RESULTS

At the end of the THR program, all the patients showed a significant improvement in the total FIM scores (Figure 1) as well as in the FIM scores related to the different rehabilitative areas considered (P<0.05).

Figure 1. Relationship between total FIM score on admission and at discharge from the THR: all patients



However, the mean difference between pre- and post- treatment total FIM scores was significantly lower in Group B than in Group A (P<0.01)(Figure 2).

Figure 2. Difference between pre- and post-treatment total FIM scores divided by the presence (Group A: white bar) or the absence (Group B: grey bar) of therapeutic allies in the rehabilitative setting. *: P<0.05 between groups.



Similarly, a significant difference was observed in FIM scores for all the individual items (personal self-care, sphincteric control, mobility, locomotion, communication, relational/ cognitive capacity) assessed in both groups (except for the sphincteric control in Group B, which showed only a non significant trend towards an improvement). However, the preversus post- treatment differences in the individual FIM scores were again significantly lower in Group B with respect to Group A (Figure 3) in each item.

Figure 3. Difference between pre- and post- treatment in individual FIM items divided by the presence (Group A: white bars) or the absence (Group B: grey bars) of therapeutic allies in the rehabilitative setting. *: P<0.05 between groups.



DISCUSSION

The main result of this work is that the use of a validated and standardized scale for the evaluation of a rehabilitative treatment as THR seems to be reliable and effective in assessing even the small but meaningful changes in the different items/areas pertaining to the patients self-sufficiency. In addition, the application of FIM scores in various moments of the rehabilitative process may allow to efficiently monitor the progresses of the therapy, as previously demonstrated in other settings [Yung et al. 1999]. As the total and individual FIM scores significantly improved at the end of the whole THR program in all patients, this confirms that therapeutic horse riding may be considered as a real promising strategy in the recovery of self-efficiency in patients with neuro-motor and psycho-motor damages [Riesser 1975]. In addition, the evolution of individual FIM scores in each patients can help the rehabilitator in optimizing the therapeutic strategies by focusing on those areas which needs to be more addressed. However, only when the benefit obtained in the clinical setting is efficiently transferred in the home environments of the patients THR can be defined effective. Importantly, this work also showed by the application of FIM scores that the therapeutic work is much more effective when other people are actively involved as therapeutic allies in the rehabilitative process. All the progresses observed in the individual FIM scores showed a significant difference between the patients groups with or without therapeutic allies, suggesting that this "intermediate" figure is of enormous importance in the transfer of the benefits obtained in the rehabilitative setting on the everyday common and relational life of the patients.

Thus, the key figure of the therapeutic ally seems to warrant the correct transferability of the rehabilitation results from the clinical to the home environment of the patients; this critically help to maximize the process of recovery of the individual autonomy in every day activities.

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MY HORSE, MY FAMILY AND MYSELF: I DRAW MY INNER WORLD

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INTRODUCTION

Therapeutic horse riding is a multidimensional tool of rehabilitation, which can be used by different professionals and with various aims. As a psychologist, I paid most of my attention during the therapy sessions to how the patients feels and to how he perceives himself in relation to the environment. Environment refers to: the therapist, the assistant, other patients and, above all, the horse. With therapeutic horse riding we can often observe an improvement in the patients' social lives. This change is not limited to the relationships they have within the therapeutic environment. In fact, we observed a significant improvement in the patients' daily social lives and relationships, in their families as well as in their scholastic or professional worlds. We also think that one intention of therapeutic horseback riding is to form a correct body perception (self knowledge) that can allow the achievement of a good body experience (self awareness). This achievement is one of the main components of a positive self image and of good space and time relations. When these aims are accomplished, the patient will build stronger self confidence and self esteem. This, in turn, will help him in his emotional life and social integration (Bracken, 1996).

A good indicator of self knowledge and awareness is the body scheme concept. The body scheme has been described in different ways. Bonnier (1905) used this term to mean body concept which allows orientation to the external environment. Schilder (1935) described the body scheme as the mental representation that a person has of his own body. Importantly, body scheme assumes also a psychological valence. In fact, body scheme is built not only through sensations and perceptions, but also through emotions, feelings and values, though out a person's entire life. In particular, children gradually build their body scheme (Carbonara - Savarese, 1994). When they acquire the object permanence, they can more easily develop the concept of their body as independent from other bodies (Le Boulch, 1981). Children get gradually in touch with their bodies and learn how to mentally represent them, globally and in detail. When the symbolic function appears, we can have the passage from body scheme to body image. One of the latest definitions, makes a distinction between body scheme and body image: the body scheme is the mental representation of the body as a spatial entity, built on cognitive and perceptive basis; the body image is the mental representation that everybody has of his own body, built on the personal psychological experience of it (Russo, 2000). There are different body scheme and image assessment tools. One of these is drawing. Figure drawings are projective construction techniques (Lindzey, 1959) in which an individual is instructed to draw a person, an object, or a situation so that cognitive, interpersonal, or psychological functioning can be assessed. A projective test is one in which a test taker responds to or provides ambiguous, abstract, or unstructured stimuli, often in the form of

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pictures or drawings. In most cases, figure drawing tests are given to children. This is because it is a simple, manageable task that children can relate to and enjoy. Widlocher (1972) has pointed out that a psychoanalyst that reads a drawing doesn't have to jump to conclusions. Some figure drawing tests are measures of cognitive abilities or cognitive development. Such tests consider how well a child draws and the content of a child's drawing. In some tests, the child's self-image is considered through the use of the drawings. In other figure drawing tests, interpersonal relationships are assessed by having the child draw a family or some other situation in which more than one person is present. Some tests are used for the evaluation of child abuse. Other tests involve personality interpretation through drawings of objects, such as a tree or a house, as well as people. Finally, some figure drawing tests are used as part of the diagnostic procedure for specific types of psychological or neuropsychological impairment, such as central nervous system dysfunction or mental retardation. The most acknowledged and widespread figure drawing projective tests used in psychological assessment are: the human figure drawing (Goodenough, 1926; Harris, 1963; Machover, 1948); the family drawing; (Appel, 1931; Porot, 1952; Corman, 1967; Burns and Kaufman, 1970); the house-tree-person drawing (Buck, 1948) ant the tree drawing (Koch, 1958).

The **Draw-A-Man Test** (Goodenough, 1926), was the first formal figure drawing test. It was used to estimate a child's cognitive and intellectual abilities reflected in the drawing's quality. The test was later revised by Harris in 1963 as the Goodenough Harris Drawing Test, which included a detailed scoring system and allowed for drawings of men, women, and the self. The scoring system primarily reflected the way in which the child is maturing cognitively.

The Draw-A-Person Test (Machover, 1948) used figure drawings in a more projective way, focusing on how the drawings reflected the anxieties, impulses, self-esteem, and personality of the test taker. In this test, children are first asked to draw a picture of a person. Then, they are asked to draw a picture of a person of the sex opposite of the first drawing. Sometimes, children are also asked to draw a picture of the self and/or family members. Then, they are asked a series of questions about themselves and the drawings. These questions can be about the mood, the ambitions, and the qualities of the people in the drawings. The pictures and the questions on this test are meant to elicit information about the child's anxieties, impulses, and overall personality. The Draw-A-Person test is the most frequently used figure drawing test today. It is usually read at three different levels: graphic; formal; content. In the human figure drawing the child unconsciously represents himself. A well-proportionate and structured figure, usually indicates a good perception of the body scheme. Accuracy in the face details suggests good relational and communication skills. It's very interesting to observe: the dimensions of the drawing, its position in the paper; proportions (head, trunk, limbs); the graphic stroke (curve or angular, weak or strong); the colours used. At the present, there are two main approaches to the interpretation of the human figure drawing. The first, the "particular approach", it's based on Machover's theory and draws its inferences from isolated features of the drawing (i.e. the eyes size). According to this methodology, some particular indicators have been associated to specific personality and/or psychopathological traits. (i.e. wide eyes are related to suspiciousness and paranoia; frequent erasing is related to anxiousness). The "global approach", has been developed by Koppitz (1968), who introduced a scoring system with 30 indicators which lead to a global score.

The **Family Drawing Test** was developed by different authors. The first one to use it has been Appel (1931). The two most acknowledged revisions are Porot's (1952) and Corman's (1967). This test allows to grasp several important issues as situations and feelings, sometimes unexpressed, such as fear, difficulties, but also love and desires. In a family drawing there are several aspects to take into account: graphic representation; wideness and strength of the pencil stroke; order of drawing (especially which is the first and the last character drawn); characters' placing and their spatial relations; erased, left out or added up characters; facial expressions; positions of legs, arms, hands.

The **Kinetic Family Drawing Technique** (Burns and Kaufman, 1970), requires the test taker to draw a picture of his or her entire family. Children are asked to draw a picture of their family, including themselves, "doing something." This picture is meant to elicit the child's attitudes toward his or her family and the overall family dynamics. This test is sometimes interpreted as part of an evaluation of child abuse.

The **House-Tree-Person test** (Buck, 1948), provides a measure of a self-perception and attitudes by requiring the test taker to draw a house, a tree, and a person. The picture of the house is supposed to represent an expression or projection of the child's feelings toward his or her family. It can also represent his infantile self-image. The picture of the tree is supposed to elicit feelings of strength or weakness. The picture of the person, as with other figure drawing tests, elicits information regarding the child's self-concept. This test, though mostly given to children and adolescents, is appropriate for anyone over the age of three.

We previously evaluated the applicability of drawing interpretation with patients, children and adults, with different pathologies. A drawing made by somebody with an intellective pathology usually reflects a general disharmony in the body scheme structuring and organization as well as in the relation with the external world. These drawing will have structural differences which change depending on the specific pathology. People with intellective pathologies usually draw faces with no facial expressions or emotional connotation. Someone who suffers from epilepsy usually draws disproportionate human figures, with bulky heads and small, or absent, limbs. People with psychotic pathologies, usually draw very small human figures, which seem lost in an empty space. Often these characters lack of "relational" organs such as eyes, ears, hands. Frequently there are breaking-ups, dismemberments, transparencies, that point out the general confusion between the inside and the outside, which is very frequent in this pathologies. Often the body scheme is reduced to small, linear and symbolic figures, often geometrical, that have a strong reassuring function. Who suffers from paranoid schizophrenia draws in a rigid and symmetric way. Their human figures are normally in the middle of the paper, with big heads and huge, dark, penetrating eyes. (Carlino Bandinelli - Manes, 2004). We decided to use the humane figure drawing (Machover, 1948) and the family drawing (Corman, 1967) to evaluate how therapeutic riding could affect the patient's self concept and body perception as well as their relational life. In addition to these two tests, we decided to apply the general rules of drawing's interpretation to another subject, which is certainly really meaningful and motivating for all our patients: the horse. Since the horse is the "prince" mean of our therapeutic work, he has a huge emotional impact on our patients, and the way they draw it lends itself well to be used as a mean to evaluate how the horse is perceived and experienced by the patient himself.

The horse could also represent the patient himself, because of the important processes of projection and identification he creates.

MATERIALS AND METHODS SUBJECTS

- 50 PATIENTS (28 FEMALES; 22 MALES).
- AGE : from 8 to 46 years (average: 14 years and 9 months) divided in three groups: from 8- 15; 16-23; 24-46 years.
- PATHOLOGIES: Down's syndrome; infantile cerebral palsy; mental retardation; epilepsy, autistic psychosis; malformative syndrome, behaviour disorders, evolutionary retardation, psychosis, skull trauma outcomes; cerebropathia, cerebellar ataxia, hydrocefalus, graft psychosis in intellectual deficit, language retardation; prematurity outcomes; encephalopathy; evolutionary disharmony; obsessive compulsive neurosis; scholastic and behavioural problems; hyperkinetic disorder.

EXPERIMENTAL PROCEDURES

Two drawing sessions were organized: the first after 4 horse therapy sessions and the second after 30 horse therapy sessions. We didn't have a drawing session at time zero because we wanted the patient to get a little acquainted with the horse before he had the chance to draw it. The time length between the 4th and the 30th horse therapy session has been, on average, 4 months of twice-weekly sessions. Only the therapist was with the patient, in an empty room. The patient was asked first to draw him/herself, then to draw a family, finally to draw his/her horse on white papers with a pencil. The drawing session usually took about 45 minutes. Every patient produced 3 drawings per session. The overall production was therefore of 300 drawings.

- For the human figure drawing the request was: "Draw yourself".
- For the family drawing the request was: "Draw a family, a family that is of your invention". If the patient didn't understand this request he was asked to draw an animal's family, to help the projective process (Corman, 1976). While the patient was drawing, the order of appearance of the different characters was recorded. After the drawing we asked for every character: name, role, sex, age. Then we asked the following questions:
- Who is the nicest? Why? 2)Who is the least nice? Why? 3) Who is the happiest? Why? 4) Who is the least happy? Why? 5) Who do you like better? Why? 6) Who would you like to be? Why?
- For the horse drawing the request was: "Draw your horse".

RESULTS

The drawings revealed a general improvement after the therapy in the way the patient represents himself and the horse. In contrast, there weren't significant changes in the family drawings. In many cases, the human figure drawing became more harmonic, complete and detailed. In other cases, the second drawing showed important details such as hands, arms or ears that were missing in the first one. There was no difference between male and female samples.

The age group that showed the higher number of changes was the group between age 8 and 15 years. Patients between age 16 and 23 usually showed less evident changes. Most of the older patients didn't show any improvement. In two of these cases the drawing even showed a slight worsening in the way they draw themselves or the horse. This happened with the only patients with age above 29: a 46 years old woman with a diagnosis of autistic psychosis and severe mental retardation and a 39 years old woman who suffers from skull trauma outcomes. In our opinion this could be due to the fact that drawing is sometimes perceived as a childish activity, so the oldest patients' motivation to draw, in the second session, could have been definitely decreased.

The most evident result was that a significant number of patients, during the second session, decided to draw himself with the horse, sometimes when they were asked to draw themselves, sometimes when they where asked to draw the horse. This likely represents the achievement of a greater confidence as well as the establishment of a strong bond with the horse. The patient seems to think of the horse as an integral and distinguishing part of himself, his personality, his way of being, which can't therefore be omitted in a self-representation.

Some of the most representative drawings are the following.

C.R. - Male - Age: 10 - Diagnosis: developmental retardation.

In the first human figure drawing his fingers look like claws, usually a signal of aggression. In the second human figure drawing he draws himself on the horse and the fingers look round and open in a hug. The horse is represented with three teeth: an interpretation could be that the patient found a functional way to project his aggressive impulses. During therapy sessions he was at first very stiff, insecure, pessimistic. Now he has a greater self confidence and he also has a greater spirit of initiative.





C.M. - Female - Age: 15 - Diagnosis: psychomotor development retardation; psychosis; malformative syndrome; chronic bronchopathy.

In the first human figure drawing there are many black areas, especially in the eyes, ears, mouth and arms. In the second drawing, even if it still is an incomplete and lacking representation, there's a more harmonic and less conflictive way of drawing herself. During therapy sessions she became less stiff and much more calm and self confident.



R.F. - Male - Age: 13 - Diagnosis: mental, language and evolutionary retardation.

In the first human figure drawing there is an evident disproportion between the head, that is very small, and the rest of the body. In the second drawing the figure is bigger, better proportioned and well structured. During therapy sessions he is more autonomous and independent and he also takes more initiatives. He's also making a great effort in trying to improve his language skills.





S.G. - Male - Age: 9 - Diagnosis: evolutionary retardation.

In the first human figure drawing he draws himself as almost crashed by a dark and flat sky. In the second drawing he draws arms and hands, and the sky appears now further away and lighter. This seems to be an expression of new possibilities and hopes, almost as the child now, thanks to the horse, feels like he could also fly, if he wants to, just like the cloud and the bees fly around him. During therapy sessions he's a little more autonomous and self confident, but he still often looks for the therapist's approval.



S.A. - Female - Age: 14 - Diagnosis: obsessive compulsive neurosis.

In the first family drawing she represents the characters frontally. They seem to look around in an avoidant way, and their smiles seem stretched and performed. In the second drawing the characters touch each other in a more affective way, they look at each other, with bigger and open eyes, and a new baby arrived. Dresses are less formal and the general sensation is of a greater possibility to relax and be oneself. In both drawings the sun (usually the father) appears as something that has to be shielded, in the first one with sunglasses and a tree, in the second one with sunglasses and a small cloud. During therapy sessions she become more autonomous and independent.





M.F. - Female - Age: 11 - Diagnosis: evolutionary disharmony.

In the first horse drawing she draws the horse inside the box. The graphic stroke is strong, persistent, the horse looks dangerous, she tries to make him harmless putting him in a sort of cage, which is also banished in a corner of the paper. In the second horse drawing the horse is in the middle of the scene and the child is close to him. She still draws a sort of protection barrier, but the open smile and arms show a great desire of getting in close touch with the horse. During the therapy sessions she became more self confident, autonomous and open in the relationship with the therapist and other patients. She now performs a better space and time orientation.



T.M. - Female - Age: 11 - Diagnosis: right emisphere cerebropathia - emiparesis.

In the first horse drawing she draws just the horse and she ties him to a fence. In the second drawing she is on the horse, and she is in charge. During therapy sessions she used to avoid, as soon as the therapist wouldn't look, to use the right hand, i.e. to clean and brush the horse. She actually didn't draw a part of her right side of the body, and she keeps it in the background. Later on she still needed to be encouraged, but she would use her right hand more often. Her attitude towards the therapist was in the beginning a little insecure and worried. She become much more relaxed and less worried about judgement.



DISCUSSION

The results we found are an useful help to understanding the way the patient perceives himself, the environment and the horse. The human figure drawing seems to be the one that shows the most important changes and improvements in the body scheme and body image as well as in the psychological and emotional aspect. The family drawing, which is the most "relational" expression, didn't give significant results. It seems that the projective family drawing didn't turn out to be suited for this kind of work, because the projections are too different and cannot be easily compared. Maybe, a better tool to explore the patients' relational world should be still assessed.

On the contrary, the horse drawing seems to be a really helpful tool of assessment.

The way the patient draws the horse tell us a lot about his bodily scheme, his space and time awareness, his sensi-motor experience. For example, we can get from a drawing a clear image of if and how the patient is aware of his whole body, his hemisoma, his upper and lower limbs, his body axes, his place and movement in the space, his environment processing. The way he draws himself with the horse, as well as the decision of drawing just the horse, are both a meaningful indication of how the patient perceives himself in relation to the horse and the environment. This kind of drawing are related to the experience of enjoyment and achievement or, more rarely, of frustration and helplessness that patient experiences during the therapy session.

To conclude, the drawings seem to represent a privileged window which overlooks the patient's affective dimension. From that window we can take a discreet and unobtrusive look at his inner world.

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WHAT IT IS KNOWN ON THE EQUOTERAPY: WITH THE WORD HEALTH PROFESSIONALS OF THE CITY FRANCA-SP.

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ABSTRACT

This research is part of a Psychology Monograph and had as objective to verify what the Health professionals know on the Therapeutic Riding. The research was composed for an interview applied in 50 Health professionals: 10 Psychologists, 10 Physiotherapists, 10 Neurologists, 10 Orthopedists and 10 Pediatricians. The results had been grouped in categories of quantitative and qualitative analysis of the general data. It could be concluded that the professionals possess little knowledge concerning the Therapeutic Riding, with exception of the Physiotherapists and Psychologists. The work also was a form of spreading of this therapeutical practice.

Key-words: Equotherapy, Health professionals.

RESUMO

Esta pesquisa é parte do Trabalho de Conclusão do Curso de Psicologia e teve como objetivo verificar o que os profissionais da área de Saúde conhecem sobre a Equoterapia. A pesquisa foi composta por uma entrevista aplicada em 50 profissionais da área de Saúde: l0 Psicólogos, l0 Fisioterapeutas, l0 Neurologistas, l0 Ortopedistas e l0 Pediatras. Os resultados foram agrupados em categorias de análise quantitativa e qualitativa dos dados gerais. Pôde-se concluir que os profissionais possuem pouco conhecimento acerca da Equoterapia, com exceção dos Fisioterapeutas e Psicólogos. O trabalho também foi uma forma de divulgação desta prática terapêutica.

Palavras-chave: Equoterapia; Profissionais da área de Saúde.

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INTRODUCTION

The Psychology Monograph left of the interest in searching what the Health professionals know on the Therapeutic Riding.

Being the Therapeutic Riding one existing technique in Brazil has about 20 years, still little is spread out in the half population professional and, mainly in cities of the interior, as Franca-SP (local where the research was carried through). Thus, the objective of the research was to verify what the Health professionals of the city of Franca know concerning the Therapeutic Riding. The hypothesis of the researchers was of that such professionals present little knowledge about of this therapeutical resource, since the same still little is spread out in the city. Observing the innumerable biological, emotional and social benefits, one becomes of primordial importance that the Therapeutic Riding is known by the Health professionals. One gives credit that the Therapeutic Riding is a new field of performance for the Psychologist, whose area of performance it has extended each time more with intention to create more resources for the health and well-being of the individual.

The accomplishment of this research is a way to divulge the work of the Therapeutic Riding. One gives credit that the study it will contribute for the increase of research concerning the subject.

MATERIALS AND METHODS

The research is about the knowledge that the Health professionals of the city of Franca know on the Therapeutic Riding.

During the process, the researchers had made the bibliographical survey concerning the subject, which scarce must to the fact of being a new science in Brazil and still little explored.

Initially, a study was carried through pilot with 10 professionals of the areas of Health and Education. Later, an interview half-directed composed for seven questions was become fulfilled that will be displayed in the quarrel of the results.

50 Health professionals had been interviewed: 10 Psychologists, 10 Physiotherapists, 10 Neurologists, 10 Pediatricians and 10 Orthopedists. Of these professionals, 6 if had refused to answer the interview (3 Neurologists, 2 Orthopedists and 1 Pediatrician). One of the professionals of Physiotherapy already worked with this practice therapeutical.

Despite the Therapeutic Riding is being carried through by an interdisciplinary team, one opted to the choice of the Health professionals, considering the time to the accomplishment of the research. About the Neurologists, 57% are of masculine sex and 43% of the feminine sex. The age band varies of 28 the 54 years, not occurring accumulation in no analyzed category (average = 42 years). The time of formation of these professionals is of 2 the 27 years (average = 16 years).

All the interviewed Orthopedists belong to the masculine sex (100%). The age band is of 32 the 57 years of age (average = 35 years). About the formation time, it is distinguished of 8 the 30 years of profession (average = 15 years).

About to the Pediatricians, 55% are of masculine sex and 45% of the feminine sex. The age varies of 36 the 65 years (average = 51 years). Upon the formation time, the intervals vary of 12 the 32 years (average = 24 years).

In relation to the Physiotherapists, 80% are of the feminine sex and 20% are of the masculine sex. The age band varies of 25 the 39 years of age (average = 27 years). Upon the formation time, the intervals vary of 1 year and way the 9 years (average = 4 years).

Upon the Psychologists, 80% are of feminine sex and 20% of the masculine sex. The age band varies of 26 the 47 years of age (average = 36 years). In relation to the formation time, the intervals vary of 2 years and way the 25 years of profession (average = 11 years).

It was used material of audio (recorder), and paper, pens, computer.

The interviews had been recorded aiming at it to get a bigger allegiance to the informed data, preventing to the maximum the interference of the researchers. In the end of the interviews, it was delivers to an information paper about the Therapeutic Riding, being this a form to divulge more about of this practice in expansion.

The tabulation of the data was made before categorization of professionals of each area (Psychologist, Physiotherapist, Neurologist, Pediatrician and Orthopedist) and also a general categorization of all the interviewed professionals, which will be displayed in the article in question. The categories had been analyzed quantitatively and qualitatively.

QUARREL OF THE RESULTS DATA OF PROFESSIONALS OF THE HEALTH AREA (GENERAL)

100%

121

	1
Frequency	%
27	22,329
11	9,099
83	68,599
-	Frequency 27 11 83

Table 1 - What do you understand for Therapeutic Riding? (N = 44)

TOTAL
The table presents what the professionals understand for Therapeutic Riding. 22,32% of the answers had pointed the correct definition of Therapeutic Riding, or either, a therapy that uses the horse. In respect to the unfamiliarity of the Therapeutic Riding, 9.09% of the answers are observed. About 68,59% of the answers they had been considered incorrect, had to the fact not to approach the definition in itself of this practice. However, it is standed out that they had been pertinent answers to the subject, however that they had not answered correctly to the question, such as: therapy that improves the motor development, therapy that improves the emotional development.

MATERIALS USED	Frequency	%
Unfamiliarity of the materials	19	18,62%
Incorrect	33	32,35%
Correct	50	49,03%
TOTAL	102	100%

Table 2. - For you, the Therapeutic Riding uses which materials to be carried through?

The table mentions the materials used in the Therapeutic Riding. 18,62% of the answers had mentioned the unfamiliarity about the materials. 32,35% of the answers had been incorrect, or either, specialized practitioner and professionals. These topics are essential for the accomplishment of the Therapeutic Riding, however they are not considered material. In relation to the correct answers (49,03%); it is distinguished the horse, the pedagogical materials and saddling materials.

Table 3 – What are the professionals who work with the Therapeutic Riding?

PROFESSIONALS THAT WORK WITH	Eroguongu	0/
THE THERAPEUTIC RIDING	rrequency	/0
Phonologist	02	2,25%
Pedagogue	02	2,25%
Physical Education Teacher	04	4,49%
Occupational Therapist	07	7,86%
Psychologist	16	17,97%
Physiotherapist	33	37,07%
Neurologist	05	5,62%
Orthopedist	03	3,37%
Doctor	02	2,25%
Horse-Horse-Riding Instructor	02	2,25%
Psychiatrist	01	1,13%
Unfamiliarity of the professionals	12	13,49%
TOTAL	89	100%

In relation to the professionals who work with the Therapeutic Riding, 1.13% of the answers point the psychiatrist; 2,25% mention the following professionals to it: Phonologist,

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Pedagogue, Horse-Horse-Riding Instructor and doctor of any specialty. 3,37% of the answers had cited the Orthopedists. 4,49% of the answers had been referring to the Physical Education Teacher. About the Neurologists, 5.62% of the answers are observed. 7,86% of the answers had pointed the Occupational Therapist. In relation to the Psychologist, 17.97% of the answers can be observed. In 37,07% of the answers, the Physiotherapist was distinguished. In relation to the unfamiliarity of the professionals, 13,49% are observed.

INDICATIONS OF THE THERAPEUTIC RIDING	Frequency	%
Correct	138	90,19%
Incorrect	07	4,58%
Unfamiliarity of the indications	08	5,23%
TOTAL	153	100%

Table 4 - The Therapeutic Riding is indicated for which people?

The table is referring to the indications of the Therapeutic Riding. 90,19% of the answers had been considered correct, such as: neurological patients, deficient physicists, emotional problems, amongst others. 4,58% of the answers had been considered incorrect. Upon the unfamiliarity of the indications, 5,23% can be observed.

Table 5 - In the Therapeutic Riding, what is waited that the practitioners develop or improve?

BENEFITS OF THE THERAPEUTIC RIDING	Frequency	%
Physical benefits	97	62,18%
Emotional /psychological benefits	33	21,15%
Social benefits	16	10,25%
Unfamiliarity of the benefits	10	6,42%
TOTAL	156	100%

The table points the benefits of the Therapeutic Riding. 62,18% of the answers say respect to the physical benefits (it improves in muscles, concentration, position). 21,15% of the answers mention the emotional benefits (security, self-esteem, affectivity). 10,25% of the answers mention the social benefits to it (socialization, communication). 6,42% of the answers if had related to the unfamiliarity of the benefits.

Table 6 - For you, exist difference between Therapeutic Riding and Horse-Riding?

DIFFERENCES BETWEEN THERAPEUTIC RIDING AND HORSE-RIDING	Frequency	%
Yes	38	84,45%
Unfamiliarity of the differences	07	15,55%
TOTAL	45	100%

The table says respect to the difference between Therapeutic Riding and Horse-Riding. 84,45% of the interviewed professionals had pointed differences between the two practice ones. The

Horse-Riding is considered a sport, having been able to be indicated for any individual and can use any horse. The Therapeutic Riding was defined as a therapeutical resource that aims at the rehabilitation, being indicated for people with some pathology, using itself of appropriate horses to this practice. 15,55% of the answers had pointed the unfamiliarity of the differences between Therapeutic Riding and Horse-Riding.

COMMENTS CONCERNING THE THERAPEUTIC RIDING	Frequency	%
Unfamiliarity of the Therapeutic Riding	06	15%
Necessity of bigger spreading for population and professionals	16	40%
Importance of the t interdisciplinary team in the Therapeutic Riding	05	12,5%
Involvement of the professionals interviewed with the subject	08	20%
Necessity of better preparation of the professionals	01	2,5%
It promotes emotional profits	01	2,5%
Elitist therapy	01	2,5%
It promotes global benefits	02	5%
TOTAL	40	100%

Table 7 – Other comments that you want to make concerning the subject.

The table mentions the comments to it that the professionals had made concerning the subject. 15% of the answers had detached the unfamiliarity of the Therapeutic Riding for the people; and that 40% point that it has a bigger necessity in such a way to divulge the subject for the professionals and to the general population. 12,5% of the answers relate to the importance of the interdisciplinary team for the practice of the Therapeutic Riding. In 20% of the answers the involvement of the professionals with the subject was observed. In relation to the necessity of one better preparation of the professionals, in whom it says respect the supervisions, specializations, notices 2.5% of the answers. 2,5% of the answers also are referring to the gotten emotional benefits with the practice one of the Therapeutic Riding. 2,5% of the answers point the Therapeutic Riding as an elitist therapy and 5% of the answers had commented on the gotten global benefits with the practice one of the Therapeutic Riding.

50 professionals for the accomplishment of the interview had been looked. However, 6 of them had refused to answer to the same one, alleging the non-availability of the time, the lack of knowledge on the subject and the distrust in signing the commitment term.

Some aspects that they deserve to be detached front to the harvested data.

In relation to that the professionals understand for Therapeutic Riding, a bigger recognition of incorrect answers was perceived (65,88%). The same ones had been considered incorrect had to the fact not to approach the correct definition of this practice, or either, a therapy that if uses the horse. This fact can have occurred due to a carelessness of the professionals

in question stops with the question or exactly had to a bad formation of the professionals in Portuguese, after all the question simple and was directed.

Upon the materials used in the Therapeutic Riding, a bigger recognition of answers is perceived correct (46,73%) (horse, pedagogical materials and saddling materials). On the other hand, it was observed (30,84%) of referring incorrect answers to the materials (practicing, interdisciplinary team and adequate physical space). One concludes thus, that the professionals, in a general way, possess knowledge concerning the materials used in the Therapeutic Riding.

In relation to the professionals who work with this therapeutical practice, the Physiotherapist was more of the cited professional (35,10%). Such aspect can have to the fact of the Therapeutic Riding to be many times confused with an area of the Physiotherapy, associating with a bigger recognition of referring answers to the physical benefits (60,25%) propitiated with the practice of this therapy (it improves muscles, balance, position, amongst others). Duran (2005) affirms that of the neurological point of view, the Therapeutic Riding can be justified as a therapeutical process that facilitates to the integrations of the superior cortical functions and cerebral functional organization by means of the movement, has adjusted tonic, association and rhythm. It is standed out that the interviewed professionals had pointed the physical benefits, however they had not been attempted against how many to the neurological aspects.

The second category of cited professionals more than could work with the Therapeutic Riding had been the Psychologists (17,02%), what it can be correlated to the second category of the benefits, as being emotional/psychological benefits (20,50%) (security, self-esteem). Such benefits are intensified had to the fact of if using an alive being as mediating.

About the indications of the Therapeutic Riding, a high index of correct answers was observed (87,34%), what it denotes the knowledge of the professionals.

Upon the differences between Therapeutic Riding and Horse-Riding, a high index of correct answers was observed (76%).

Regarding the referring comments to the subject, the presented answers more if had related to the unfamiliarity of the Therapeutic Riding (15% of the answers), thus needing, of bigger spreading for the population and the professionals (40% of the answers). Moreover, it was possible to observe the involvement of the professionals with the subject (20%), as well as the prominence for the importance of the interdisciplinary team (12,50%). Fazenda (1994), affirms that the interdisciplinary is a natural requirement of sciences, in the direction of one better understanding of the reality that they in make them to know.

Being the referring research a Psychology Monograph, importance of this new field of performance for the Psychologist is distinguished it. Despite the Clinical area being sufficient associate to the individual doctor's office, the professionals are searching new forms of performance in the social context. In accordance with the Conselho Federal de Psicologia (1994), the axle that leads the insertion of the Psychologist in the actions of Health is, perhaps, most important amongst that they are printing changes in the performance of the Clinical Psychologist. The Psychologist acting in the Therapeutic Riding and a social context, keeps a clinical look on the dynamics of the practitioner.

It is argued today the work where the Psychologist more is integrated to a group, not only come back toward the individual one. And a great differential of the Therapeutic Riding is fact of the same one to be a interdisciplinary work, therefore each session has at the very least three professionals being, the Physiotherapist, the Psychologist and the Instructor of Horse-Riding. A great partnership of the professionals is perceived, providing a holistic vision of the practitioner.

FINAL CONSIDERATIONS

The work was significant for our learning and our profession. We could verify how much the Therapeutic Riding still is one technique little explored in our way and, at the same time, how much it needs to be divulged.

This work comes to enrich Psychology, approaching referring questions to the magnifying of the field of performance of the Psychologist, considering that this professional is essential in the interdisciplinary team that acts in this practice therapeutical.

Valley to stand out that we had difficulties in the access to some professionals of the medical area, what it can have been decurrent of the fact not to possess knowledge on the subject. It was concluded with the accomplishment of the research that the Therapeutic Riding still is one practice little known in the Health area of the city of Franca, thus needing a bigger spreading of the same one in such a way for the professionals and for the population in general.

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THE HARMONIC MOVEMENT AND POSTURE OF TRUNK WITH ITS CROSSED LEGS FACILITATING THE ORGANIZATION ON SPASTIC

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INTRODUCTION

The global motor sensorial development occurs according to principles as mobility, stability, and notion of medium line, rhythm, and movement dissociation and environment stimulation. It is necessary has a stable base to develop ability of movement. With no stability, the mobility has no control, being disorganized. The mobility and the stability have influential at breathing, oral and digestive ability development, once that this one depends on neck and shoulder control, which, depends on the stability of trunk and pelvis.

Children with especial necessities as cerebral sequels with spastic tend to develop joint deformities because the spastic muscle has no normal growth. Internal rotation and hip and foot equine are frequent deformities. Beyond that, quadriplegic children with spastic can develop hip paralytic luxation and scoliosis.

The hippotherapy can be applied to people who have several physical, psychological and social characteristic. In the rich universe of hippotherapy environment, the physiotherapy can use a great number of alternative and its techniques since clinic situations with soft diagnosis to more severe, promoting a biomechanics alignment and favoring the symmetry. The goals of assistance aim to facilitate the functionality of vital organs and of skeletonmuscle system, mainly, to improve the life style of practitioner and his family.

During the horsing natural march, the horse has motion cicles alike to the human march and that parallel can be evident by the multidimensional movement of both. The hippotherapy uses these characteristics from health professionals knowledge who will compose an interdisciplinary team, aiming the improvement of tonic adjustment, corporal alignment, postural equilibrium and the global function of people with special necessities. When riding a horse, we observe that the equine movement may help the practitioner, knight, to improve its march, posture and balance for being analogous to the movement of human march. Add to this, the unloading of the weight of the pelvic base over the blanket or saddle, increased of dissociation of pelvic and scapular waist.

This text has the aim to introduce the reached gains with the hippotherapy treatment on quadriplegic practitioners with sequels of cerebral paralysis and to asses the effect of the treatment suggested as one more alternative to the gain of cervical and trunk control. The more immediate result were seen by the relatives, particularly, on the moment of meal, when there were no more regurgitation and choking problems. The lung ventilation is also other fact proved on the home descriptions and on the reevaluations during the assistance.

METHODOLOGY.

It is related cases of three hippotherapy practitioners with sequels of cerebral paralysis with spastic quadriplegics, presenting a diminishing of muscular tone on trunk and tone increasing of extremities, their down members take the scissors crossed position by hips adduction. The practitioners are the age from 6 to 8 years old and had only participated of hippotherapy sessions on the stomach down and back down positions, during the anterior semester to this research. In this new treatment proposal, they were positioned on the horse with their lower limbs crossed on the lotus position. The three ones have been selected among the practitioners with were assisted by the Hippotherapy Basic Center' Phisyotherapy Sector of Hippotherapy National Association (ANDE-Brasil), whose dispose themselves to carryout this study.

The practitioners were physically assessed about their support mechanisms against the gravity action and about reaction body corrections. It was emphasized the relating factors to the seating position, basically, the ability of keeping himself on the position at independent way or with the minimum of support. The evaluations were made before the beginning of the program of assistance with Hippotherapy, and reevaluated at every 10 sessions and after the end of planned semester.

Assistance method.

Based in the development of assistance programs offered to practitioners with similar physical diagnosis. To practitioners with these characteristics, the recommended program is hippotherapy, where the horse is leaded on organized step, passing by simple routes on plain grounds, grass or firm sand. In order to the practitioner can get a correct reaction to every new stimulus of body correction, the horse step has to be harmonious and slow, in a way that it has a lateral oscillation with short amplitude while goes ahead. It is accomplished orienting the horse step be made in a way with the back pawn of a side doesn't lie in front of the horse track on the ground by the anterior pawn of the same side.

The parameters.

The hippotherapy sessions has been offered in the ANDE-Brazil's Hippotherapy Basic Center, on the frequency of once a week and about 30 minutes by session, where the practitioner has to be kept on the horse with his crossed legs and with his trunk on the most possible vertical position. To get gains on the cervical control it was necessary the presence of two therapists, one to maintain the lower limbs in the crossed position in order to blocked the extensor pattern of that segments and the other one to offer support to the base of the trunk while stimulates with his fingers, the back spine's extensor muscle on the portions where the contraction were more precarious.

RESULTS.

The analysis of results were being made during the assistance period with photographs and moves in the lateral, back to front and front to back position of practitioners. With these

data, we can see that at seating position, the lower limbs tend to go to front and the practitioner's trunk tend fail to back, needing to bend his shoulder and flex his trunk to front, increasing the dorsal cyphosis, so, the importance of using the pattern extensor on the lower limbs keeping it passively crossed and seating at the lotus position. With the blocked offered, the upper part of the trunk gets free to react to digital stimulus applied at its vertebral muscles, once the sacral bone is also an the vertical position, avoiding its posterior inclination. Adding to the therapist stimulus, occurs the horse step three-dimensional movement, inducing to automatic reactions. At this moment, the practitioner's base trunk is pressed between his high corporal base and the horse body because the action of gravity, pressing it from down to up to every new step. To this happen, the animal were conduced on way that it produced regular movements according to the level of corporal control acquired for each individual.

The observed practitioners started the sessions of hippotherapy with no cervical and trunk control and improved their corporal self-conscious. With this gain, they got localize each muscular portion to be contracted, and so, they obtained the cervical extension and even of the trunk, what offers more credibility to the practice of hippotherapy as a scientific method to the corporal stability treatment in cases of neurological problem.

Because it is a scholarship based on reported cases, each practitioner will be described as individual case, from photographic comparing images of before, during and after this research and from reports of each session and of the final report.

Practitioner 1 – A B.S.B.6 years old, male gender, cerebral paralytic, assisted once per week at hippotherapy, and during the week days, his is assisted by a multi-professional team, at Mothers, Fathers, Friends Rehabilitation Association – AMPARE.

The adopted strategy at his assistance was of to stimulate the cervical and trunk control offering support at lumbar region and at cranium base, given to tendency of compensate the lack of muscle control causing increasing of cervical lordosis. As the practitioner were very short to abduct his hips to mount, we opted for the lotus position. Initially, this posture required being alternated to belly down position given the low endurance to muscle fatigue. After 10 sessions the practitioner got already keep himself for 20 minutes with his trunk at vertical position, and from this point on, his progress has been constant, on a gradual level and according to his physical potential. The center of gravity was being found by the practitioner more easily, showing a better endurance to fatigue while at the seating position. Finally; we accomplished that the practitioner got keep himself at stand, from support on his hips, beyond this success, he has been motivated to try support on his upper limbs and find a correct head position.

Practitioner 2 – V.H.A R, male gender, cerebral paralytic, assisted once a week with hippotherapy and twice a week by physiotherapy at private clinic.

We got offer support to the trunk and to cervical region, which has facilitating his corporal control. His lower limbs passively crossed at lotus position make easy the base of back spine adjustment, inducing to the vertical position of all vertebral column. With digital stimulus at vertebral cervical and dorsal extensor muscles, we got to activate the local musculature to make him to extend his trunk on correct way and kept it self well positioned. Every activity

were proposed on gradual way, according to practitioner's physical potential. We alternated the erect trunk posture with moments at belly down position, however, on these moments, the practitioner were asked for to paravertebral muscular contraction with digital stimulus, in way of repose that demanded constant muscular activity.

The practitioner, frequently smiling, passed to receive support only at the base of his trunk and head, obtaining moments of column extension without tactile stimulus. He got kept himself just receiving support on his arms and at base of his trunk, accomplishing 30 minutes of very well corporal control, from supports and kept seated with his lower limbs on crossed position.

Today, doesn't occur adduction with hip involuntary extension anymore, enabling the practitioner mount on classic ride horsing position with his lower limbs hanging normally, needing support only to one of his arms.

Practitioner 3 – D.S.R, 8 years old, male gender, cerebral paralytic, assisted once a week by the hippotherapy and during the week days, by a multi-professional team at Mothers, Fathers, Friends Rehabilitation Association – AMPARE.

His lower limbs were blocked on seating lotus position, on blanket at the back of the horse, which restrain the extensor pattern and makes easy the vertebral column extension. There were moments of complaints because of pain at hip mobilizations, given to the left feet tend to internal rotation, but the practitioner always finished the sessions with satisfaction and a beautiful smile. The same smile happens with digital stimulation on vertebral extensor musculature to correct the tendency to dorsal cyphosis, that facilitated very much the interaction between therapist and practitioner.

We observed how the hippotherapy have been benefited to the practitioner's clinic situation, improving his corporal conscious, his trunk control, and the upper limbs functionality, making them get mount on classic mounting, not being necessary be positioned on the lotus position. For all we have observed, the treatment aims continue to be the same and with the same activities, given to excellent prognosis which we could see to his trunk and cervical control.

DISCUSSION.

Mounting with crossed lower limbs on the lotus position facilitates the form of the practitioner be supported on the horse, enabling him to enjoy the benefits of hippotherapy, just for permit him an optimum manual support at the base of his trunk.

The position with crossed lower limbs or lotus position gives advantages and disadvantages to the patient with cerebral paralysis. This position has the advantage of avoid the "W" or frog position, but it has the disadvantage of to block the lower limbs movements, making difficult the balance reactions to weight transfer. In the hippotherapy we can also think differently to this way of mounting by the possibility of the practitioner to be seating on his coccyx instead of his ischia bones, given to tendency of pelvis bend back when it doesn't well supported.

Other contrary thinking to mounting on the lotus position, is based in the fact that it induce shorting of lower limbs' posterior muscles, beyond of take off sensorial piece of information originated on all structures localized in lower limbs, on the pelvic base and on the internal thigh faces, beyond of toe support in that practitioners whom get to support their foot on stirrups. Also it diminishes the practitioner's spatial orientation by losing the relation of trunk posture on the vertical position to lower limbs which would be more below.

The ideal posture to ride a horse is keeping foot supported on stirrups and the lower limbs to down, stimulating the notion of ahead direction. The use of horse's medium line facilitates this organization and the trunk orientated stimulates a better look and cervical control. The adequate posture enables the medium line and symmetry, providing stability to the oral, ventilation, digestive, circulatory and visual motor function and of muscle-skeleton system, improving the practitioner's life style.

Riding a horse on the lotus position, the support of the hands on knees and the own tendency of upper limbs extension, helps the transmission of impacts movements of the horse to shoulders, transmitting the weight to the shoulders, distributing this from a side to the other side, balancing the weight between the shoulders and hips and so improving the vertical line.

FINAL CONSIDERATIONS

The mainly aim of this work is asses the influence of hippotherapy on the improvement of trunk cervical control using another way of starting to horse riding, and so, assuming the classic mount posture. In this case, all three practitioners assisted at lotus mount position, obtained cervical and trunk extension at the end of proposed period, getting accomplished the classic mount form, so, with their legs hanged without necessity of posterior support to keep the pelvis in vertical position, making clear the efficiency of proposal here showed. Firstly, was stimulated the cervical and trunk control, getting the possibility of mounting. In the future, we will start a program to reach the support of foot on stirrups, decreasing the chance of muscle shorting on the posterior muscle of legs, beyond of stimulate the functionality of lower limbs to support itself on ground.

The literature registers few forms of assistance to the practitioners with physical characteristics alike and we hope that this study may collaborate to motivate the hippotherapy professionals to continue their researches and on quest of new challenges which have the aim of practitioners and their relatives' life style. It is important we enhance the interdisciplinary presence at hippotherapy, because with the involvement of all, we will get necessary stimulus to persist in the quest of good results, even that the introduced case is a difficult prognostic.

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EFFECT OF HIPPOTHERAPY IN THE TRUNK POSTURE OF SITTING DIPLEGIC CHILDREN

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INTRODUCTION

Cerebral Palsy (CP) is a group of cerebral disturbs with stationary character caused by any injury in the pre-, peri- or post-birth period or during the first years. It is characterized by alterations on movement control, adaptations on muscle length and, in some cases, bone deformity. The motor disturbs are classified according to body segment affected, involuntary movements and clinical characteristics of muscle tone (SHEPHERD, 1998).

It is important to determine the etiology and the specific type of CP to have an appropriate prognostic and treatment program. The CP classification may be given according to the movement, motor commitment pattern, severity, besides the muscle tone alteration which is observed by the resistance level to passive stretching, according to Katz and Rymer (1989, in Iwabe and Piovesana, 2003).

Spastic diplegia is the most common type of CP among prematures. This condition is characterized by moderate spasticity of lower members with a minimal involvement of upper members (TACHDJIAN, 1995).

Spasticity has a great influence in the posture of diplegic children. The normal posture is visualized by the alignment and symmetry of body parts and co-contraction of muscles around the joints, which added results in a global equilibrium (BERTOTI, 1988).

Many CP children, even those with mild to moderate spasticity, present hyperkyphosis when they are sat. They use this compensatory mechanism to align the scapular and pelvic girdle, due to the increased extensor tone. These children present an inadequate hip flexion and, as a consequence, shortening of posterior lower members chain To compensate little hip flexion in the sitting position, a pelvic retroversion occurs what leads the child to sit on the isquial tubers. In order to avoid back fall, the child moves forward the gravity center by flexing the spine and producing a kyphotic posture (REID, 1996).

According to researches, ambulatorial observation and report of people responsible for the patients, children with CP spend most of their time in the sitting position. Due to the kyphotic posture there will be some disadvantages such as compression of the thoracic region, decrease of the thoracic expansion, difficulty on phonation, swallowing and using upper and lower members - already impaired by the lack of motor control - and also eyesight limitation of the environment (TACHDJIAN, 1995).

The goal of CP's treatment is to potentialize functions and prevent the development of other problems such as contractures, necessity of surgery, besides to permit the child to be part of normal activities with other people (MERENGILLANO, 2004).

In the long term, physiotherapy lowers the impact of multiple incapacities, while improves postural alignment and motor skills. However, therapeutic repetitive job is often tiring, so it requires creativity from the therapist to maintain children's adhesion and enthusiasm. In this case, hippotherapy appears as a beneficial strategy since it lets the patients highly motivated (BENDA, MCGIBBON e GRANT, 2003). It also acts directly in motor disabilities and reflects in the sensorial via, thanks to the utilization of proprioceptive, tactile, vestibular, visual and auditory stimuli (MEDEIROS e DIAS, 2002).

"Hippotherapy is a therapeutic and educational method which uses the horse in an interdisciplinary approach in health, education and horse riding aiming the biopsycosocial development of disabled persons and/or with special necessities" (ANDE, 1999).

The aim of this article was to verify whether there is any improvement in the trunk posture of sitting diplegic children after hippotherapy, once it is the position adopted by them in most of their daily activities.

Currently, there are some instruments to evaluate the spine curvatures and mobility and the Flexicurve is growing in importance because of its advantages, such as low price and weight, reproduction of the spinal curvature by a drawing and bigger reproductability and validity in consecutive measures (THOMPSON e EALES, 1994). These characteristics qualify the method as affordable, reliable and easy to use.

This instrument has a lot of commercial presentations, but in general, it can be described as a flexible ruler made by rubberized lead league, that permits flexibility and functionality in drawing molds and/or curves. The application technique for clinical use usually consists in applying the rod lying over the surface to be measured, being aware to model it according to the surface's format and angles to be assessed.

The use of flexicurves was subjected to a series of reliability and validation experiments (TILLOTSON e BURTON, 1991; CAINE, MCCONNELL e TAYLOR, 1996). The data suggest that the flexicurve method is less biased than others (THOMPSON e EALES, 1994).

MATERIALS

This article is a case study developed at Physiotherapy Clinic School of Universidade Católica de Brasília (HUCB) and at Regimento de Polícia Montada do Distrito Federal (RPMON/DF), during 10 weeks. The project was approved by the Ethics Committee of the university. Both male and female children with ages between 31 and 72 months with spastic diplegia under conventional treatment were selected in a convenience sample. As inclusion criteria patients should have been diagnosed spastic diplegia mild to moderate, not been previously included in hippotherapy practice, have functional ability to sit and stand alone, not present contraindication and the parents should sign a informed consent statement. The exclusion criteria were other types of CP and absence in more than three sessions.

At first, it was made an evaluation of the child sitting without back support and arms lying on his or her legs, which were in 90° of knee and ankle flexion, with some kind of support when necessary to maintain this angle. The patient was not asked to correct the posture, standing on a normal position. Once the position was stabilized, the flexicurve was molded to the contour of the spine and traced onto a piece of paper where the points corresponding to T1 and T11-T12, previously identified in patient's spine, were marked with with adhesive labels.

The measurement technique was according to Burton (1986, in Tillotson and Burton, 1991) and the main instrument was a 60cm flexible ruler (Trident®). This stage was made by an only assessor, previously trained to mark the spinal process and to use the ruller.

To obtain the results referring to kyphosis degrees of each child, the most distant point between the line traced from T1 to T11-T12 and the concavity was measured with a common ruler. The data corresponding to the distances were analyzed by specific software, using Excel and a formula ("unpublished data") developed in the UCB Biomechanics Laboratory by Dr. Gustavo de A. Carvalho to convert them into degrees.

After the initial evaluations, the research was developed at RPMON-DF, once a week, in the morning, in a 30-minute-sessions. At the begging and the end of each session the abduction was assessed by the aduction maneuver (ABPC, 1998). Then, the child got in touch with the horse establishing an affective bond.

With a ramp the child was helped to ride by a team composed by a horse handler, also responsible for the horse's walk and two assistants who would give physical support, observe the child posture and conduct the therapy. This team remained the same until the end of the study.

During the riding activities to equilibrium improvement, rectification of the trunk, among others were made in the same way to all the patients.

By the end of 10 sessions, it was made a new evaluation with the flexicurve, following the same steps initially used to observe probable alterations post-intervention.

The SPSS (Statistical Package for the Social Siences) 10.0 for Windows was used to the statistical analysis and a "t" paired test to verify if there was significant difference in the kyphosis angle after hippotherapy.

RESULTS

The descriptive statistical analysis showed that five children were female and three were male with ages varying from 31 to 72 months, (58,25, +13,7).

Table 1 illustrates the kyphosis angles before and after the treatment. The values corresponding to mean and standard deviation were respectively 31,62 e + 4,51 prehippotherapy and 26,55 e + 5,58 post-hippotherapy. It can also be seen an improvement of the kyphotic posture in six cases and in only two the kyphotic angle increased. It is important to consider the fact that this two children were older and had the most elevated tonus.

	Sample	Pre-hippotherapy (degrees)	Post-hippotherapy (degrees)
	А	21,12	31,17
	В	34,37	24,98
	С	35,52	20,84
	D	30,48	17,04
	E	33,85	28,88
	F	32,83	27,13
	G	33,07	27,81
	Н	31,77	34,56
Mean		31,62	26,55
Standard deviation		4,51	5,58

Table 1: Kyphosis Degrees pre- and post-hippotherapy.

Author

A relevant characteristic of the sample was that three patients had independent gait, one could walk with assistive aids and four were completely dependent for locomotion. Another important characteristic was the slightly increased muscular tone of one of the children, as well as his severe cognitive impairment and suspicious autism.

The information obtained with the aduction maneuver showed an increase of the angle in six cases what leads to suppose there was an improvement of the tonus. It is important to show that in only two cases the angle before the first session agreed with the angle before the last one.

The analyse showed a significant difference in reducing the kyphosis' angle [t(7) = 2,95; p=0,021], pointing an improvement after hippotherapy. To this study it was adopted a 95% (pd″0,05) confidence interval.

DISCUSSION

Hippotherapy not only provides physical, cognitive, emotional and social stimulation, but also teaches and develops skills not learned with the conventional treatment. Despite its unusual nature, its bases are on the current theories of motor development and control, establishing neurophysiologic treatment principles. The continuous exposure to the environment changes, the horse's movements and the multiple sensorial, motor, cognitive and limbic stimulations facilitates the development of new forms of movement that are not learned with tradicional treatment techniques (BENDA, MCGIBBON e GRANT, 2003). The initial outcomes suggest that hippotherapy may influence the posture of CP children. For diplegic children this gain can be observed according to the information in table 1, that indicates a reduction at kyphosis angles post-intervention. It confirms other findings from different authors who documented a significant improve in the posture of CP children after hippotherapy (BERTOTI, 1988; BENDA, MCGIBBON e GRANT, 2003). Sit with abducted legs, besides varied stimuli applied to the pelvis and the whole body improve balance reactions, trunk postural control, pelvis activation and joints, contributing to tonus normalization. All these factors collaborate to postural improvement (KUCZIÑSKI e S£ONKA, 1999).

However, it is interesting to notice that two patients had an increase in the kyphosis angle. It was found that in addition to the higher tonus, they were also the oldest in the group. Nevertheless, it is not possible to trace a direct relation between these findings and the worsening of the kyphosis, since the sample was too small and there are some other factors that may explain this result better. In fact, this worsening may be due to intraobserver reliability and the child's psycosocial conditions at the evaluation moment.

In relation to the measurements made by the assessor, it is known that regardless the good reproducibility of flexicurve's method (THOMPSON and EALES, 1994), "the individuals globality may lead to several compensations, which can generate low intra-assessor co-relation" (SPOLAOR e MARQUES, 1999). Moreover, the emotional state of the child in the assessment's day may have influenced the tonus in non favorable way, once it is not only one aspect of physical and muscular action, but reflects the psychological and emotional aspects (LERMONTOV, 2004), harming a precise evaluation. In fact, hypertonia can alter the posture, making the child try new alternatives to stabilize in a certain position, because the hypertonic muscles tend to shortening, making even more difficult the action of antagonist muscles in postural correction. (ANDE-BRASIL, 2004). However, it doesn't mean there were no other postural gains, since riding a horse requires coordination and balance (LERMONTOV, 2004), requirements not tested for not being direct part of the study.

It was also observed values of aduction maneuver which were measured before and after each session, but the most relevant measurements to this paper were the angles obtained before the first and the last session. The data suggest, based on the increase of the abduction angle, six children had an improvement in tonus and in the kyphosis, what may be explained due to the cadenced horse's movement together with the animal's body heat promotes relaxation, specially in lower members, contributing to lessen spasticity (LERMONTOV, 2004). It interesting to show that the manouver's angles didn't remain teh same from one session to the other, although it was always incremented after each day of intervention.

In short, although the outcomes may be favorable, they are not conclusive. The sample was too small, imposing a certain limit to the research and making impossible a precise statistical analysis. Besides this, each child presents different deficiencies and functional limitations what difficults to join a homogeneous group. It should also be considered that hippotherapy benefits are multifactorial, so it is hard to discern the absolute cause-effect relation (BENDA, MCGIBBON e GRANT, 2003).

CONCLUSION

Despite the results obtained in the present article constitute an initial step, it has great value, once in the current stage there are few researches relating hippotherapy and spastic diplegia and most of them only bring qualitative data. In addition, the analysis of gains in the sitting

position is very relevant, since it is the position children spent most of their time due to daily activities.

According to the objective stated at first, hippotherapy showed to be an alternative that added to conventional treatment, presented good results in relation to the sit posture of diplegic children, moreover, there was a great acceptance by the kids and their parents who reported improvements on posture and balance.

It is suggested other studies related to the subject with a bigger sample, so that the statistical analysis will be deeper and more conclusive. It would be important the inclusion of a control group, because hippotherapy is not the only treatment patients go through, that is, they usually adopt other therapeutic activities. Finally, it would be interesting the evaluation of other variables, for example, balance, motor coordination, body image, body schema, cognition, speech and language, how long the effects can be maintained e improvements on daily activities.

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THERAPEUTIC RIDING: ITS ENABLING ACTION FOR SOCIAL INTERACTION AMONG THE AUTISTIC POPULATION

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ANTECEDENTS

According to a national survey, the percentage of disabled people is of 7.6% of the total population, of this percentage an 8% has mental limitations related to social relations, and the male population among these is higher. The statistics available in this area in Uruguay are under-registered and there are not any specific investigations on each type of disability.

OUR WORK

The following investigation takes part in the Equestrian Rehabilitation Center "Sin Límites" ("No Limitations") in the city of Montevideo, Uruguay. The study was done with students from AUPPAI (Asociación Uruguaya de Padres de Personas con Autismo Infantil = Uruguayan Association of Parents of Individuals with Infantile Autism), which is an entity who has very low resources. They were able to start Therapeutic Riding in the year 2005.

The team in charge of the Project is composed by: Lydia Lercari (Riding Therapist, Director of the center), Verónica Rivero (Psychologist), Verónica Coimil (Psychologist) and Valeria Lercari (Sociologist and Therapeutic Riding Instructor); plus the help provided by other instructors and volunteers.

THEORETICAL FRAMEWORK

For the development of this work the team uses a certain concept of the autistic spectrum, one in which it is considered as the group of disorders that interfere in the socio-emotional interactions and in the understanding of the world in general. This ample notion provides us with a dynamic view of the subject and enables us to develop new working strategies. Among the autistic spectrum we have included the general development disorders found in the DSMIV as well as the amplified autistic phenotype, children schizophrenia, semantic-pragmatic disorder, obsessive-compulsive disorders, DAMP (Deficits in Attention, Motor control and Perception), the non verbal learning disorder, the socio-emotional disorder, and the development multisystemic disorder.

The most important symptom of this disorder is social deficiency; Wing states that children with this deficiency are characterized by a deficit in three areas: social recognition, social communication and social understanding, and in each of these areas there is a wide range of grades of severity in the deficiency.

Therapeutic Riding is a type of therapy which uses the horse as a means for the bio-psychosocio rehabilitation of persons affected by a disability no matter its origin. The horse is a co-therapist that provides three fundamental characteristics:

- body heat
- rhythmical impulses
- three-dimensional locomotion pattern

Each of these characteristics, which form the basis of the three fundamental principles of therapeutic riding, has physiotherapeutic and psychotherapeutic effects.

The area of Therapeutic Riding used with autistic people is the one called therapeutic mount; the same has proved to be an important supplement for the management of behaviour and learning problems in autistic children and young people.

The bond with the horses gains great importance in the work with autistic people because it develops socio-integrational qualities such as: analogous communication (non verbal), tolerance, patience and a sense of responsibility.

The interaction with the horse from the first contact and prior care, until de moment of mounting, develops new forms of communication, socialization, self-confidence and self-esteem.

We worked from an eclectic posture which allowed us to integrate a working methodology according to the needs of each person, using different tools. The theoretical framework that guides our work is behaviourism in which the stimulus presented to the person who does the Therapeutic Riding sessions is continuously reinforced with the motivation generated by the horse causing - depending on the characteristics of each person - a change in the quality of its responses. The work on the conduct of such people allows us not only to generate the learning of new conducts, but also to reinforce those types of behaviour the person already has and which are adequate.

The sensorial and motor stimulation is a very important aspect because in many cases such experiences are used as a basis on which to work on motivated conducts, whether it is by reinforcing them or annulling them.

THERAPEUTIC STRATEGIES:

As a form of approach our therapy includes experiences in the areas of communication, socialization and organization. These experiences are introduced based on a specific routine, when this is acquired small changes are introduced. We work with behavioural modification techniques, sensorial-motor integration, therapeutic volting, among others.

The most importance is given to the area of social interaction. We believe that the working possibilities Therapeutic Riding provides in this area gives the possibility to generate strategies in which it is possible to enable the positive experiences which reinforce the bond with the "other", diminishing those frustrating situations which emphasize the lack of social interaction.

The work is done from the strengths which each person and the horse have, strategically and specifically promoting the work on the lacks which are the basis of the autistic spectrum. The therapeutic object is centred in boosting initiative and communication skills, in order to reach a greater social interaction. Simultaneously, specific strategies are generated according to the needs of each patient.

In this way, initiative, communication, interaction and visual-attention skills, plus the ability to answer specific orders are boosted.

Among this general basis the team raises the possibility of working with a different strategy for each of its students. In it, the chosen exercises and didactic materials vary in the sensorial stimulus, psychomotor stimulus or affection receptors. Using these materials, different types of therapeutic games are developed which tend to increase eye-hand coordination, attention and communication.

Technicians are constantly rethinking therapeutic strategies, evaluating for each subject the stated aims, which allow a follow-up that generates a constant learning both for the student and the technician.

OUR OBJECTIVE

The present study's general objective is to evaluate Therapeutic Riding's enabling action on the social interaction among the autistic population.

To achieve such aim we will focus on two specific objectives:

- 1) Evaluation of Therapeutic Riding's enabling action in the ability of initiative.
- 2) Evaluation of Therapeutic Riding's enabling action in communication.

STUDY METHODOLOGY

We worked with a population of twelve students in the autistic spectrum, from both sexes and between the ages of six and thirty-three which attend the institution.

Therapeutic Riding sessions are held once a week and last half an hour for each student, the work is done in groups of three riders. Each session is subdivided in three stages which are evaluated separately:

- Prior activity: it consists of a first instance in which there occurs the approach to the horse and the working equipment.
- Activity on the horse: from the moment of mounting to the one of dismounting.
- End of the activity: descent, thanks to the horse and goodbye.

The therapeutic process will be evaluated through:

- Cards designed by the working team which include the following items: communication (verbal and non verbal language), initiative, social interaction, attention and habit organization. These cards will be used trimesterely in the Centre by the members of the work team.

- Attendance and observation of the development of the session cards for each student. They must be filled in at the end of each session by the instructors and the psychologists who took part in it.
- Evaluation forms developed by the work team in which the aforementioned items are evaluated, to be used trimesterely in AUPPAI by the psychologist and the teacher.
- Periodical meetings with the student's parents to evaluate the changes (if any) in the communication and interaction areas in the period of time they have been practicing the activities.

DATA PRESENTATION

Next, the results obtained will be presented through graphs which allow seeing the process done by these students.

The variables used are the initiative ability, communication and social interaction. Verbal language, attention and habit organization will not be taken into account in this study.

Initiative ability

Definition: It is observed in the way the subject responds to orders in an active way, whether it is by anticipating the answer or by finding a new strategy according to its capacities as a form of response.

Communication - Non-verbal communication

Definition: All those expressions the subject can manifest through gestures, whether it be by eye contact, tactile contact or body movement which appear as a response to certain stimuli.

Social Interaction

Definition: The demonstration of the ways in which the subject interacts with the environment. The same may be done with the horse, with the work team and/or activity peers.

Evaluation: they are evaluated in the three aforementioned stages:

- A) prior activity
- B) activity on the horse
- C) end of the activity

Grading / Scale:

N/A: Not assessable – those aspects that because of the characteristics of the subject do not achieve the necessary category.

I: Insufficient – the subject does not comply with the proposal after three indications and assisted demonstrations.

A: Acceptable – the subject complies with the proposal after three indications and demonstration of the proposal with assistance.

G: Good – the subject complies with the proposal after two indications and assisted demonstrations.

VG: Very Good – the subject complies with the proposal after one indication and assisted demonstration.

Throughout the process there are some students which have not been able to be evaluated, whether it because of their absence, the inappropriate clothing and/or for not having integrated a function which enables the activity. Considering that they are aspects which are beyond the team's responsibility and the activity per se they will not be presented in the graphs which follow.

Initiative Ability



Activity on the horse



End of the activity



Results of Specific Objective 1

The work team started off considering the initiative ability as the modality in which the subject responds to orders in an active way, whether it is by anticipating the response or by finding new strategies according to its possibilities.

The presentation of these graphs allows us to clearly visualize through a period of three trimesters the increase there was in this capacity during the period of time in which the work was done using Therapeutic Riding as a conducting axis.

In the three stages proposed for the evaluation the result in the quality of such ability always tended to improve.

Another important aspect is that after three months in which the students did not attend the activity they were evaluated and what was observed was the fact that those modalities of response anticipation as well as the search of new strategies were held through time.

Communication - Non verbal language



Prior Activity

Activity on the horse







Results of Specific Objective 2

The work team started off considering that non verbal language covers all those expressions that the subject may manifest through gestures whether it is eye contact, tactile contact, and body movement as a response or at the beginning of the stimulus. Nervous tics and stereotypes are not included in this category.

The presentation of these graphs allows us to clearly visualize along the three trimesters the increase in this ability throughout the period of time in which the work was done using Therapeutic Riding as a conducting axis of the therapeutic strategy.

In the three stages set for the evaluation the result always tended to be of improvement in the quality of such ability, positively reinforcing it or enabling its appearance.

It is important to mention that one of the first keys taught to use in the communication both with the horse and the work team, is the pound on the hand of the instructor who asks to "pass".

This ability increased in our riders day by day, depending on the different modalities and particularities of each one. Some were not able to express "pass" in the appropriate way, but they did express the idea through their disorganized movements and eye contact when they were on top.

Social Interaction



Prior Activity

Activity on the horse



End of the activity



Results of General Objective

The work team started off considering social interaction as those manifestations in which the subject interacts with the environment.

Even though this definition may seem vague what we were looking for were categories to be able to have the same criteria and to know, when the time for evaluation came, that all of us instructors understood the same thing.

Anyway, the choice in the initiative ability and non verbal language as central criteria in our specific objectives show that they are necessary to be able to interact socially.

This interacting capacity increased and the team saw it at the moment of the start of the stimulus (initiative ability) through body movements, eye contact (non verbal language) as well as when answering the proposed activities.

This increase was not done only in the bond with the horse, but it was also extended to the persons with who the person worked and in many cases to their families.

If we consider the fact that the central symptom of our population was centered on social deficiency, and we obtained as a result an increase in the quality of the social interaction, we are able to say that in these cases Therapeutic Riding acted as an enabling action of the interaction ability.

OUR REFLECTIONS

The team achieved its objective, which was to evaluate the enabling action of Therapeutic Riding in social interaction. Said evaluation allows us to state that Therapeutic Riding has been fundamental in the work with our population. We believe this because of the notorious quality increase which appeared in all the evaluated skills, which enabled to show how it was worked on the three aspects put forward by Wing: social recognition, social communication and social comprehension, with a very positive result.

In this *learning how to learn* presented in this work, the team was learning from its changes and trying to think and rethink its practices.

Why did Therapeutic Riding have an enabling action on the social interaction of our students? The team believes that:

- The rhythmical impulses transmitted by the horse allow to "get in touch" from the beginning of the activity in such a "subtle", such a primitive way, that it would be impossible for a human being to do it at such level. We believe that this type of intimate contact is not experienced by the students as disorganizing and aggressive, and therefore enables the establishment of the bond.
- 2) Through this kind of activity the rider experiences a pleasant sensation, due to the context and to the Therapeutic Riding principle, generating in this way a diminishment of the frustrations, which in turn diminish the social interaction deficit, enabling them as gratifying experiences.
- 3) As the conducts emitted by autistic people do not evolve into operating conducts appropriate to their chronological age, it is necessary to naturalize its reinforcements for the **conduct** to turn **intentional**. In this sense, the **motivation** which promotes the activity in the students determines the possibility to enable the acquisition of the same.

All in all, in the present study we have proved that for the studied cases, Therapeutic Riding enabled social interaction in people among the autistic spectrum because of the possibilities the generation and/or promotion of a bond provide - motivating the acquisition of new conducts. These enabled the creation of new strategies (initiative) and the work on the deficit in communication (non verbal language).

To round up, the idea is to continue debating, reflecting and systematizing our professional practice with the objective of building new tools which provide benefits for the population with which we chose to work.

EQUESTRIAN PSYCHOMOTOR ACTIVITY

Author: Aldo Lauhirat - Argentina

The object of this work is to articulate the neuromotor stimuly that the horse gives, with the psychomotor activity in transference clinic, in the child construction.

Method for one side and tactics and strategies in neuromotor actity of the subject, on the other.

There are no doubts about the potencial of the horse and the horsemanship as generetors of sensory stimiuli.

Our intencion is to integrate, to put into practice, the psychomotor activity in transference clinic, the third evolutionary cut of the psychomotor activity whith our method of work .

DANIELE METHOD.

Since its beginings in 1900 with Jenry Wallon ,the psychomtor activity has registered three evolucionary cuts, each of them with its own special characteristics by helping the wishfull subject to mix with his own ,moving body, gestures and position in front of the Others eyes ., mother , father, terapist.

In this way, he, she, starts building a concept of body – imagine body- simbolic body.

This tactics and strategies undertand the subjects abilities and disabilities, and build bonds throught since in a transferencial plot.

The aim of this work is that the child with pathologies can recognice herself/ himself and exists as a subject where their body image is at stake.



Aparticular way of approaching the patient, where two fields meet, the organic and the subjectivity, and when they overlap the meeting point emerges, that is psychomotor activity.

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These two fields are represented by two spheres that seem to be fighting to impose there own weight. In the sphere the organic field, anatomy, physiology, pathology, and kinetic rehabilitacion, in the sphere of the subject ive field, history, games, and representations. On one side , the empiric science and the techniques derived from them, that cannot exceed there own limits which are those of weighting and measuring. The organic field, which the modern word seems to give more importance.

On the other side, the subject field. It is here where we cannot stop asking ourselves, what sort of device could measure the enthusiasm or the tediousness, the interest or the apathy, the enjoyment r the indifference, and the countless amount of imponderables that the human-horse-nature-relationship produces.

Going round this meeting point with face- up , some basic differences, specialy between the concept of ecuestrian rehabilitacion and the term restoration (used by the O.M.S).

In classic rehabilitation a movement betters the privious one, the object is to normalize the tone. In our work the movement is a gesture given to be seen by the Other and we cannot say that this gesture is better than the for ner.

The same happens with our reading of the tone transformed in position in the structure of the wish

full subject.It is for this reason that we have adopt the denomination of Ecuestrian Psychomotor Activity which implies a modification to the classic concept of rehabilitacion, no longer being just a reachable level of function or states as the only evolutionary parameter in the direction of the treatment and in the relation the transference occupies the central stage.

The psychomotor activity in transference clinic analyces the difficulty of representing the body and movement, spacen and time relationships, where the psychomotor sympton is in vieu not as the sign of damage but as the result of an epiphenomenon. In this clinic the transference comes down specifically to the particular demands of the child and their family who place the terapist, who represent –that Other- in a position of power in which he or she cannt choose to be or not, from there it is bestowed the capacity to produce what is at stake in this clinical space, crossed by the psychoanalysis It is there where the corporeal

Knowledge is represented, related more. So to the corporeal scheme, what happens and how to cure it than to the fisical image.

There is no psychomotor clinic, without a body, without a glance and without movements of a subject, one works between the pulse of the body and the body itself between the pulse of the movement and the operation of the motor function.

The presence of neuromotor pathologies implies the usage of kinetic methods and ever through the symptons and signs are visible in each pathology. The way they are located in the subject respond to the historic singulary in the structure of the subject.

Upon birth the child brings a basic neuromotor equipment from the physical sense of term which will fulfil the motor function in the psychological order, we speak of naturity and growth, which have a temporal legality. In order that these functions assemble they must throught the field of the Other, mother, father, so that they can form their own image, the function as their child, and the operation of the motor function.

This operation of the motor function places pleasure in the movement, it pulsates, it requires that the Other stimulate its and eroticizes it, it moves for the pleasure of meeting and parting. This pulsating scripture of movement crossed by language, begins to build the unconscious image of the body and the motor project.

There must be a print left that bonds with a history that the child construct and build which bonds childhoodness to childhood. The realization is of the order of the event, a singular experiance, established for example in posture conquests. These are not just a mechanical act , they are part of a scene that the Other builds where he exists as asubject. The posture is conquered in meeting and seperations from the field of the Other, it is a psychomotor realization, it is spacial, temporary, the rythm varies from one posture to the other, the axis of the body will be the pole of integration of the kinetic sensations which will outline the body/s orientation.

Until the child can build its own self – image the sensations are fragmented, there is no " I "from the imaginary functions the subject will be able to apprppiate reality, otherwise the muscle will be kept out of speech.

The clinical field implies to introduce itself in diverse and new problems.

- The stucture of the body, the language and the Other
- Image and corporal scheme.
- The stucture of the psychomotor symptons
- The transference in the psychomotor activity clinic.
- The direction of the cure.
- The psychomotor in autism and psychosis.

The Ecuestrian Psychomotor activity raises differences with the practice in the surgery. The presence of a living being in the scene. What is their role in the scene? ¿Can it become an important character for those children who we are unable to reach comunication.

The presence of other operators as support techical .What is their role ,active or pasive.?

Does the transference in horsemanship change the space of power?.Do they place us closer to the knowledge of horsemanship than to the therapeutical .? How can we revert this .'?

The scene is wider , and in contact with nature the risks are also greater, but the scenes are limited in this area.

The scenes and sportaneity of the creations are limited for security reasons.

The length of the therapy time is no longer limited to those that the neuromotor activity demands, they are longer.

As regards the different epistemologic steps

If we use the first cut, we will remain anchared in the threedimentional character of the gait, control manoeuvres of muscle tone, we will have a passive child, a place usually covered by the child. An active therapist and a horse in a role of " therapist ".

If we place ourselves in the second cut which is concentrated in the emotional and affective tone, we will be doing motherlyness the child will became trapped in the affection and maternal pleasure from someone who shouldn^{¬¬}t exercise this role .

The Ecuestrian practice will only be significant if what is produced by the horse , facilitated by the threedimentional character of the gait, facilitating the operation of the function in the absence of the body lasts and is reproduced on land.

Hipotherapy Association of Olavarria

EQUESTRIAN REHABILITATION PROFUNDNDLY MULTIDEFICIENT CHILD THE PRINCE

Author: Maria Nieto Arana - Argentina

This testimonial store of high quality made by a team of journali without our participation allows us to analize the Equestrian Rehabilitation from a different view.

Leonel's story, a profoundly multideficient child, affected in motor, his sensory, cognitive and communicative areas, in his mother's words.

Andrea Frohlich defines such children as having reached only the neuropostural development of that of a six month old child, aproximately.

I take that time considering that it is the moment in which the mother-child relationship begins to separate, since his/her system of percepcions, movementes and communicatin has differed his/her in such a way that his/her environment can received an active form , not depending on the exclusive mediation of a relating adult person.

A story that begins hours before his birth, where an erroneous medical action unleased a true drama. It crudely relates the degree of defenselessness that these childrens'families suffer in developing countries, the limitations in health care services, and the lack of income to pay for expensive tretments.

The chance to find a distinct proposal, The Equestrian Rehabilitation.

The demand of the family and their expectations about it . His relationship with the horse.

Their surprice in Leonel's evolution. A humanist focus of the technique, a comparison with other alternative therapies .He covered and under went since his birth, shows us from her view point the therapies 'limits, and the comparison with the Equestrian Rehabilitaton.

Her story shows us how the multideficiency isn't the juxtaposition of a person's disorders, but that its specificity results from interrelation of the disorders within themselves and even more, fundamentally in what position this interrelation of disorders and abnormalities places the child, and his family respect to him.

Where the treatment is not the addition of different treatments according to the afected area, but a specific and individual treatment that takes into account his disabillity, his suffering and his family altogether.

Over the testimonial material, The Hipotherapy Association of Olavarria put together archive imagies that allow us to observe Leonel working in the Hipotherapy Programme with the "Daniele Method", and his tone posture evolution during a period of four years of work with monotherapy.

Paralely to this tactics and strategys are used in the Psychomotor Activity in Transference Clinic with Leonel who is now a fifteen-year –old child unable to use verbal speech, but who can communicate just by gestures with the purpose of giving reason to the corporal sensations produced by the ´´threedimentional character of the gait´´ in such a way that he can build representations and achieve a psychomotor development.-

THE UTILIZATION OF TECHINICS IN BRONCHIC DESOBSTRUCTION IN PATIENTS WITH NEUROMOTOR DISFUNCTION IN THE RIDING THERAPY

Author: Mylena Medeiros - Brazil

It is consense that the riding therapy throught the tridimensional deslocation of the gravitary center of the horse adjusted to the knight gives the simulation of the neuromotor muscleesqueletic, sensorial, cardiorespiratory, digestary systems and following them psycoemotional. Even thought, to improved all of these benefits it is necessary a therapeutic intervention according to the specific objectives.

A big part of the patients having neuromotor disfunction presents or presented late development, from the alterations on the muscular tonus and strength, upright and balance, also by the presence of abnormal movements patterns, that bring postural distortions. The incompetence to maintain the postural and movements quality generates mechanical alterations of the torax trunk and abdomen that contributes to the appearing of ventilatory disturbance and pulmonary affections.

The present study presents the use of techinics on the bronchic desobstruction, reorganizing the respiratory muscular synergism, improving a better pulmonary ventilationand bronchic hygiene. The techinics bring the understanding the interation of the person with the environment and with himself. When we favor the cardio respiratory system, we promote a higher tissular oxygenation that generates higher performance in your learning as a whole.

The study used the pulmonary ausculption as a method of mensuration before and after the therapeutic session and mensuration of the respiratory frequency.

The sample is with five patients with different ages between three and nine years old.

The results sign improvement after therapeutic intervention and loss of pulmonary repetitions.

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THE THERAPEUTIC RIDING AS AN ADDITIONAL TREATMENT ON THE ACQUISITION OF A BEST TRUNK ALIGNMENT IN CP CARRIER TYPE MODERATED SPASTIC QUADRIPLEGIA USING THE ICF AS BASE TO THE EVALUATION AND ELABORATION OF ACTIVITIES - CASE STUDY

Author: Manuela Vieira - Brazil Co-author: Mariana Maia

This case study has as a proposal to verify the importance of the utilization of the riding therapy on the rehabilitation of one a four years old patient carrier of Cerebral Palsy (CP) kind moderated spastic quadriplegia, taking into consideration that this type of treatment benefits both parts motor and psycho-social.

The patient was escorted from one

appraisal based on the International Classification of Functionality, Incapacity and Health (ICF) of World Health Organization (WHO) and adapted to children with CP, were, trough one pre-determinate function were analyzed and quantified the earn on the patient's neuromotor and muscle-skeletal systems, using riding therapy as one support treatment.

The main focus of the treatment was the trunk, aiming a best biomechanical alignment, activation and control, taking into consideration that the child with CP owns an insufficient mechanism of postural reaction

for presenting late sensor motor development, being indispensable the movements control and the trunk stability.

The ICF has as a general objective to provide a unified and standardized language as a system of description of the health and related states to them. This classification registers the functional state of the carrying person of deficiency.

The version of ICF divides the system of classification in five components: the corporal function and the structure of the body become related with deficiency; the social activity and social participation portray the incapacity; and the ambient factors register the impact on the incapacity, quantifying the positive and negative aspects.

By being a classification it is used as a model for the evaluation of the incapacity in many contexts and in the rehabilitation that will allow the person to be periodically reevaluated. It fits to stand out that it does not measure illnesses, but measure the capacities of the individual. On the basis of the ICF, the CP can present varied consequences. In that relates to the function of organs and systems, generally intervenes in the functioning of the neuromotor system and muscle-skeletal, and with this level the characteristics associates to this pathology, include riots of tono, position and voluntary movement of the muscle. Beyond the servomotor and muscle skeletal deficiencies, the CP can result in incapacities, in other words, limitations in the performance of functional activities.

This evaluation was based on data collection, clinical observations, functional capability, higher capacity function, important functional limitation and global deficiency (related to organ or system). It is important to emphasize that on the original version of ICF all of the systems are considerate and in this work were analyzed only the neuromotor and muscle-skeletal systems of the patient.

Moreover, an analysis of the patient on the back of the horse was made, observing the level of autonomy capacity of the same, as much physical point of view as emotional.

Based on observation and analysis of the data obtained was established one symbolic function that was to drive a truck using hula-hoop as steering wheel, and from it were observed the primary and secondary deficiencies of the child, being traced a treatment plan based on the movements components necessary to the realization of the proposed function, trough playful activities.

The patient was followed by a team of four physiotherapists and one assistant-guide, always with two assistant-laterals. With accompaniment multidiscipline external of hydrotherapy and conventional physiotherapy.

The horse chosen was a pure English blood, low frequency, what decreases the proprioceptive stimulus that is transmitted to the patient, being more adequate to spastic child. It is also a long animal,

what facilitates the hip abduction on the mount moment.

The treatment was realized on the Núcleo de Equoterapia Country Side in Piratininga, Niterói, RJ, on a period of six months. On the total 24 sessions of 30 minutes each.

In each session were measured the time of the adequate function and it was repeated in all session to comparative ends, what turned possible to obtain best comparison of the trunk alignment in different times.

To measure the gains obtained we chronometer the times that the patient realized the function proposed in the adequate posture using. These times had been chronometered from 9^a session where the patient could stay per 5 seconds in the position adjusted with support of the therapist in thoracic box. For that we used the measurement table below:

Number of	Aid given	Time of
the attendance	for the	accomplishment
session	therapist.	of the function
9°	In thoracic box	5 second
10°	In thoracic box	6,5 second
11°	In thoracic box	7 second
12°	In thoracic box	10 second
13°	In the elbows	12 second
14°	In the elbows	12,2 second
15°	In the elbows	13,5 second

Measurement's table at the times of adequate accomplishment of function

Continua...

Conclusão.

Number of	Aid given	Time of
the attendance	for the	accomplishment
session	therapist.	of the function
16°	In the elbows	14 second
17°	In the elbows	15 second
17°	Without aid	5 second
18°	In the elbows	15,3 second
18°	Without aid	4 second
19°	In the elbows	15 second
19°	Without aid	5 second
20°	In the elbows	17 second
20°	Without aid	5,77 second
21°	Stern	13,4 second
21°	Without aid	4,98 second
22°	Stern	15,6 second
22°	Without aid	5,1 second
23°	Stern	15,3 second
23°	Without aid	5,8 second
24°	Stern	15,4 second
24°	Without aid	5,7 second

* In the counting of the times the posture readjustments made by the patient during the execution of the task had been taken in consideration.

CONCLUSION

The present research disclosed, through the analysis of the gotten data and the reported of that patient carries through attendance of rehabilitation has at least four years, that the riding therapy was a facilitator agent for the acquisition of one better biomechanics alignment, activation and control of trunk in the seated position, providing, however, more good performance of the patient. Stimulated in this way the self-confidence, the improvement of the interpersonal relationship, and the quality of the patient's life in question. It fits to point out that the use of the ICF as base for the evaluation and elaboration of the activities was of basic importance as for the functional accompaniment of the patient.

A PHYSIOTHERAPIST + A HORSE ≠ HIPPOTHERAPY? A DISCUSSION OF ASPECTS CONTRIBUTING TO THE QUALITY OF HIPPOTHERAPY

Author: Dr Dorothée Debuse - United Kingdom

ABSTRACT

The first author recently conducted a UK and German study of the effects of hippotherapy from the perspective of people with cerebral palsy. The mixed-method design included

a questionnaire survey of physiotherapists working in hippotherapy, to investigate what they observed as the effects of hippotherapy on people with cerebral palsy

focus group / individual interviews with people with cerebral palsy, to explore their perspective of the effects of hippotherapy.

Although the same effects were reported by study participants in the UK and in Germany, and by physiotherapists and users of hippotherapy, there was a difference in emphasis. UK physiotherapists and users rated the psychological effects of hippotherapy higher than their German counterparts. The results from the UK and Germany also show that a difference in practice between the two countries results in a difference in the physical effects of hippotherapy as reported by patients and physiotherapists. While the same psychological effects were reported in both countries, there is evidence of greater physical effects in Germany than in the UK.

Based on accepted motor learning principles, this paper will explore possible underlying factors for this difference in effects.

It seems that although the psychological effects of hippotherapy, including the "contact between friends", are a key factor for the effectiveness of hippotherapy, we must not assume that we can choose any horse and let it do the work for us. On the contrary, we need to use horses wisely and take responsibility for providing a high standard of hippotherapy treatment. Only with well-trained horses and well-trained physiotherapists can we achieve the optimum motor learning results that this study demonstrated are possible.

INTRODUCTION

In March 2006 the first author completed a 5½ year study into the effects of hippotherapy (HT) on people with cerebral palsy. The study's philosophical framework was Critical Realism. This is a paradigm that views reality not as absolute, but as context-dependent. It accepts that different experiences of reality can and do exist. For this reason, reality can be investigated from different aspects and sources, to obtain a picture as comprehensive as possible. Critical Realism uses an inductive as well as a deductive approach. It promotes the use of theory to explain phenomena (Bhaskar 1989; Collier 1994; Wainwright 1997).
Figure 1: Diagrammatic representation of **Therapeutic Riding** (Based on a model by Heipertz (1977)):



To help the reader understand this study, here is the definition of HT that this work was based on.

Hippotherapy (Greek *hippos* = horse) is a specialised physiotherapy treatment that makes use of horses' unique three-dimensional movement impulses at walk to facilitate movement responses in patients astride the horse (Strauß 2000). During hippotherapy the patient does nothing to actively influence the movement of the horse; on the contrary, the patient is moved by the horse and responds to the horse's movement. The physiotherapist directs a specially trained horse handler to vary the horse's movement as required, through changes in cadence, stride length and direction.

The use of the term "hippotherapy" (HT) varies in different parts of the world, as does practice. Therefore, it is unwise to assume that HT practised in one part of the world has the same effects as HT practised in another. The UK and Germany were chosen as study locations, due to the first author's easy access to them in terms of geography and language, and due to their differences in history and practice of hippotherapy.

In Germany HT has been practised since the early seventies. It is a distinct area within therapeutic riding, the other specialist areas of which are apparent from Figure 1. The reports of clinicians who participated in my study confirm that the practice of HT is considerably better established and on a much more professional footing in Germany than in the UK. This is not only in terms of intensity of practice and resources available, but also in terms of the payment of physiotherapists for their services.

Overall, 31 users of HT (age 4 to 63) and their parents took part in focus groups and interviews in 5 centres in Germany and 1 centre in the UK. The academic rigour of the study was high.

Physiotherapists' views are likely to be representative of professional opinion in the two countries. A combination of rigorous quality control methods applied to data collection and analysis, as well as participant verification, ensured that it is possible to transfer the findings to people with cerebral palsy who did not participate in the study (Debuse et al. 2005).

An overview of the study structure, methods and objectives is provided in Figure 2.



Figure 2: Overview of the study

KEY FINDINGS

Users' reports of the effects of hippotherapy largely support much current literature on the effects of HT on people with cerebral palsy (Casady and Nichols-Larsen 2004; Haehl et al. 1999; Heine 1997; Künzle 2000; Strauß 1998; 2000; Tauffkirchen 1996; Would 2003). They also confirm physiotherapists' views as established in Phase I of the study. Interestingly, however, users expressed themselves on much more than the key questions, providing important information on the context in which hippotherapy happens. Users and parents also placed greater emphasis on the effects of HT in terms of the ICF domains of activity and participation (WHO 2001). The information users and parents provided generated a model of HT, presented in Figure 3.



Figure 3: User-generated model of hippotherapy (HT)

What made up the categories reported in Figure 3 is explained briefly in Box 1 below. Themes which were raised in Germany only will be marked with an asterisk (*).

Box 1: Key Results

 How is HT perceived? HT is fun HT is experienced as riding, not as physiotherapy HT is more effective than conventional physiotherapy 	 The context in which HT happens A normal environment * Interaction with and appreciation of the horses Users' positive attitude enhances the effects of HT *
 The movement experience Users are very aware, indeed, of the effects of the horse's movement on them * Wheelchair users describe an experience of normal movement on horse back * 	 How are the effects of HT perceived? As "wonderful" and very positive They give users/parents hope Participants' language used conveys strong feeling
 The physical effects of HT A break in HT causes a deterioration in function/ ability HT facilitates conventional physiotherapy Improved standing and walking ability Regulation of muscle tone Improved trunk control and posture Stabilisation of hip subluxation: prevention of surgery * Improvement in upper limb function Pain relief * HT facilitates personal care * HT is a catalyst for motor development: carry- over to function / activities off the horse 	 The psychological effects of HT Sense of achievement Increased self-esteem Self-efficacy and motivation instead of fear-avoidance Evidence of increased participation in "normal" activities Hope

Although similar effects were reported by study participants in the UK and in Germany, and by physiotherapists and users of hippotherapy, there was a difference in emphasis:

- When asked about the three most important effects of hippotherapy on people with cerebral palsy, UK physiotherapists rated psychological effects in first place, together with regulation of muscle tone, while German physiotherapists rated psychological effects in third place after regulation of muscle tone and improved trunk/postural control
- Some physical effects discussed by German users and parents were not reported by users and parents in the UK.
- The same psychological effects of HT were reported in the two countries
- UK users and parents rated the psychological effects of hippotherapy higher than the physical ones.
- In Germany, physiotherapists and users rated the physical effects of HT higher than the psychological effects.

The comparison of the effects of UK and German HT practice was not one of the original aims of this study. However, its results provide clear evidence that, in the face of the same psychological effects, users report greater physical effects of hippotherapy in Germany than in the UK. This was a significant outcome of the study and warranted closer investigation. Therefore, an attempt was made to explain these differences based not only on the data collected in this study, but also on existing literature and on the differences in HT practice in the two countries.

The key to these findings may be found in the exploration of the difference in the schooling level of horses in the two countries. A horse that walks at 100-120 steps per minute will impart 50-60 similar movement stimuli per minute on the person on its back. Bearing in mind that a hippotherapy session lasts in the region of 20 to 30 minutes, this constitutes a unique and intense opportunity for motor learning. While the number of stimuli achieved may be the same, no matter what the schooling level of the horse, the exact quality of the stimuli is likely to vary greatly between poorly and highly schooled horses for two reasons.

- 1) A highly schooled horse allows the physiotherapist to choose a gait (in terms of step length, amplitude and cadence) which is ideally suited to the user's needs. This is impossible with a poorly schooled horse. Also, a well schooled and long-reined horse will produce little variation in its movements except when asked to do so (Fieger 2004; Strauß 2000; Wanzek-Blaul 2004). This is to do with the horse's own fitness and balance, and its ability to carry itself in an efficient posture.
- 2) A horse with a lower level of schooling is not only physically unable to reproduce such uniform and balanced movement; if it is lead from the head rather than long-reined, it is unlikely to be able to work in a good (ergonomic) outline (Fieger 2004; Strauß 2000) and may also slow down and, consequently, be pulled along by the horse handler.

Both of these would result in arbitrary variations in the movement and, therefore, disrupt the uniform repetition of movement. The physiotherapist may well desire an acceleration, deceleration or change of direction to induce centrifugal forces for specific patients at specific moments (which is why it is so important that the horse can execute these movements and respond to commands instantly). However, these changes in the movement are meant to be deliberate and specific to the user's needs, and not the result of inadequate schooling or handling (the use of the word inadequate does not imply incompetence, but rather a level which is not as high as it should be to achieve best possible results). What may add to the challenge in the UK is that in several centres hippotherapy is practised while a regular RDA lesson is going on at the same time. Even with a perfectly schooled and long-reined horse this will affect what is possible in terms of quality of movement in HT.

It is generally accepted that, for it to be optimally successful, rehabilitation has to be specific to a person's needs (see e.g. Carr and Shepherd 1998). It stands to reason that a horse which can deliver subtle differences in quality of movement at the therapist's command and in response to a patient's particular need at any given time is a better "rehabilitation instrument" than one which is able to deliver only a certain type of movement, and which, moreover, will produce unwanted variations in this movement. It appears that in Germany physiotherapists practising hippotherapy are very aware of these issues. In fact, this study saw German hippotherapy emerge as a model of good practice. It should guide and inspire practitioners worldwide.

The results of this very detailed study show that HT has a range of very positive effects on people with cerebral palsy. Psychological effects, including the "contact between friends", greatly enhance its physical effects. However, the results of this study also show that we must not assume that we can choose any horse and let it do the work for us. On the contrary, we need to use horses wisely and take responsibility for providing a high standard of hippotherapy treatment. Only with well-trained horses and highly specialist physiotherapists can we help patients achieve the optimum motor learning out of hippotherapy that this study demonstrated is possible.

A PHYSIOTHERAPIST + A HORSE DEFINITELY ≠ HIPPOTHERAPY!

Figure 4 on the next page will provide a brief summary of the points discussed.

Figure 4: Diagrammatic representation of the question "Does it take HT to achieve the results demonstrated in this study?"



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BUILD SECURE PLACES...LOOK BEYOND BORDERS. THERAPY WITH HORSES IN A PROJECT WITH CHILDREN WITH CANCER

Author: Verena Bittmann - Austria

The organization e motion is in charge of the project. It is a non profit organization supported by a board of overseers and lead by four therapists and a trainer. "E"motion stands for Equus horse und motion as well as emotion, feeling. That means that people and horses move together and use their emotions as the language.

Mag. Roswitha Zink is not able to present the project herself that is why she asked me to do it. I am the president of the organization and will give you my personal insight. Mag. Roswitha Zink could not come to Brazil because she is working on another project with children with cancer. This is very important to her and she sends her regrets that she could not make it but she wishes everybody a productive conference and is looking forward to hearing how it went.

EQUOTHERAPY:

We use a special method and train our horses for three years. The basis is a mixture of "Natural Horsemanship" (you will hear more about that from Reinhard Mantler) and elements of dressage and Centered Riding to build up the horses muscles, make it supple and responsive. They also learn to reflect the feelings of the client. That body language enables the therapist and the client to see the problems from a different perspective. In addition, trained therapy horses start communicating and try to get in contact with the client. Equotherapy horses primarily speak through head and facial expressions, and to a lesser degree, the whole body. Our therapists know this language in detail and use the fact that horses have special skills to read nonverbal body language. You will hear more about it later.

I want to say a few words to the development of the project

A sponsor gave us the idea to start a project with children with cancer. The parent group of "Kinderkrebshilfe" loved that idea and chose some families to try it out. At first doctors and therapists were skeptical but the great success of the Equotherapy convinced them. One thing led to another and now we work closely together with the hospital. There are no costs for our clients because we have sponsors that totally support the whole project.

HOW DOES THE THERAPY WORK:

If we build castles, then we have protection from somebody or something, but with cancer we find an enemy that we cannot defend as easily because it is inside ourselves. For children, the system of black and white, good and bad is confused when they recognize that their own body is ill. Chemotherapy, the hospital, doctors, everything is ambivalent...good and bad. How could I go on? I stare at the ground. Mount! Says the horse. And we walk. And we walk further and further.

It helps and hurts. The loss of "normal" everyday life with family, friends and school is painful and frightening. Where is a secure place to hide? To find and build this place, to help with a confusing world of differences, we started this therapy.

This idea is not new. Studies made at the beginning of 1980 show that animals act as protective factor to recover. The scientist Mr. Corson referred to pets as ,nonverbal communication mediators' and claimed that they offered withdrawn or otherwise isolated individuals, a form of nonthreatening, nonjudgmental, reassuring nonverbal communication and tactile comfort and thus helped to break the vicious circle of loneliness, helplessness and social withdrawal'" (Corson 1980, 107).

Horses do not know anything about cancer. They need clear communication: Yes or no. Our horses help because they are obvious in their communication. They carry us, allow body contact and enable a relationship beyond social criteria.

What is life? I ask. Wait. Whispers the horse. Can you feel that? That is the moment. In which lies the secret of life.

The following pictures will give you an example of our daily therapy routine: In the first one you can see a girl that is happy to have found a pretty flower ("I discovered something..."). This picture also stands for the fun of being curious and for the fun of discovering oneself and the surroundings. Encouraging such joy is an important task of the therapy. By showing the flower to the therapist and the horse the girl can share her joy and gets feedback (I am sharing this with you..."). They look at the flower together. They all have a different perspective of it and exchange their ideas. When we share personal problems they can often bee seen from different perspectives, too ("I see things differently..."). Lastly the girl gives the flower to the horse as a gift and the horse eats it ("That is for you!"). In this case the flower was not a personal problem, still there was a solution. The girl discovered something and the therapist, the horse and the girl worked on a solution together. They discovered, shared, saw things from different perspectives and in the end the girl had a gift for giving. This little story is a metaphor and it shows a small piece of our daily interactions between horse, therapist and client.

Role of the Horse:

A very important statement before we look at the skills horses can help to learn:

"Therapeutic riding or equine-assisted psychotherapy activities including riding and vaulting are destined to coordinate with the overall psychotherapeutic treatment of the patient. The goals include improving self-confidence, social competence, and improving the quality of life, but not specifically learning riding skills (Fitzpatrick & Tebay, 1997, cite Beck 2000, 32).

No emphasis on learning riding skills? That's sometimes hard for both therapist and client. But it is important to be clear on the aims. The horse working in therapy is quite different to the horse on whitch somebody learns to ride properly.

Role of the therapie-horse:

- ...helping with tensing and relaxing the body
- ...reflecting the mood (disposition) of the client
- ...giving motivation for the therapy and the courage to make changes
- ...providing an opportunity to form new skills and try out new ways to express oneself

About the skills of the horse to mirror nonverbal impulses:

It is hard to imagine this fine art of communication. Our "normal" contact with horses did not teach us nor them to be sensitive with each other. We trust that dolphins have such skills, but not horses. The horses we know stand in the backyard of our grandparents or pull carriages through the city. They are dumb and some even think that they are stupid.

For this type of therapy and to get the results we got we had to go on a long journey that questioned our beliefs about horses. We humans had to learn to see things differently, to feel and to allow ourselves to have a relationship of giving and taking with an animal. It is often very hard for us to recognize and openly respect these skills because we always think that we are better then the animals. Only when we acknowledge that horses can read body language better than us, when we offer them a relationship where we listen to their answers and respond to them, we can effectively use the therapeutic possibilities I described.

This work is challenging. First we have to build up the relationship with the horse and then we have to maintain it over the years. Relationships can brake, there are misunderstandings and you always walk the line between demanding too much or too little. This is a daily struggle and the therapists have to take this challenge to be able to support their clients.

An effective therapist ...gives freedom and security ...is an observer. ...is not there, even tough she is there.

There is a lot of literature about the different (Psycho) Therapies and the attitude of the therapists. Therapy with horses is especially demanding for the therapist because they work with different levels of communication and relationship at the same time. Horses do not think and react as complex as we do, they show us the roots of our being and help the situation.

"Sigmund Freud's ideas concerning the origin of neurosis, in infants and young children are essentially similar to animals, insofar as they are ruled by instinctive cravings, excreting, sexuallity and self-preservation. As children mature, their adult characters endeavour to 'tame' or socialize them by instilling fear or guilt when the child acts too impulsively in response to these inner drives. Children, in turn, respond to this external pressure to conform by repressing these urges from consciousness. Mental illness results, or so Freud maintained, when these bottled-up animal drives find no healthy or creative outled in later life, and erupt uncontrollably into consciousness (Serpell 2000, 111).

We all know that Sigmund Freud changes the scientific and therapeutic way people think. Today his theories are part of many therapeutic movements. The therapy with horses can make use of this knowledge in a special way. Mr. Levinson made first steps in this area with dogs in 1969.

"The solution to n is this growing sense of alienation was, according to Levinson, to restore a healing connection with our own, unconscious animal natures by establishing positive relationships with real animals, such as dogs, cats and other pets. He argued that pets represent ,a half way station on the road back to emotional well-being' and that , we need animals as allies to reinforce our inner selves'. In other words, the process of emphathizing with, and relation successfully to, our pets involves tuning into and accepting our own repressed animality" (Levinson 1969 coll. Serpell 2000b, 110).

So there is a connexion between our work as therapists which explains the influence horses have on people in a psychoanalytic way. I can not explain this in detail now, but there is a lot of brilliant literature designed from German Kuratorium of Therapeutic Riding. I am very sorry that it is not translated. Especially important for the development of our method are the works of Carl Klüwer, Anton Kröger, Marianne Gäng who founded the educational use of horses. The scientific and practical work from Dirk Baum, Susanne Kupper Heilmann, Monika Mehlem and Marietta Schulz should be mentioned as important intervisional exchange for the therapeutic values of emotion. You will find the list of literature at the end of the paper. Now you know the people influenced us, so we can go on with the ideas that form the basis of our work.

Our actions are based on respect and appreciation for the personality and privacy of the animals as well as the humans.

Our actions are based on allowing free space within clear borders.

Another important thing is to learn how to look over the walls of our castle. People who suffer from cancer often become egoistic. Suddenly, they are the centre of attention. Small children, adolescent girls and boys have to learn quickly that they are alone in their bodies and responsible for their lives. It is very healthy to know that others have the same problem. Who could better help than a horse? This is a partner that carries us inside and outside the walls of our castle. With a horse, you can ride beyond the borders and around your kingdom. It carries you and makes you free and brave.

Horses do not know anything about cancer. They treat everybody the same. They challenge us and need clear answers that can be loving or assertive. By working with horses, children with cancer learn to take responsibility, develop new skills and stay in contact with others. Therapy process: Introduction phase Motoric phase Dialog phase Verbal Phase

These phases will be explained next in detail. They are part of the whole process and can occur in different orders. A child with little contact to its body but good verbal skills will build the relationship to the horse and the therapist though talking. Others do not know what to say and just move with the horse, first without talking and then they find the right words. A lot of children start with the motoric phase, they wan to try out artistic exercises and feel themselves. The different phases help us with our reflection of the sessions and with setting goals for the therapy. It is important to us to show each child his or her possibilities in each phase. We try to integrate all the phases in every session. Even though the order of the phases can vary, we think that for example good body awareness is necessary for a good dialog. That is why we build one phase after the other.

Introduction phase Horses and humans get to know each other, explore each other and learn to respect each other

Motoric phase Here they start feeling their bodies and develop physical skills.

Dialog phase

The learned physical skills and the body awareness is refined by moving with the horse.

Dialog in this phase also means body language. Asking questions and getting answers without talking. The verbal dialog comes later.

Verbal phase In this phase you use body language and verbal communication.

Here we reflect together and look at things from an outside perspective.

The therapy's goal is to improve the quality of the clients' life though self-confidence and self-determination. We use three basic reflexive conceptions:

- 1. Tension and relaxation
- 2. Carry and be carried
- 3. Freedom / playing games and borders / rules

The antagonistic expressions should remind us to important themes of the therapy. They are our roadmap through the sessions and help us to stay on track. The goal is that our theory guides us trough the process.

I do not want to comment on the following pictures but invite you to let your imagination flow. You will probably be reminded of your work situations using therapy with horses. In conclusion I thank you for your interest. Together we walked through the theories which the therapists of e motion use in their work. I hope that we could initiate emotion and a motion with the horse and share the enthusiasm of Equotherapy.

I let myself fall. You hold me tight.

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THERAPEUTIC MECHANISMS WORKING IN PONY ACTIVITY WITH THERAPEUTIC AIMING

Author: Marie Paule Rapenne - France* Co-author : Anne Marie Toniolo

The children hospitalized in Day Hospital in the Centre Psychothérapique de NANCY (France) profit from a pony activity to therapeutic aiming since 1981. This activity, introduced into this service by a psychomotrician, is addressed to relational and physical problem childs. Rider, psychologist and working with horses in therapy, we were interested as of its beginning with this support, at the time "original", to enrich our practice, in collaboration with professionals of the world of health and equestrian world. The children observed are accomodated full or part-time in the units where all aims at supporting their integration. Some of them present only some autistic symptoms which enable them to be accepted within group of children of the same age. Others on the other hand present personality disorders particularly invalidating such of the major autistic disorders, which block their social integration and the rhythm of the traditional trainings. They are in such a state of fold reinforced by many stereotypies, that it is impossible for them to enter the relational plays.

However, the pony will prove to be a therapeutic tool with the action exceeding the simple relaxation and the appeasing. This Therapy Assisted by Animal (TAA) makes it possible to the therapist to leave the symptoms of the child, his history and its evolution to set up an organization of meetings favourable with the development of these clinical elements and with their installation. For example, a child particularly agitated will see himself proposing a meeting with an "old" pony, calms, which will enable him nevertheless to practise all the paces, in full safety. Another distressed child will be able to see himself proposing to take care of a pony, to walk it in halter or to hold another child with the step, in order not to increase his initial tension and to develop his competences.

The choice of the pony to be allotted to a child is not pain-killer either: cut, dynamism, age, competences of the pony will be adapted to the stoutness of the child, with the intensity of his anguishes, its feeling of existence and competence or depression and "incompetence". It is as a clinician psychologist and a "ridertherapist" that we analyze these various elements and that we set up the meetings, in same dynamics as the whole of the members of the teams of child psychiatrist, from which the children come. The observations made on the units supplement our observations and allow, during the discussions with their family, to constitute the framework of the care and its orientations.

IMMUTABILITY NEEDED

The autistic child is often confronted with a need for immutability of his environment. The environment produces stimulations likely to distress it, either because it does not manage to select them, or because they reach it in an excessive way. It will seek to be protected by

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covering his ears or while being folded up on him even in order to find itself again in a waking state, where perceptions will be known and limited for him. This reactivity's excess in the world which surrounds it weakens it and can lead it to express its suffering by cries, aggressive gestures even self aggressive gestures, which the people around him always do not understand. This extreme child sensitivity is sometimes associated a surprising "A-reactivity", it does not answer when it is called, does not seem to hear us, is bitten or is knocked without seeming to feel of pain. These elements testify to a particular relation to its body and psychic envelope. The first seems seemingly correct while the second does not develop obviously correctly. Anzieu speaks about the "Skin-Ego" or "Self-Skin" (1974) which allows the accession "Thinking-Ego", the body envelope causing information for the Person.

By Skin-Ego, it indicates elements of body surface which will affect the Ego's construction, on the internal constitution of the subject (=psychic). It makes it possible to imagine a representation of this virtual body surface, made up of two layers: an external layer, round towards outside and decreasing the excitations coming from the external world, as well as a internal layer, thin, sensitive, managing the elements coming from the interior of the person; for him, the external layer is related to the feeling of "force", while the internal layer connects elements about the "sense". Relations between these two layers will make from this whole a unit, a "membrane", reactive, or on the contrary fixed and hermetic.

It is possible to understand which mechanisms can be put in action when one uses an animal as mediator, in addition to the word and to the traditional tools (pencils, objects, toys, ground.). In order to potentiate the effects of the children's contacts with our own Skin-Ego, we use the existence of a virtual dynamic space present in pony (Barre and colleagues, ethologists, 1987), also representing its receptivity in the external world to work on the intersection of these "envelopes" and to take part in the construction of the child's envelope. With Renee de Lubersac (2000), authors brought closer this concept of Skin-Ego, and what a child tests during a therapeutic activity with a pony or a horse which carries it and prints him movements such as rockings, rolling.

CONFRONTATION OF TWO WORLDS

When some autistic children penetrate in a new space, they need to skirt the walls during a long moment before being able to be interested in what is in the room center. Space between the two elements of Anzieu (external layer and internal layer) (1994) seems to dilate so much so that only the internal layer remains close to the human being while the external layer extends at the point to adhere to the walls, the person seeming to become a deformed "object". When he runs along the walls, the child brings the external layer closer to the internal layer; he reconstitutes himself in a way less distressing and more balanced, and can thus take again his explorations or practices.

When an autistic child enters a stable, this environment evokes nothing for him, individually, but it will act on him in several ways: the first impact structuring of space will be noises and smells. Space is organized according to the displacements and the animals' life. It is divided into parts whose limits are materialized by straight lines and many angles. Space all in "roundnesses" or "curves" of the Person cannot fall under these lines ruptures. It is while entering a box, while approaching curved spaces, that the child will echo his own external surface and will be able to thus reconstitute himself again.

At the time of this stage, spaces surrounding the human participants (membrane of the child and the adult) will meet virtual dynamic spaces of the horses. Barre (1987) and its team lengthily described virtual spaces which surround the horses and which enable them to be individuals with whole share. When the human is "against" the animal, it is "in" the virtual dynamic space of the horse, which the horse accepts thanks to its domestication. At the same time, even if the child does not wish it, the noise of the horses in the boxes or the smell of their litters will enter his organization by the hearing and olfactory channels which cannot be "closed". This intrusion will open in him other not stimulated internal channels. The child is then like a Person covered with several superimposed perforated coats, which let pass only from compartmental information, and which, often impermeable, does not allow the touch feeling n. This superposition of "torn coats" covers the "Person" who cannot develop correctly, for lack of access to "outside": one is then close to an "Ego-shellfish" of Tustin (1989).

The horses smell is not a familiar smell. It excites some reception zones which are not usually stimulated. This olfactory signature will allow the inscription of this place (stable) like a singular space, that the child will seek either to find, or to flee according to the intensity of the stimulus. These elements will be added to the visual then tactile contact with the animals. This first stage is very important for the solidification of the external envelope and its cohesion with the internal membrane. It will support the following stages: the approach and the touch of the animal then possibly riding it or harnessing.

When the child is ON the pony, in fact internal mechanisms will be mobilized: the helicoid movements of the horse back will be felt as the movements of a " wave " which is rolled up and reproduced always the same diagram of displacement: the child will see stimulated zones intern particularly deep, which are not felt in normal time (we move like bipeds). Very gradually, the child will become aware of these felt, without inevitably locating them precisely, and will express through his behaviour, a certain search for these pleasant feelings (cries, basin movements, agitation when the pony stops.). Dynamics comes then from the interior and will make "resonance" with the child membrane, sometimes finding a unexpected passage towards outside: the child then will seek to use us as "tools" (= that we make again move the animal so that the feelings return) and will be able "to look at us", us to touch and "to stimulate us" so that "the former state" returns: we know the pleasure which in us the animal displacement can get and we lead the child to feel this interior pleasure, different from the stereotyped handling which authorizes only one "alleviating" feeling to him.

To be walking on a horse can deaden the rider by regular "rolling" that it transmits to him and by the rhythmical noise of the shoes on the ground. Some bring closer these feelings the elements developed by Winnicott on the concepts of "carrying", also manufacturer of personality (holding and handling). The internal movement starts complementary movements, also interns, who stimulate inactive zones in these children; the child gradually will become aware of these zones and their "knowledge", felt but not "named", will start the search of the maintenance of these felt and their development. The body envelope thus will be constituted "by the interior", by "resonance" of felt interns, associated the external words, which try to create bond between the interior and the outside of this same envelope. The "knowledge" of a pleasant feeling associated the environment "stable and animals carrying" leads the autistic child to seek these feelings again, just as it reproduces movements of the type "stereotypies". Thus, this new knowledge, internal, enriches cognitive stock by the child, and the environment takes a new dimension for him since it can draw some from the pleasant feelings and new bonds with the people who surround it. Those are not only "tools" (prolongation of oneself to reach something), but something of different from oneself: one reaches individuation.

PROGRESSIVE INDIVIDUALIZATION

To require of an autistic child to brush or prepare a pony in a traditional way (grooming with 3 brushes then cure foot) is obviously excessive at the beginning of a work with therapeutic aiming since an action carried out using its body is not possible immediately. Initially, it is necessary to take the hand of the child and to brush "with" him. The hand of the therapist becomes a prolongation of his. Its own hand gradually "will separate". The external impulses resulting from the therapist (to touch, pressure, movements) will stimulate his skin and its receptivity and will lead it to not feel its hand like a share of him even and as something which is connected to no perception center and action: by "separating us" from him, we reactivate signals of contact and distance which it did not activate for a long time. In the same way, the touch of the animal, even fugacious, will stimulate it on the level of the matters differentiation (skin, hairs). Repetition and the slow integration of these different felt will enable him to restore (or to establish) a new "code" of differentiation "humanhuman" and "human-animal". Before even being able to put the child on the pony, these "archaic" elements will give the opportunity to the child to constitute itself, in a certain way, but also already to hear words. Just as the infant is bathed in the mother's words, the child also "will be bathed" in a vocabulary and words, which, because they are not usual, can have a different impact. One can clarify this interpretation by referring to the development of the language in the young child. Its brain is able at the beginning to develop all the languages types. With the passing days, the daily exposure to only one of them reduces flexibility and possibilities. For the autistic child, the entry of the stable sounds will cause "intrinsically" a stimulation of not developed zones and not stimulated zones before. Associating words of accompanying, these sounds enter a memory which will be activated and gradually developed. The smells take part in the same way in the "Ego-Skin" structuring by activating receivers not used usually.

The association of words and gestures is particularly important. Here, the therapeutic act makes it possible the child to feel, then to associate terms these affects and finally to anticipate and recognize these affects independently of its entourage. This act is transformed into true training of feelings and words association which the child is unaware of before and who prevented it from being in an adapted relation to others. Thus, this young autistic child who refuses since many meetings to be put on the pony and which poses a brush on the back of a black and white pony diverts an object of his function (brushing) to make of it a tool of knowledge of texture and solidity of the mass which is in front of him. The word of the therapist goes beyond a work on the affects. The sphere not only emotional but also cognitive is stimulated. Even autistic, the child can develop this interior desire of "knowing", to even use it him or to retransmit it.

CONCLUSION

In spite of his progress, the autistic child will not be located spontaneously in same dynamics as the other children. However, this therapeutic step, which is pressed on the animal, is a

complementary door which is possible to open. The child can divide what he feels. It enables him to advance in the social and "human" exchanges, even if these exchanges or these discoveries concern a very archaic register, as to carry to the mouth, to feel, taste, bite and so on. The therapist wish is to lead the child to widen his discovery's field, to make it pass from a "primitive" tactile discovery, to tactile internal discoveries, which by "resonance" will encourage it to discover some more and more in this environment.

As we said, the entry in the stable and displacements near the animal exert "pressures" on the level of the external envelope. Some children particularly "insensitive" with the environment will be able to never abstract themselves from the felt field. They will not be able to reach elements of a cognitive nature. Nevertheless, the therapist's objectives will consist throughout their assumption of responsibility, to work these felt, these feelings and these different affect, these rhythms related to each phase of the activity. Its work will continue with mount a horse, at the time which the internal feelings will become more intense and prevalent perhaps, so that they will make "resonance" towards their internal membrane and will finish, at one unexpected time, by stimulating it.

We can conclude by establishing that the principal therapeutic mechanisms concerned in the pony activity to therapeutic aiming can be distinguished in a reduction from dilation from space inter layers from the "membrane", a resonance of the olfactory and hearing elements on the internal membrane, a resonance of the movements generated by the displacement of the animal inside the body: stimulation of the internal layer, an external cohesion of the layers and intern to constitute a "Ego-Skin" which becomes functional and gives access to the individuation of the person.

Key Words: autism, child, TAA (therapy assisted by animal), Ego-Skin, Resonance, Pony activity with therapeutic aiming

Mots clés : Enfant, Autisme, TAA (Thérapie Assistée par l'Animal), Moi peau, Résonance, Poney à Visée Thérapeutique

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SCHOOLING AND MAINTAINING HORSES IN THE THERAPEUTIC PROGRAM

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A therapeutic, recreational or sport program is only as good as the horses and ponies that are used. It is up to the management committee to realise the importance of supporting the training and maintenance of the horses. Horses are living creatures and like humans they do not stay constant in their weight, muscle tone or fitness without correct exercise and feeding.

It is not acceptable to say that either paid or volunteer workers do not have the time to train the horses. It is not an option. It is vital and a necessary consideration when planning timetables. Centres that have specific training times for their horses find that they stay sounder and contented when they are regularly schooled. The riders are able to do far more independent riding than on unschooled horses.

THERE ARE TWO ASPECTS:

- The training of the horse
- The fitness and muscle development and maintenance

They are equally important and can be incorporated into the same training sessions.

New horses need to be acclimatized to riders with disabilities. They then need to be trained for the general program. After they are confident and obedience they can be trained to individual riders.

There is much debate about the outline that horses should work in. If the horse is to be confident in the program, and therefore safe for our riders, it needs to be in an outline that is not causing it discomfort. If the horse is allowed to be ridden in an 'upside-down' outline it will acquire a sore back. Horses come in all shapes, sizes and ages and the outline needs to be considered for each horse individually.

Horses and volunteers come to the programs from a variety of backgrounds, experiences and training. Our riders vary greatly in size, ability and ambition. There are too many variables to make hard and fast rules for training. There needs to be both a general training program and individual training plans for each horse.

The ideal horse is obedient, free moving, constant in its outline, light in the hand and soft in its back muscles. It will be able to interpret the aids of the riders or handlers. It will be well muscled over its back so that it does not become sore with unbalanced or asymmetrical riders. This is the aim. Without an aim you will certainly not achieve results.

Training the volunteers is an ongoing exercise as new ones join the program and the existing ones develop better skills.

There is always debate about whether a horse should have one trainer or be able to adapt to different people. Personally I believe that the initial trainer should work with the horse until its training is established. However, if there is a clash of personalities change the trainer.

Side leading has become my favorite training method for therapeutic horses. I have found that many volunteers with some horse knowledge can pick up good skills quite quickly. By working the horses from the ground they are not being ridden and having extra strain on their backs. Horses learn to go forward well and in a 'round' outline. When the horses are trained in a group situation it is fun and can be competitive for the handlers. It is an ideal learning environment for the beginner handlers as they can work with the experiences horses and also learn effective methods from the more experienced trainer who will be working with the inexperienced or difficult horses. Many handlers would never to able to ride a horse 'on the bit' but they can enjoy the feel of a horse working 'with' them when leading correctly.

People can learn useful handling skills that they can then use with their own horses. Volunteers who are not suitable for riding horses can still feel involved with the training and fitness work.

The theory of leading horses correctly is the same as when riding them. They must:

- Go forward to one aid
- Keep going at the required tempo and rhythm
- Stop to a light aid
- Turn to a light aid
- Go comfortably in whatever outline they are being asked to go in

When teaching a horse a new aid, for instance preparing it for a paraplegic rider who has to use two whips instead of legs, use the new aid first and then follow it up with the old aid. Keep repeating new aid then old aid until the horse interprets the new aid as similar to the old aid. Repeat the new aid only a couple of times and if this is successful the horse has just learned another way of doing something. It does not matter how long a horse takes to learn a new aid. What is important is that the learning has taken place correctly.

So many of our riders use different turning aids. When initially training a horse for the program teach it the different ways – opening rein, turning rein as used in dressage, neck reining with left hand and neck reining with right hand. When using volunteers or instructors in a ridden training session, ride on a square. Once the horses have learned the different turning aids see if the horses can turn to a different aid in each corner.

There are different kinds of leading that the horse should be familiar with. The main aspect is that the horse keeps itself going forward in whatever outline is asked for. It can be lead from:

- Level with the head when there is a side helper behind
- At the shoulder when there is only one person on that side
- · Level with the rider's shoulder when teaching independent riding skills

There are also different outlines. The horse may be:

- Free to go with its nose poking
- Be in a round and low outline
- Be in a 'working' outline
- Be in a collected outline

When being worked from the ground in a round outline the reins can be:

- Over the neck with the handlers hands in a position for riding on top of the withers
- Over the neck with the handlers hands under the horse's head

When schooling ponies it very effective to have the arm closest to the horse over its back at the wither area. The outside rein can be used effectively to control the pace and outline.

Training can be done in a group situation. This is fun for the horse handlers and is easy for the head trainer to organize. The less experienced handlers can learn by watching others. Horses and handlers of different standards can all be working together. It is fun to have little competitions, such as leading the horse through a 3 loop serpentine showing changes of flexion and bend. It is a great motivator for the handlers, and they enjoy developing their skills and feeling a horse going correctly.

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IN THE BEGINNING, THERE WAS ATTACHMENT

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1: ATTACHMENT

The theory of attachment finds its origin in animal ethology. In 1935, K.LORENZ started to observe the phenomenon of the" print" which is an innate behaviour, irreversible, which occurs from the birth of the infant. The infant follows the first moving object they perceive, whatever this object may be; but it generally is adequate and is represented by the mother. In mammals olfaction comes into play first. The mother licks her young still impregnate with her smell of the amniotic liquid and thus she can recognize it formally.

It is an impulse and behaviour with reciprocal reinforcement.

The foal quickly understands that its feet can find support on the ground and that it can move itself by pushing with the posterior legs and steering the front.

The exploration of the living place starts as movements shapes keeping the mother as the central landmark. The foal moves initially in a close radius. Thus are born its first locomotor actions of balancing and orientation

It is BOWLBY (1958-1980) made the tie between animal and human attachment and creates a new psychoanalytical theory. According to him, the human attachment and emotional tie rest innate aptitudes which show themselves when the mother requests them.

- 2: The theory of the attachment and therapy with the horse
 - a) The attachment theory

The attachment theory is not reserved to children from 0 to 3 years. It concerns everyone because it intervenes throughout life.

«Attachment goes from the cradle to the tomb" John Bowlby

Attachment is an innate programming system (it is a fundamental need like that eating or sleeping), which comes the baby towards his attachment figure then towards his secondary attachment figure.

The attachment figure is any person who engages in a social, durable and animated interaction and who answers the child's signals. That's why this person generally is the mother.





At first, genetically programmed, attachment is fixed and enriched by social. Attachment is based on searching behaviours for proximity of attachment figure, especially in distress or alarm situations.

Active behaviours: to approach, follow, cling. They lead the child towards attachment figure. (AF)

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The most typical behaviour: the behaviours aversive: to shout, cry. They bring" A F "to the children.

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Signalling behaviours: vocalizations and smile which bring "A F" towards the children for a positive interaction.

Restored proximity with the infant each time he needs it, confirms his idea that it's "A F" is available for him and that he merits it. This proximity, then, this confidence in the availability of the mother, will enable him to feel safe and therefore he needn't activate his attachment system.

This deactivation enables the activation of his exploration system of the environment.



From his base of safety, the child can be interested, for instance, in toys and when he will be older,, to move away physically. At the slightest warning, the child turns comes back near his "AF "who, from base of safety, becomes a haven of safety.

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At the time of a request for care, emanating from the family or the patient himself, there is situation of alarm or distress which brings this family or this patient to be consulted.

The therapist, receiving their suffering, takes part on the settlement of the base of safety which will favour therapeutic alliance.

Representing a base of safety as a therapist enables patients to recollect the painful aspects of their life or express their current psychic.

Being a base of safety means is being reliable, attentive, empathic, kind (in the two meaning.....with the 2 directions of the term), in order to favour the process of attachment and unlocking of the exploration system, as we have just seen these 2 systems are closely tied.



In horse therapy, we propose various relational situations which can cause stress or alarm which can reactivate attachment system, from horse's presence, which is often unusual animal in the close environment of the patient.

Therapist $\rightarrow \rightarrow \rightarrow \rightarrow$ Patient

Horse 77 لالا

Our therapeutic framework and our way of conducting the patient in his discovery of the other are of primary importance.

↗ reliable

We must be sufficiently

- ➤ consistent to became a base of safety,
- \searrow responsive
- ↘ sensitive

Showing by our availability that the patient merits to be listened to and helped. This base of safety acquired, the patient can activate his exploration system, allowing himself to make various relational experiments, against the horse, surrounding world...

According to pathologies and patients' needs, the therapist and the horse accompanies or solicits the patient in his discoveries. According to the very last studies on the attachment, the profile of the fathers who, more often than the mothers, move, go with the child, support him and help him in his exploration of the world.

Whereas with the mothers, the child leaves the base and comes back, the fathers accompany him (this does not exist with the horse):



"The father enters the psychism of the child, directly by the sensory channels of communication in the same way as the mother. He's subject to the same biological laws "Boris Cyrulnick

In horse therapy, we also enable patients to live bodily experiments which are accompanied by emotions. We take them into account to restitute them verbally to the patients and to give meaning to his actual experiences. That's what attachment figure(AF) do who are the most significant source to interpret children and give a signification to emotion of the child, who cannot metabolize them yet (function alpha, **BION 's concept)**.

c) The basic competences:

AINSWORTH (1973-1979) studied qualities of the attachment and situations which involve a secure or insecure attachment. In France **H.MONTAGNER** studied the various attachments and behaviours which are attached to them. He defines the basic competences as a new tool which enables to analyze the original organization and the interactions which result from this.

We work with children who suffer heavy handicaps: sensorial, physics or and mental. Their handicaps mean an early relational dysfunction. The suffering and the rupture are significant. Horse therapy proposes new meeting place for the children and the parents when they take part in the therapy. This place enables multisensorial experiments.



1. Constant visual attention

This is an essential base to the settlement and the development of several functions.

The" eye to eye" makes it possible to settle in a bath of sound, vocal, linguistic production, activates the cognitive processes

The child's joint visual attention involves mother's look

Visual exploration supports a plural attachment (child, relative).

The differentiated reading of the emotions and affects carried out by the look and the face enable adjustment of the emotions between the various partners.

2. The dash to interaction

Through close or distant bodily contact, the child reacts by behaviours which induce reactions on behalf of the other partners. The perceived emotions and affects, mobilize every one and interpretations or representations support the emotional agreement.

These moments of bodily contact with the horse help to live again the early interactions in more satisfactory situations. The matter is a common creation and research. Then an agreement is possible between the child and the therapist or the present relative.(**STERN**).

3. relationship behaviours

These are all the behaviours perceived as appropriate to behaviour of the other: smiles, jubilations, caresses, pointed fingers, grasping of the body, embraces.

Horse therapy is a space very propitious to experiment of these behaviours. The horse is often in the middle of the demonstrations of affections. These behaviours carry social interactions and restore a mutual confidence.

4. The structured and targeted gesture organization

This is grasping and prehension of objects. It enables the gesture organization with the adaptation of tone. We find it in the bodily care of the horse and in the introduction of play activities invented by the patient. This enables him to become aware of its capacity of action.



5. The imitation

The direct imitation, then postponed one, involves motor schemas. The care given to the horses, work in freedom or mounting are moments when the acts of the partners can occur in mirror. If the isopraxy sets off an unconscious imitation, le therapist can use it as help to the imitation.

CONCLUSION

Meeting after meetings, interactions are tied, an agreement between the patient – the horse – the therapist or the relative is carried out allowing possibility reassurance of a secure attachment and a bond. The communication restored in a search for mutual comprehension. That's why the therapist must let the motor initiative to the patient. The benevolent attitude of the therapist will contribute to the spontaneous expression and the authenticity of each one. Therapeutic space felt as bases of safety will lower the separation anxiety level.

What are the different elements which can decrease the separation anxiety?

Psychic mechanisms in therapy are studied by a lot of authors. Neurosciences contribute to answer to this question. Indeed, a substance has been spotted as biologically active in parentality and securness functions: ocytocin. It starts up recompense circuit and it is released when chid is physically in contact with his mother (Pierrehumbert). Its function has been underlined in relaxation treatment too, as being central in all stimulations of the others hormones or neurotransmitters (Kersting Uvnas-Moberg). We can put forward the hypothesis that in a bodily touch, in a satisfactory affect attunement, the recompense circuit is activated. Then action inhibition could be attenuated and would help the patient to fulfil himself.



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THERAPY WITH HORSE FOR CHILDREN WITH MULTIPLE DISABILITIES

Autor: Laurent Bailly - France*

DEFINITION OF MULTIPLE DISABILITIES

"People with multiple disabilities are affected by numerous interactional factors that combine impaired motor function with severe or profound mental impairment, resulting in extreme restriction of their autonomy and of their capacity for perception, self-expression and forming relationships."

AETIOLOGY OF MULTIPLE DISABILITIES

These children suffered from serious, early brain damage that caused multiple neurological disorders and severe obstacles to psychological development. The damage may have occurred during, or as a result of:

- Cerebral maturation
- Organogenesis
- Early post-natal complications
- Childbirth
- Genetics
- Fertilisation



The specific disadvantages of children with multiple disabilities

Numerous disorders occur as a result of multiple disabilities, and these in turn may generate weaknesses, as well as obstacles to the following types of development:

- Mental
- Psychological
- Motor
- Communication
- Physiological
- Cognitive
- Social



Obstacles to mental development

Lack of overall motor autonomy

- ✤ Inability to have motor and spatial experiences
- ✤ Failure to appropriate space
 - ⇒ Impossibility of structuring the mental system

Obstacles to psychological development

- inability to grasp objects and use tools
- ✤ Inability to develop the movements related to one's own basic needs
 - ⇒ Maintaining the status and identity of newborns

Obstacles to motor development

Corporal immobility

- ✤ Muscular and tendinous retraction
- ✤ Decline in spaticity
- ♥ Physical posture unsuitable for appropriating one's environment
 ⇒ Posture of mental withdrawal

Obstacles to communication development

Neurological disturbances and after-effects

- b Deterioration of the phonatory system (physical and mental)
- \clubsuit Disturbed expressiveness
- ✤ Impaired feedback
 - ⇒ Decline or disappearance of interactions

Obstacles to physiological development

Impairment of natural functions

- ✤ Inadequate swallowing
- $\$ Non-absorption
- Digestive disorders
- $\$ Incontinence
- ♦ Dehydration, undernutrition
 - \Rightarrow Fragility, vulnerability, rickets...

Obstacles to cognitive development

Undeveloped or underdeveloped mental faculties

- + Psychological immaturity
- + Failure to appropriate one's environment
- + Lack of interactions
- + Physiological vulnerability
- = Severe obstacles to the acquisition of knowledge

Obstacles to social development

In the light of all the weaknesses and impairments previously mentioned, normal social contact is unlikely.

And yet social contact is at the root of the development of all other aspects of a person. We should bear in mind that as social beings, people build their own personalities in the context of their relationships with others.

The self-reinforcing vicious circle

Physiological impairments



Social impairments

How multidisciplinary teams respond

Because of the wide range of impairments observed, multidisciplinary teams set out to respond to different sets of problems by combining their expertise.

Each specialist, working in his or her own field, makes relevant suggestions for care and support.

A large number of services and codes of practice are therefore required.

Each of these targets a specific area but always in liaison with a multidisciplinary approach. It is vital to take account of the child as a whole rather than reducing him or her to a set of problems for which each specialist has particular expertise (and therefore specific solutions).

Here too, however, we have to combat the danger of reinforcing and thereby worsening the initial problem:

"Through their relations with others and with the world in general, children with multiple disabilities are liable to be regarded as **patients** rather than **people**."

List of responses provided

- 1. Equipment
- 2. Balneotherapy
- 3. Psychomotricity
- 4. Speech therapy
- 5. Ergonomic adaptation
- ... and...

Therapy with horse for children with multiple disabilities

Therapy with horse for children with multiple disabilities is no more a panacea than any other type of therapy.

However, it does offer some specific advantages which we want to tell you about here.

Therapy with horse helps children leave behind for a while the constraints of a wheelchair or other equipment and encourages **bodily involvement**: a new view of their boundaries and body image.

The horse has a friendly nature and feels the need to communicate, but that does not make it intrusive, like a dog for example. The horse is looking for a respectful relationship, one in which **interactions** take place "at the correct distance".

Handling the body of a child with multiple disabilities, and the need for safety, implies an over-involvement that may feel suffocating. On a horse, above and at a distance from the therapist, a child finds his or her **personal space**.

In therapy with horse, children are **actors** in their own movements, handling rather than being handled. Instead of leading, the therapist follows.

Like riding a tricycle, horse therapy also encourages lateralisation.

In terms of posture, sitting on a horse gives children greater **flexibility** of the adductor muscles, eases retraction, makes it easier to **sit up straight** and reduces athetosic movements. The posture also helps improve digestion, which is often disturbed in these children.

Sitting with the therapist, back against stomach, is reminiscent of the safety of a mother's womb, helping children to **relax**.

On a psycho-affective level, this encourages **openness** to others and, on a physiological level, muscular relaxation.

Propped up by a therapist, children adopt a posture of greater openness to their surroundings, start seeking vestibular balance, **anticipate movement** and become more aware of their bodies occupying space.

Finding relative **freedom** of movement again, the children seek and perceive sensorimotor experiences related to their own needs.

The **pleasure** children experience leads them to seek it again. Motivated, they straighten up, they move... they have **wishes**.

To try to break the vicious circle

Pleasure Wishes Action		Digestion Absorption
<hr/>	Physiological impairments	ъ́р
Â		? }
Mental impairments Personal space Freedom ⇐ û	s monto	Motor impairments <i>Flexibility</i> & ⇒ Sitting up <i>Involvement</i>
r sychological impai	finients रेन	دognuve impairments ب
Interactions & Openness	Social impairments	Selaxation

CONCLUSION

Interactions Personal space Action Flexibility Sitting up Relaxation Openness Freedom Anticipation of movement Experience Pleasure Wishes Bodily involvement ... and affection

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POSTER

VII INTERNATIONAL CONGRESS OF THERAPEUTIC RIDING

RIDING THERAPY AND SECURITY - TWO SAFE FRIENDS

Author: Jose Miguel Manzo Ruiz - Chile

Objective: To make available for the Spanish speaking therapists, a manual of security, based on experiences lived in the equitation and the riding therapy, focused to the prevention and based on the professional ethics.

Methodology: The practice of riding therapy, means for many people an innovating alternative of treatment and simultaneously a possibility of leaving the routine atmosphere of rehabilitation and going into in a world of communication and social interrelation with friends, being the most important one of these, the horse. So that this friendship grows and simultaneously lets grow the people who search to improve their quality of life, has been made a work of compilation of experiences and knowledge, focused to the professional ethics and the prevention of accidents in the riding therapy.

The riding therapy, is a therapeutic modality that has the purpose of obtaining physical, psychological or social benefits in people with special necessities. Working with risk, means to put in danger the integrity of the patients, therefore, this activity without the corresponding security cannot be conceived.

This manual is a compilation of the author, based in experience of twenty-six years of work, gathering particular experiences in the handling of horses and eight years of continuous experience in riding therapy projects. Everything that is mention is known by lived experiences or direct transmission of others.

The responsibility of the content in the subjects that are exposed, is obligation of the riding therapy instructor and in general goes directed to guide those who projects in conforming an multidisciplinary team of riding therapy, as equitation professionals.

The content of this poster is a part of the manual. The subjects that in opinion of the author have greater relevance will appear.

1. THERAPISTS, ASSISTANT THERAPISTS AND VOLUNTEERS WHO LOVE HORSES AND DO NOT HAVE FEAR.

The components of a multidisciplinary team of riding therapy, must have important conditions to make this activity. In addition to their spirit for service and philanthropical vocation, their love for the horses, must be a necessary feeling in the execution of riding therapies. Ideally the ones who are dedicated to do this must feel that they are working in their hobby, that they are making the task that they love to carry out and in addition, their contact with the patients and the horses must be for them an activity that stimulates and causes happiness.

There must not have fear to the horse, but precaution and respect; the fear is insecurity and in this activity is a word that is not allowed. A therapist with fear cannot work doing this and is a problem for the rest, that surely will be retained in his eagerness to advance in the personal growth of the patient. **(photo1)**

2. APPROPIATED PLACES

The appropriated place for therapy, will generally depend on weather conditions of the geographic area where this is executed., commonly it will be a club or riding center, that assimilates the therapy to its activities. Ideally it will have to have a covered arena, rectangle or yard and land routes.

THE ARENA:

The arena with roof is a closed place, with a rectangular form of 20 60 Xs mts. approximately, where you generally work when the weather conditions make difficult to work outdoors. This place, minimum, will have to have the following conditions:

- -A strong structure
- With the corresponding protection for the weather factors (sun, wind and rain)
- Of soft ground absent of stumbling blocks or sharp elements
- Free of dogs and other animals, at the moment of the therapy
- Of flat surface
- Of dimensions, although nonprescribed, minimum 40 x 20 mts.
- With access to irrigation to avoid the dust in suspension (photo 2)

ARENA OR YARD:

The arena or yard, is a closed place, outdoors, of prescribed measures in case of the arena and without established measures in the case of the yard, that generally is smaller that the previous one.

The conditions of this place are similar to the one of the arena, with the difference that this does not have a roof, thus it will be used when the weather is good. (photo 3)

LAND ROUTE

The route of land is an opened place, but in a certain area, properly delimited with suitable closings (wall or wire fence), of flat and undulated surfaces, with feasible slopes to be mounted by patients; ideally with abundant vegetation and of attractive natural surroundings, so that it stimulates to the therapeutic treatment.

OTHERS PLACES:

There exist other places for work that are used in different equestrian activities and that because of their characteristics can be used for therapy, these must have the necessary safety conditions and among others, we found the following ones.

- Elliptical arena of jump at the hand
- Circular arenas or troyas
- Medialuna Chilena of rodeo
3. THE BRIDLE AND THE REINS TO LEAD.

In order to lead a horse, either with tha hand or mounted, you must always use the bridle well fitted, with bit and the corresponding reins.

Sometimes, due to the confidence that there is with the horses, because of their docility and quietness, usually is used leather handler, to lead the horse in therapy; this is not correct and is a risk, since the horse without control of the bit, is not manageable in case it is frightened or of a simple fall by slip. **(photo 4)**

In the case of riders who lead the horse, it is not correct to use another type of brake that is not the bridle, like a snafle for example, since this, handled by someone who does not have an exact dominion of the necessary tension, can cause a zooming and the unbalance can cause the horse to fall backwards with the rider on its back. (**photos 5 and 6**)

4. REINS TO LEAD AT THE HAND.

In order to lead the horse at the hand, it is recommended to use short reins. They can be of synthetic material (commonly called racksack belt). These must be made since they will not be found in any store; the idea is that hanging from the bridle put in the horse, the reins are at least 20 centimeters far from the ground, avoiding so by a negligence of the horse conductor, these hanging are entangled with the hands of the horse, producing the slip and fall of the animal.(photo 7)

5. FOOTWEAR AND CLOTHES SUITABLE FOR THE THERAPISTS AND THE SUPPORT TEAM.

THE FOOTWEAR:

The footwear of the therapist and the support team (voluntary) must be resistant to horse footsteps. In winter or cold climates closed shoe will be normally worn (boots or half boots), which is ideal as a protection. However, in summer or warm climates, the habitual would be to wear fresh and light footwear like tennis shoes (by no reason is acceptable to wear sandals), if tennis shoes are worn, these will have to be resistant enough to protect the foot from a footstep, considering the pain and the danger of an injury caused by the weight of horse supported in its hands or legs with horseshoes.

Generally and, thus it must be, the ground of the places will be a mixture of sand and shaving, this is a very soft surface, ideal as a safety measure in case of falls, it is very difficult to walk on it, since its softness makes walking very tiring; in addition, if the footwear is not closed, the shaving goes into the shoes or tennis shoes, causing discomfort when walking, for that reason it is recommended to wear soft comfortable half boots. A good experience, is the use of half boots with spatterdashes. **(photo 8)**

CLOTHES;

The clothes must be comfortable and light, and should allow to mount with the corresponding flexibility of movements, or to walk on the surface of the arena and common therapy places.

To avoid the clothes that flutter with wind, colors or shining fabrics, use of scarfs, long coats and all clothes that is not comfortable and flexible, making difficult the freedom of movements. (photos 9 and 10)

6.THE PROCEDURE OF EMERGENCY DISMOUNT.

It is well known that the riding therapy must be absent of risks, by the previous control of place and of the characteristics of the horses that are used, and it is also necessary to anticipate what to do with the patient in case of a stampede. The solution is logical and it does not require of much reasoning, it will have to be almost instinctive, "to dismount the patient ". But, how is this going to be done?:

1st. Previous to the beginning of the session, if the work will be done with a therapist and an assistant therapist, the one who directs the therapy will designate who will take care of the patient in case of emergency; generally it will be the one who is the tallest and with more physical strength of the team. What was mentioned before, logically, totally excludes the conductor of the horse, who will always have to be in charge of the animal and in case of stampede to calm it and to regain the control.

2nd The horse conductor, will have to know clearly that his only direction of advance in case of emergency is direct to the front.

3ro. The one who has the responsibility to dismount the patient will do it perpendicular to the trajectory of the march of the horse, turning and showing his back to the horse, as a protection for the patient.

7. MAKE THE HORSE FART BEFORE MOUNTING

The feeding of the horse is based on vegetables (oats and grass) and it implies that its digestion is slow and the process produces swelling of belly by the gas accumulation. Generally, the horses that belong to equestrian clubs stay in stables and after eating their portion, they remain quiet in that place that prevents them to move to release the energy and the accumulated gases.

According to the previous thing mentioned , it is necessary, as a measurement of physical and mental health of the cattle, that at least once in the day they move or "fart", that is to say, to release them in an open space, so that they can run to relax their muscles and to eliminate the accumulated gases in the intestines; the last thing mentioned receives even greater importance at the time of working in therapy, since it is fundamental that the horses are comfortable. **(photo 11)**

8. THE USE OF MANIKINS OR RAG DOLLS TO TEACH.

The logical thing to teach techniques of work in back riding to therapists or assistants therapists who begin in the riding therapy, by means of courses, is to work with rag dolls, they will never practice with patients as a lesson, as it would be said in an office, the work will be first done as a draft.

Once they dominate the techniques with rag dolls or manikins, it is possible to continue working with the same students, this is to say practice in pairs; only when the teachers and the riding therapy instructors are sure that the students are capable enough to work with patients, the rehabilitation treatment would be projected. (photo 12)

9. PRECAUTION TO INCORPORATE PEOPLE WITH ANTECEDENTS BY SEXUAL CRIMES.

At the time of receiving volunteers or hiring people for the service of maintenance of the horses, it is an obligation to take the precaution to demand references and if there are doubts on the matter, referring to sexual abuse antecedents or crimes of these characteristics, a test of aptitude will be given with an interview of a psychologist. If the doubts persist and the person is already hired, the contract will be finished. To deal with volunteers, it will be thanked their cooperation and it will be explained to them that their presence is no longer necessary, because theris is no space enough to receive other people who wish to be part of this activity.

COMPARATIVE ELECTROMYOGRAPHIC ANALYSIS OF LUMBAR ERECTORS RECRUITMENT AT STAND POSITION AND THERAPEUTIC RIDING POSITIONS

Author: Rebeca de Barros Santos - Brazil Co-authors: Fábio Navarro Cyrillo, Mayari Ticiani Sakakura, Adriana Pagni Perdigão, Camila Torriani

ABSTRACT

Subject: Since the antiquity horse comes being used as an agent to promote health. It has some years, studies aiming compare and understand biomechanic and anatomical similarities between men and horses being carried through. Studying and understanding the physiological aspects of human body allows the applicability of knowledge of rehabilitation, in order to elaborate more effectiveness and individualized programs of treatment to each patient. Inside physical limitations, many times stand position isn't possible of being adopted and kept, making difficult trunk muscle activation in these patients. Thus, position's changes during therapeutic riding session aim activate or inhibit muscle recruitment in diverse ways. Basing in these concepts, surface electromyography comes as a technique of evaluation and quantitative measurement of muscle recruitment, showing in quantitative way neuromuscular stimuli, transmitted from horse to patient seated on its back, are being received for Central Nervous System, and effected through muscle contractions in order to keep the motor control adjustetments. Objective: This study aimed to analyze the muscular recruitment of lumbar erector muscle in healthy subjects, comparing itself muscle recruitment necessary for stand position maintenance, and its relation with the horseback riding positions. *Method:* Nine female healthy subjects, aged 20 to 25 years, were positioned standing and seated frontal and dorsal on the back of the horse. Electromyography surface MIOTEC® and a software Myography with 4 channels, bipolar circle surface silver electrodes were positioned at erector lumbar muscle motor point, according to the technique suggested by Cram et al 1998. Horse was maintained static and with slow steps walking, 20 meters straight. Orthostatic position was analized during 30 seconds.Data were analyzed considering average recruitment in each task (stand on the floor, sitting frontal and dorsal over horseback). Statistic analysis using Wilcoxon Test including a significance level of 0,05 (5%). Results: The results was, comparing the values of muscle recruitment average at stand position, 18,78µV, already seated on the stopped horse, being the subject seated frontal, the average was 20,83µV, and at dorsal position 21,61µV (p=0,206). In the maximum peak of muscle recruitment, values gotten in the stand position, frontal and dorsal on horseback, had been, respectively, 28,56µV, 39,83µV and 43,06µV (p=0,108). Already with the horse walking, the position frontal had a average of $30,00\mu$ V, and dorsal $56,89\mu$ V (p=0,001). For the muscle recruitment peak the values gotten in the positions frontal and dorsal had been, respectively, 57,11µV and 103,11µV (p=0,002). Discussion / Conclusion: Inside rehabilitation process, to inhibit or to facilitate postural standards is one of the bases for the therapeutically success. Seen the varied physical disabilities, we inquire that average similarity does not exist that is considered statistically significant in the muscular recruitment when compared the stand positions and horseback riding, as much how much dorsal frontal, for the peak and average. Thus, we consider that these positions do not have statistical differences, what shows similar muscle activation of the trunk when seated on the back of the horse comparative to the position in foot in the ground. These data indicate that biomechanic relation between the positions exists, what in the clinical applicability offers to therapists conditions to elaborate complementary treatment programs for trunk motor control.We concluded that exists difference between the positions dorsal and frontal, considered statistically significant. Of this form, we can say that in the dorsal position we always have the average greater.

Key words: Hippotherapy, Postural Control, Rehabilitation

INTRODUCTION

As all solids, the human body is subject to the laws of gravity. According to the theorem, "a body is balanced when the vertical from its center of gravity lies on the base of support". When such vertical lies in the center of the base of support, the body is in stable balance. When it displaces from side to side, it is an unstable balance, which should evolve towards stabilization when balance is possible.

The pace of dynamic unbalance will be determined by the length of step and speed of horse walking. By analysing the movement of a horse when walking, at the end of the first minute it will be possible to obtain the number of steps, which may vary from 48 to 70.⁶ The horse walking requires from the rider tonic adjustments to adapt its balance at each movement. Due to the fact that horse walking produces from 1 to 25 movements per second, in 30 minutes of therapy the patient performs from 1800 to 2250 tonic adjustments and 180 oscillations per minute, by means of the vibrations produced by the displacements of the pelvic waist.^{3,4}

Postural tonus adjustment is activated by the constant stimulation of the vestibular system. Once stimulated, this system will control the postural tonus through truk straightening and balance reactions. According to Bobath (1990), balance reactions are automatic responses which are complex and highly integrated to posture and movement changes, designed to recover altered balance.

The vestibular system perceives balance alterations through a structure called semicircular channels. Such channels are disposed in a very peculiar way, being one of them disposed according to a horizontal plan, perceiving spacial variations in this plan, such as head rotation movements. Another semicircular channel is disposed in a frontal plan, perceiving variation in this plan, such as right-left displacements. The third semicircular channel is disposed in the sagital plan, perceiving information in this plan, that is head flexo-extension changes.⁵

This way, aiming to keep the head aligned vertically, at the same time the eyes are aligned horizontally, the proprioceptive system will control these constant losses of center of gravity the horse causes at each change of the base of support. Therefore, patient's trunk balance is worked on through constant unbalances offered by the animal. For this muscular work to be optimized, and for the rehabilitation process to be designed to each specific case, it is vital to carry out an adequate analysis, better qualifying or specifying therapy to the adequate posture in each case.

METHOD

SUBJECTS

Nine subjects were part of this study, aged between 20 and 25 years old, females, with no motor alterations. The selection criteria was based on the general condition of individuals, without posture pain or alterations.

The riding was performed on a 13 year-old mare, with no defined breed, at a 20 X 60 meters, sand-grounded ring.

MATERIAL

For the quantitative result analysis, the *MIOTEC*[®] Surface Electromyography device and the *Myography*[®] software with 4 chanels were used. *Medtrace*[®]circular pre-gel silver chloride electrodes, 2.5cm far from each other, were positioned on the motor spot of the lumbar erector muscles, according to the technique suggested by Cram et al. 1998.

For the riding, therapeutic pad, with no handles nor stirrups was used.

PROCEDURE

The collection started with individuals observed firstly on the ground, to only later ride the horses.

All postures were collected on the same day, the order of collection being, respectively: with the horse at slow walking at which the individual was riding facing forward, always having as reference the horse's head, and back to the horse's head – dorsal. With the horse's fast-steps, the same postures were collected, in a linear 20 meters track. The orhtostatic posture was kept for collection for 30 seconds.

During this period, individuals were all the time supporting themselves without any help from the therapists; however, they had by their side two therapists, for their safety, and a horse leader.

For data collection, a notebook was used, connected to a electromyographic device on a stable but mobile rack, which followed the horse during collections.

For data analysis, it was considered the muscular recruitment average in each task. The study was based on the analysis of data obtained from the electromyographic result; the statistical analysis used was the Wilcoxon Test, which has a significance level of 0,05 (5%).

RESULTS

Initially, we have compared the values for: Standing versus Frontal versus Dorsal.

	Average					
	Frontal	Dorsal	Standing	Frontal	Dorsal	Average
Standing	18,78	20,83	21,61	28,56	39,83	43,06
Middle	15,5	15,5	16,5	26,5	28	28,5
Standard Deviation	11,65	15,80	19,01	15,57	27,16	37,11
Inferior Limit	13,40	13,53	12,83	21,36	27,29	25,91
Superior Limit	24,16	28,13	30,39	35,75	52,38	60,20
p-value		0,206			0,108	



We have noticed there is no statistically significant average difference among "Standing", "Frontal" and "Dorsal", for both Peak and Average. Thus, we have considered that these positions have a statistically similar average result, in the muscular point of view, requiring similar muscular recruitment degrees.

	Ave	erage	Peak	
	Frontal	Dorsal	Frontal	Dorsal
Average	30,00	56,89	57,11	103,11
Middle	25,5	47,5	47	75
Standard Deviation	21,40	44,92	39,20	89,81
Inferior Limit	120,11	36,14	39,00	61,62
Superior Limit	39,89	77,64	75,22	144,60
p-value	0,001		0,00	2



Next, comparing values of Frontal versus Dorsal for the pace. We have concluded that for both Average and Peak, there are statistically significant differences between positions. Consequently, one can say that in Dorsal position the average is always higher.

DISCUSSION

With this study, we have two comparisons with static and dynamic factors in each one. Firstly, the orthostatic posture was analysed, observing how close to the sitting posture on the stopped horse it would be. Through the data obtained, it could be seen that there was no statistically significance in this comparisons, suggesting that the necessary muscular effort for the maintenance of both postures is similar.

Regarding clinical applicability, this data shows that, in cases where it is not possible to adopt the orthostatic posture, the horse will favour the posture strenghtening and control work, since the studied muscles are agonist in this activity and muscular recruitment, according to the electromyographic collection, is correspondent when treating muscular activation.

According to the Compensation Law, "for our body to be balanced, any unbalance must be compensated by an opposite unbalance, of same value and in the same plan".¹ There is no segmentar unbalance without compensation. This way, the contraction opposite to unbalance is the physiological mechanism for fall protection.

Starting with the animal stopped, and starting its movement by the right front leg, the next limb to move will be left rear leg. Therefore, the acceleration direction will always be posteroanterior.

The understanding of the horse pace constant acceleration vetor is applied when observing the comparative results of riding on the Frontal and Dorsal postures. The significant statistics favour Dorsal posture, with a greater muscular recruitment, where we had p-value 0,001.

For a more specific and difficult case, the patient riding the horse backwards will have to keep a much higher muscular activation, even when compared to orthostatism, where the average found was, respectively, 56,89 μ V and 18,78 μ V.

In this study, where postures on horses were compared to orthostatism through electromyography, it can be observed that the backwards posture on the horse requires a greater muscular recruitment, this being the most indicated position for trunk control work.

Through these findings, it is viable for each therapist to apply them in the clinical practice, assessing the patient and the motor objectives to be reached in each conduct.

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ELETROMYOGRAPHIC ANALYSIS OF THE INFLUENCE IN THE MUSCULAR ACTIVITY OF LUMBAR ERECTOR IN THE LATERALITY OF THE TRUNK DURING THE THERAPEUTIC HORSEBACK RIDING

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RESUME

Introduction: The horse provides diverse stimuli neuropsychomotors during the sessions of Therapeutic horseback riding. The process of rehabilitation is going to optimize and direct these stimuli for the best motor utilization for each treated case, coaching and facilitating the Activities of the Daily Life. Recently, measure and verify these coming stimuli of the pace of the horse is an important road for give beneficial therapeutic bases for the trial of general rehabilitation. To eletromyographic becomes a capable instrument of us show as these stimuli are interpreted by the Central Nervous System: The objective of this I study was compare the muscular recruitment in healthy individuals, analyzing the influence of the acceleration during the maintenance of the lateral equilibrium of the trunk, in subjects in the lateral posture about the horse to the pace.

Method: Utilizing device of Surface Eletromyographic of the mark MIOTEC® and software Myography® of 4 channels, utilizing electrodes of chloride of silver pre-congeal of the mark Medtrace®, spaced out 2,5 cm among themselves, positioned us motor points of the muscles lumbar erector, according to the technical one suggested by Believing et al 1998. The speed of the pace of the horse manteve itself slow, in a journey of 20 lineal meters. The facts obtained form analyzed considering on average maxim of recruitment in each task, according to the analysis of the Test of Wilcoxon, with level of significance in 0,05 (5%).

Results: In the right lateral posture in the horse, during the slow pace, the right erector lumbar muscle had a medium recruitment of 97.11 μ V and 128,67 μ of left interest (p=0,044). In left lateral posture, the medium recruitment was of 82,0 μ V and 94,0 μ V for the lumbar erector left (p=0,049). Considering the medium recruitment of the muscle in the same position mounting with the horse stopped, the values were 50,78 μ V for right interest and 62,11 μ V for the left one (p=0,477) in the lateral position right of the horse. In the left lateral posture of the horse, the facts were 42,0 μ V for right interest, and 50,56 μ V for the left lumbar erector (p=0,514).

Argument and conclusion: The muscular recruitment is most important for a possible one applicability of these facts in the creation of therapeutic procedures. Beyond that, is important establish and direct to better posture change sequence, doing the possible most specific session, for each patient. It based in a different posture variations range square that can be performed in the spine of the horse is essential that the therapist have knowledge I specify about the physiological trial involved in the maintenance of those positions. During the trial of rehabilitation inhibit or facilitate standards of posture is the most important concept for the

therapeutic success. I concluded that there is a significant difference in the medium obtained when the patient finds-itself in the right lateral posture and left in the spine of the horse. This asymmetrical recruitment, will guide the therapists for position the patients with lateral detours of the log. Consequently, that suggests that, choose the postures about the spine of the horse during the mount, is essential for the straight recruitment of the muscle, improving the detours of threedimensional posture, and giving like this ways of verify that the statistical facts can benefit the health of the patient I join with the horseback riding.

INTRODUCTION

Three sensory systems exist that relative information to the straighten come, or be, to the position regarding the gravity and to the environment to the around. Those systems are the vestibular system, the body perception and the visual one. The Vestibular System supply the relative information to the position regarding the gravity and to the lineal movement and rotary of the head. The body perception are those associated to the articulation and to the axial muscles, supply information about the movement of the corporal segments of some about the others. Already the visual one supplies information about the position of the body regarding the external environment (Torriani, C. et al, 2005).

The equilibrium is an unconscious reaction against an instability, modulated by the Central Nervous System where the motor systems cerebellar, reticulated and mainly the vestibular system excite the appropriate muscles for the maintenance of the adequate equilibrium (Guyton, 1996). Constantly of the horse the center of gravity of the patient is deflected of the medium line, stimulating the reactions of equilibrium, the vestibular system like this repeatedly is requested stimulating continuously his connections between the semicircle channels where, the ciliar cells and the "otólitos" grasp the oscillations of the endolymph provoked by the movements of the head through the cerebellum, thalamus, cerebral cortex, spinal marrow and peripheral nerves (Ganança et al, 1999).

The pace is to horse march basic in the therapeutical horseback riding, is an rhythmic horse march and rhythmic to four times, and still symmetrical, slow and swivel window. Symmetrical because the variations of the spine regarding the horse are symmetrical, swivel window as a consequence of the movements of the neck and to four times because the members itself he and land successively always in the same order (Stashak, 1994).

Utilizing itself of these beginnings was possible elaborate a study surface eletromyographic of the lumbar erectors, of way it evaluate the acceleration of this musculature with individual persons in lateral posture right and left about the horse to the pace.

METHOD

SUBJECTS

They were part of this study nine subjects, with ages between 20 and 25 years, female sex, without motor alterations. The criterion of enclosure in the study was present good general state, without pains or postural alterations and not athletes, for that had not some kind of interference in the results.

The study was carried out in a mare of 13 years, without definite race. In a ring of 20 X 60 meters, soil of sand.

MATERIALS

For quantiative analisys of result, was utilized device of Surface Eletromyographic of the mark MIOTEC® and software Myography® of 4 channels.

For study was utilized blanker, kind "gallop", without handles or stirrups.

The collection was initiated with the placement of electrodes you will circulate pre-congeal of chloride of silver Medtrace[®], spaced out 2.5cm between them, being positioned in the motor point of the muscles lumbar erector, according to the technical one suggested by Believing et al. 1998. The individual persons were observed first in him soil, so that will get on the horse.

PROCEDURES

All the postures were collected in the same day, being that the order of the collection was, respectively: with the horse to the pace in which the individual person found itself gotten on lateral posture right and left, with maintenance of erect posture required verbally by the adjuster, in a lineal journey of 20 meters.

During this period the subjects itself hold by all the time maintaining itself alone, without aid of any therapist, however close by there were two lateral therapists for the security of the even, and a driver for the horse.

For collection of the facts, was utilized notebook connected to the Eletromyographic device , about a stable, however movable support, that itself hold accompanying lateral the horse during the collections.

For analysis of the facts was considered on average of the muscular recruitment in each task. The study was based in the analysis of the facts obtained in the result of the eletromyographic, the statistical analysis utilized was the Test of Wilcoxon, which I possessed level of value of 0,05 (5%).

RESULTADOS

Through this table was able to compare the lateralitys. The comparisons will give leading in consideration the Left and Right sides.

	Average				Peak			
	D		Е		D		E	
	Right Side	Left Side						
Average	50,78	42,00	62,11	50,56	85,44	72,11	119,56	87,89
Median	48	42	53	52	70	63	74	85
Standart Detour	24,90	26,83	41,72	27,24	48,04	46,39	93,22	40,14
Lower limit	34,51	24,47	34,85	32,76	54,06	41,80	58,65	61,67
Upper Limit	67,05	59,53	89,37	68,35	116,83	102,42	180,46	114,11
p-valor	0,402	7	0,374		0,76	7	0,44	0



We conclude that in no of the positions, medium difference exists between Right Side and Left Side that can be considered statistics significant.

	Average			Peak				
	D E		D		Е			
	Right Side	Left Side						
Average	97,11	82,00	128,67	94,00	160,44	124,89	229,22	155,78
Median	96	80	115	98	152	111	253	157
Standart Detour	37,83	31,52	57,08	38,24	72,48	48,34	132,67	64,54
Lower limit	72,40	61,41	91,38	69,02	113,09	93,31	142,55	113,61
Upper Limit	121,82	102,59	165,96	118,98	207,80	156,47	315,90	197,94
p-value	0,	110	0,0	066	0,1	.39	0,11	10

We will compare once again to Right Side versus to Left Right for the movement of pace.



Once again, we conclude that not medium difference exists between Right Side and Left Side that can be considered estatistics significant.

Analyzing the facts obtained, we compare the following postures, initiating for the results of the comparison of the movements for the Frontal position.

	Average	Peak
	Frontal Slow	Frontal Slow
Average	30,00	57,11
Median	25,5	47
Standart Detour	21,40	39,20
Lower limit	20,11	39,00
Upper Limit	39,89	75,22
p-value	0,009	0,107

We conclude that medium difference exists estatistics significant between the postures for the Lateral position, not only in the values of Peak as also in the values of Medium, where including, the peak of lateral acceleration is of bigger fact than the of frontal slow.

ARGUMENT

With the objective of we will achieve more neutral results, the analysis of these muscular activities was carried out initially with individual persons without neurological alterations, analyzing like this barely variations of muscular recruitment, without possible interferences of muscular spasms or postural detours.

With this, we could observe the interference of the transferences of posture regarding the significant variation of muscular recruitment, when compared with the frontal posture. The corporal alignment is associated to the tonic settlement and to the organization biomechanic (Bienfait 1995).

With the displacement of the center of gravity, the vestibular system is requested activating the log sustentation musculature and head, the stimuli body perception articulate of pressure," somatossensorial " and visual also will contribute for the settlement postural adequate, stabilizing the upper members and waist scapular for that selective movements can exist and controlled promoting alignment and stability, facilitating the execution of the function (Medeiros M., 2003).

The study of the muscular activity during the movements of the pace of the horse is of sum importance for the physiotherapist, being able to this, from these given, carry out the postural changes of form more directed to each sick in him elapse of the sessions.

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THE IMPORTANCE OF THE HORSE'S IMAGE IN THERAPY

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1 - INTRODUCTION

Recognizing the importance of the horse's image on therapy has big importance to reach the better developing. Each animal has a different image to each disable rider, and each disable rider come with a pre-make image that has to be dismitifed during the hipotherapy. This changing of point of view of the disable rider must be worked in the direction to make possible one better progression of the hipotherapy.

The horse is seen differently in accordance with the culture that is inserted, having meanings varied that they follow since the death until the victory. The image of the animal comes also allied to the some of its characteristics, as color of coat, sex, stature, among others.

An image previously established can come loaded of distrusts, fears and blockades, disabling a work to multidiscipline cash, where the privacy enters the practitioner and the horse is necessary.

2 - OBJECTIVE

The present work intends to show the importance of the horse's image and the importance of the therapist know these representations in therapy, with the purpose to choose the right animal to be worked on each marries.

3 - METHODOLOGY

3.1 - SUBJECT:

R.S. is a midle age man, with cerebral disorder, but cognitive able, who has university graduation. He has as predominant characteristic his independence on any daily activity.

3.2 - PLACE:

Esalq-Usp Hipoterapy Project, located at Piracicaba - SP - Brazil.

3.3 - USED RESOURCES:

Two horses trained for hipotherapy, one of each sex, a blanket, one cabestro and one long guide.

3.4 - PROCEDURE:

The practitioner he started its treatment in March of 2005 and continues, currently, to participate of weekly sessions of 30 minutes with strategies previously established by team.

The therapeutic process is divided in three stages, and in the last one, changes of resources had been used for bigger progression of the practitioner. The stages are: approach, double riding and individual riding. The resource change was alternation of two animals of different gender. The exchanges of the animals had given without any scale. This is justified for the fact that the disable rider present fear of the animal chosen for his therapy (masculine gender). The data had been harvested from daily reports during 15 sessions and behaviors and conversations had been analyzed, evidencing changes ahead of animals of different gender. *Approach:* this phase was very fast due to understanding of the citizen of the brought benefit in the use of the animal. In the first session the disable rider already mounted, but he asked for been followed by the therapist. The animal was observed of certain distance by the disable rider. The disable rider did not want to talk nor touch the horse. The animal was a male. *Double riding:* this only appears in the end of first session and in the beginning of second. During this phase R. affirmed many times that his desire was the individual riding. The animal was a female.

Individual riding: R. presented calm during the following sessions, carrying through requested exercises and talking sufficiently. This colloquy related only the contact with the therapist, ignoring the contact with the horse. It demonstrated confidence in his conversation and behaviors.

On the sixth session the horse again was changed, inserting the same male used on the approach session. At this moment R. said that did not trust that horse, justifying that it is "too big" and is "male". He said that prefer riding the female because the new horse had stronger movements compared to the old one. During activities developed with easiness on previous sessions R. did not obtain relax, presenting contraction of members and holding with force the handle of the blanket. It presented expressions as "oh my God" during the therapy.

On the following session the female was used to verify which would be the reaction of the disable rider ahead the return of the animal. When seeing the animal already recognized the horse, saying to be with home sicknesses. R. was relax, carried through the established activities, talked sufficiently, opposing the behavior of the previous session. Before go down of the animal, made affection and hugged the horse for the first time.

From eighth session passed to use only the male animal, therefore it was verified a necessity of the disable rider to demystify the male-bad, male-dangerous image female-good and, female-bellwether. On this session R. still demonstrated not to like the animal, saying that it was "a child" and that it was "brave". In the end of this session had been established strategies to modify the animal image before the disable rider. Activities as to talk with the animal, to ask for to permission for accomplishment of activities while was riding, to command and to be thankful had been enclosed so that the establishment of a bond between animal was possible.

On the next sessions behaviors and oral expressions had demonstrated a progression on the relation of both and consequently elimination of the male-bad image. The exercises were carried through with little difficulty, showing the confidence of R. in the animal during the activities. Some conversations demonstrate the change of the horses image for R., indicating to be safe, expressing that "I love this little animal" and informing that it finds that the horse was lesser and leaner, until distrusting that it was the same animal that he mounted on the first session. On those sessions the demonstration of affection for the horse was always present.

4 - RESULTS AND QUARREL:

On the begining of the therapy a great fear of the disable rider was observe front to an animal of the masculine gender, that was not witnessed when next to animal of feminine gender. Activities for establishment of bond between animal and disable rider had been created, in tentative to remove the image of masculine-bad gift in the relation.

As results we had a great approach of the practitioner to animal of the masculine sex, removing the image daily pay conceived of this animal. This approach and the establishment of bond between practitioner and animal were of extreme importance for the global development of the therapy.

The approach made possible a bigger reliable level in horse and thus a relaxation that is necessary for accomplishment of activities of different areas, thus reaching the objectified progression.

5 - CONCLUSION:

From comments can be visualized the horses image that is brought by the disable rider and with these information work to produce conditions necessaries for a better development of the hipotherapy.

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HIPPOTHERAPY AND ITS POSSIBLE INFLUENCES IN THE STATIC BALANCE OF PEOPLE WITH DOWN SYNDROME

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HIPPOTHERAPY AND DOWN SYNDROME

Hippotherapy is a therapeutic and educational method that uses horses in the areas of health, education and horsemanship, aiming for the biopsychosocial development, and it provides reintegration in sensorial, motive, affective and cognitive areas (CIRILLO,1999; Frazão, 2001).

The pace of the horse, due to its similar reproduction of the human gait, is the basis of this therapeutic resource (SEVERO, 1999).

This activity demands the whole body's participation, contributing to the improvement of his/her muscular strength, relaxation and body awareness, and the development of balance and coordination (CITTERIO, 1999).

Down Syndrome is a genetic anomaly, and control and balance problems are common in this pathology. The technique provides the development of potentialities, respecting individual limits and seeking social integration, providing physical, psychological, educational and social benefits (SEVERO, 1999).

Riding brings physical benefits for children with Down Syndrome. He/she is lead to accompany the movements of the horse, having to maintain balance and coordination in order to move simultaneously his/her trunk, arms, shoulders, head and the rest of his/her body, within his/her limits (FRAZÃO, 2001; GARRIGUE, 1999; FREIRE, 1999).

CASE STUDY AND METHOD

This paper is characterized as a descriptive comparative study.

The sample consisted of eight (08) Down syndrome children in the 10-11 age bracket, who attend Juliano Varela School in the city of Campo Grande–MS, subdivided into: Case group, composed of three (03) boys and one (01) girl, practitioners of Hippotherapy, swimming and capoeira; and the Control group, formed by three (03) boys and one (01) girl, practitioners of swimming and capoeira, but not of Hippotherapy.

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The initial evaluation of the static balance in the sample was accomplished in agreement with the prescribed in the Evolutionary Neurological Exam table, which supplies data that allows the detection of possible harmful effects on the static balance (LEFEVRE, 1976).

The participants of the sample were divided in two groups denominated Case group and Control group. The Case group participated in fifteen Hippotherapy sessions, capoeira and swimming. The Control group didn't participate in the Hippotherapy sessions, but only in capoeira and swimming.

The inclusion criterion used for composing the Case group was the non-existence of the participants' fear of horses and contraindications.

The exclusion criteria were to present neurological or psychiatric pathologies associated with Down Syndrome, the parental or guardian non consent to participate in the study, and the presented number of absence in the sessions equal or superior to 15%.

A component of the Case group was excluded for having exceeded the number of absences allowed, pre-established for the accomplishment of this research.

Fifteen (15) Hippotherapy sessions were accomplished in the period of June-August 2004, the authors of the paper being responsible for the transport of the sample to the place of research.

The sessions were carried out on Wednesdays and Fridays, during the period of 15:30 and 17:00, with maximum duration of 30 minutes per patient, at São Vicente ranch (Lagoa da Cruz Institute), researche base for the Universidade Católica Dom Bosco–UCDB, located at Tamandaré avenue, 8001, Jardim Seminário II, in the city of Campo Grande–MS, where the Hippotherapy Program–PROEQUO takes place.

Three (03) horses were used, fixed bits, reins, halters and saddle blankets, seeking to increase the patients' instability during the ride. The horse's pace chosen for this work was the walk pace for it is rhythmic, cadenced and the ground the sessions were conducted is grass covered.

At the week before the beginning of the research and the one after the application of the fifteen (15) sessions, the patients were individually examined inside a room allocated by the JulianoVarella Institution, where they were submitted to the static balance test - Evolutionary Neurological Exam. Each test was timed according to the test criteria and to the established time for its accomplishment (LEFEVRE, 1976).

After the fifteen (15) Hippotherapy sessions, the Case and Control groups were submitted to 19 static balance tests, according to the scale used by Antonio Lefévre. For the first eight tests, 30 seconds were used and for the others, just 10 seconds of the standing time were used (LEFEVRE, 1976).

The collected results were tabulated using the statistical program Sigma Stat for Windows 2.0.

RESULTS

Table 1 Independent T T	'est
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Standing Time (seconds)						
	Preteste Posttest 90 days					
	T Value	P Value	T Value	P Value		
Control x Case 1 to 8	-2,24	0,08	-3,30	0,02		
Control x Case 9 to 19	-2,12	0,09	-3,34	0,02		

The method used joined the tests performed in 30 seconds, that are equivalent to the tests numbers 1 (one) to 8 (eight), adding their results and dividing it by 8. Now, the tests that correspond to 10 seconds were divided by 11, equivalent to the number of tests, obtaining the Case and Control group averages for comparison, in the pretest and posttest.

Table 2:

Standing Time (seconds)					
	Pretest	te	Posttest 90 d	ays	
	T Value	T Value P Value		P Value	
	Μ	EPM	M	EPM	
Control 1 to 8	8,84	0,36	8,86	0,37	
Control 9 to 19	3,07	1,21	2,66	0,89	
Case 1 to 8	11,45	1,30	14,57	2,0	
Case 9 to 19	6,36	0,67	6,82	1,36	

Subtitles M = *average; EP* = *error pattern*



Graph 1 (p>0,05)

Comparing the results of the two groups, we verified that the Case group, composed by children who participated in the Hippotherapy sessions, obtained better results in its functional motor performance, which is of highest importance in the posture acquisition, providing the carrier of the Down Syndrome a larger degree of independence.



Graph 2 (p<0,05)

The graph 1 below represents the first eight tests conducted in thirty seconds, that occurred before the first ride and after the fifteen sessions carried out in the period of ninety days. Upon completing 90 days, the standing time of the Hippotherapy group's patients was significantly higher than that Control group's standing time.

The graph 2 below represents the accomplishment of the eleven tests conducted in ten seconds, that occurred before the first ride and after the fifteen sessions carried out in the period of ninety days. Upon completing 90 days, the standing time of the Hippotherapy group's patients was significantly higher than that the Control group's standing time.

DISCUSSION

The results obtained in this paper point to the effectiveness of Hippotherapy as treatment method to improve carriers of Down Syndrome's balance. It's known that trisomy of chromosome 21, as this pathology is also called, is a congenital anomaly characterized, among other symptoms, by balance deficit (ROSADA, 1989).

The presence of problems in the sensorial election is common in this pathology, characterized by the lack of ability to choose a sensorial modality to control balance and posture, when there is different information arriving about the position of the body in space. (ARON, 1996).

Inasmuch the motor development of the carrier of Down Syndrome becomes evident in the first months of his/her life, the general delay can be noticed in various acquired motor skills such as: to roll, to transfer objects and to sustain him/herself, which increases gradually as time passes by (SALOMÃO 1999).

Visual information plays a major role in Down Syndrome children's instability, because they need more information from the environment to manage better in situations that demand stability and balance (ARON 1996).

The proprioceptive sensitivity is generated by the vestibular system, which contributes to the perceptions of static positions of movements, and supplies information to several central systems that organize, above all, posture and balance, using as reference the synchronization of ocular movements and visual fields focus (ARON 1996).

The sensation of body position in space and of head movements depends on vestibular information, as well as on measurements originated in the vertebral articulations and vision. Down Syndrome children present difficulties in integrating information between modalities like visual system and/or proprioceptive. (ARON, 1996).

Sensorial stimulation provides growing increase in the demand for stimulus for the systems: vestibular, since the patient can be positioned contrary to the movement of the horse; proprioceptive, pressure of the bones of knees, hips, elbows and shoulders if the practitioner is in the cat position; and tactile, by the contact with the hot skin of the horse (SEVERO, 1999).

The horse, by generating more complex movements of rotation and lateral dislocation in the patient's body, contributes for his/her global development. The consequent proprioceptive information, activated in the practitioner's body, is interpreted by its sensor organs of balance and posture as momentary situations that demand new postural adjustments (head and trunk control), besides contributing for muscular relaxation, and so cooperating to keep him positioned on the horse (APRILE, 1999).

The horse leads the practitioner to perform movements similar to the human gait, for the rhythmic, precise and three-dimensional movement of the animal can be compared with the action of the human pelvis while walking. These activity facilitates and demands the body's participation as a whole, contributing to its muscular strength improvement, relaxation, corporal awareness, development of balance and coordination (SEVERO, 1999).

As it walks, the horse propitiates to the practitioner, even if involuntarily, horizontal threedimensional (right, left, front and back) and vertical (upward and down) movements. These dislocations act directly on the deep nervous system, responsible for the lateral notions, balance and distance, that is to say, the simple walk of the animal makes it a therapeutic machine, capable of guaranteeing the practitioner a motor capacity that he/she doesn't have, in function of his/her deficiencies (SEVERO, 1999).

The physiatrist and mechanotherapist Gustavo Zander, in 1890, was the first to affirm, without associating it to the horse, that the vibrations transmitted to the brain with 180 oscillations per minute stimulate the Sympathetic Nervous System. In 1984, Dr. Detelvev Rieder, in charge of the neurological unit of the Martin Luther University, in Germany, proved that, on the horse's back, at walk pace, the vibrations produced correspond exactly to those recommended by Zander (COPELAND, 1997).

Hence, the biomechanics of the movements of horses is associated to the transmission of nervous pulses to the practitioner, providing a reintegration in the sensorial, motor, affective and cognitive areas, besides the perception of the

environment in movement, favoring the improvement of the balance through the constant stimulation that the horse's three-dimensional movement generates on the vestibular, cerebral, and reticular systems (FRAZÃO, 2001).

It is suggested, then, that new studies be developed aiming to evaluate if the accomplishment of physical activities for lingering periods of time using fixed modalities would propitiate the saturation of the carriers of Down Syndrome respiratory tract, interfering not only in the stabilization of neuro-evolutionary gains, but also, in its regression.

CONCLUSION

The results obtained in this paper point to the effectiveness of Hippotherapy as proposition for improvement of the balance of carriers of Down Syndrome. However, it is suggested that studies involving more numerous sample groups be accomplished, so that these results can be confirmed.

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COMPARATIVE POSTURAL ANALYZES ON LAND AND AT HORSEBACK RIDING WITH A CEREBRAL PALSY PATIENT

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Introduction: Cerebral Palsy appears frequently in neurological rehabilitation. It's characterized mostly by a motor disturb during the first childhood as a result of a central nervous system disorder. The therapeutic horse riding is a complement to the rehabilitation program, being the integration with this animal a help to patients in their neuropsychomotor reorganization. Objective: To analyze and compare the muscular behavior of a 8 years female patient, with cerebral palsy with lesion topography as dystonic tetraparetic characterized by motor incoordination and muscle deficit of lumbar erectors muscles, in different positions on the horse, comparing to land seated position. Methods: It's being realized skin asepsis with an alcohol field cotton before starting collect data with Electromyography surface MIOTEC® and a software Myography with 4 channels, bipolar circle surface silver electrodes Medtrace® spacing=2.5cm, was positioned at erector lumbar muscle motor point, according to the technique suggested by Cram et al. (1998). The analyzed postures were: seated on a chair without back and arms support, on a stand and walking horse, in frontal seated position; always during 30 seconds in a straight direction. Results: It's being observed a muscle recruitment of 12,37µV on the right side and 9,10µV on the left side when the subject seated on chair. When seated on stand posture, muscle recruitment was 32,10µV on the right and 46,00µV at left. When the horse was walking, the muscle activity was 57,70µV on the right side and 67,33µV on left. Lumbar D Lumbar E Seated on chair 12,37 µV 9,10 µV Seated on horseback stopped 32,10 µV 46,00 µV Seated on horseback walking 57,70 µV 67,33 µV Discussion and conclusion: Based on upon results, muscle recruitment was more significant when seated over horseback, while this kept a regular gait, when compared to the other postures. When therapists aims to work trunk motor control, know with posture can recruit better these muscle groups is essential to get to a better therapeutic result. Understanding and analyzing the biomechanical processes of therapeutic horseback riding, rehabilitation procedures can be guide for a safer and more effective motor improvement. From now on it's necessary to get to the bottom of this line of research.

The first CP report cases have been described in 1843 by William John Little, an English surgeon, that defined it as a illness connected to different causes and characteristics, commonly the muscle stiffness. The author characterizes CP as lesions that paralyse children on their first year of life, causing spasticity in the legs and arms. This sickness have been called for many year as Little sickness, but nowadays it is known as CP spastic diplegia. Little suggested that some complications during the act of birth, resulting with the lack of oxygen, could cause damage to the sensible brain tissue (Diament, Cypel, 1996, NINDS, 1997, Rotta, 2002).

"CP presents posture and movement disorders, that are permanent but not unchangeable, result of a cerebral disorder that is not progressive. It is caused by hereditary factors, events during pregnancy, birth, neonatal or in the first two year of life" (Bobath, 1997).

The CP child presents the motor disturb as its main disorder. This one leads to gait difficulties by many factors, such as the lack of trunk control and tone disequilibrium.

The motor disorder in dystonic subgroup is characterized by a sudden and generalized change in the muscle tone, specially a higher tone on the trunk extensors stimulated by emotional stimulus, or neck muscle posture changes under intentional movements. In these cases the primitive reflex activity always interfere on the voluntary motor effort. The patients also tend to assume and maintain twisted postures, in the same stereotype pattern (Aicardi, Bax, 1992).

Tetraplegic people constitute the majority on the encefalopathy group. Their psychomotor development is almost zero. They tend to be laid with their upper limb in flexion and their lower limb in extension. They could stay sit under support, in the best instance. They can't manipulate objects or feed themselves alone (Rosemberg, 1995).

According to the American Hipoterapy association, therapeutical horse ridding could be defined as the physiotherapeutic and other health care professional's usage of the natural horse movements on the treatment of physical disabilities, functional limitations or muscleneural disorders. This tool could be utilized as part of an integrated treatment program whose objective is to achieve better functional results (Baker, Benjsmin, 2001).

Walter e Vendramini (2000) show that therapeutic riding use riding techniques and activities to give physical, psychological, educational and social benefits. This task demands participation of the entire body, contributing to development, self conscious, body balance, motor coordination improvement, attention, self-trust and self-estimate. Thus, therapeutic riding is a rehabilitation and education method that works with the entire patient status. Allow riders to experiment a better neuromotor conditions, find pleasure, social relationship and independency, compatible to his disability, are the large range of possibility that therapeutic riding offers (Lallery, 1988).

Muscle electrical potency can be detected by the usage of surface electrodes, that correlates to the electromyographic signal displayed on the monitor (Basmajiian, 1963; Basmajian, 1975; Smith et al, 1997; Binder-Macleod, 2001; Low e Reed, 2001). The surface electromyography is the membrane electrical activity registry in response to the physiological activation (Andrews et al, 2000; Kubler et al, 2001; Robinson et al, 2001; Torriani e Cyrillo, 2003).

The electrodes are places above the skin, capturing the electrical activity of all active muscle fibers. It is characterized as a non invasive method, been easy to execute. This method is widely used in kinesiology and neuro physiology studies of the surface muscles.

METHODS

SUBJECTS

Took part of this study one female unknown race horse, and an eight year old female CP (distonic tetraparesy) child that already was attending to horse ridding before. The patient did not present restrictions to the horse ridding, such as atlant-axis instability or hip

dislocation. The physical space where the test was an open rectangular riding school, being the track full of soft sand. The horse movement was not restricted during the data collect. Procedures

It had been realized skin asepsis with soaked alcohol cotton (58%), then it has been put some round AgCl Medtrace® brand electrodes on the motor point of erector lumbar. The myoelectrical signal has been captured by Miotec® 4 channel surface electromyography apparel.

The time spent on the data collect was 30 seconds on each different posture, and the horse frequency was 84 steps a minute. The patient sustained the body stability by her own during the period of analysis, without support of any subject involved on the test. It is important to say that two therapists where right aside the patient, just in case of security, and one person where leading the horse.

Being realized on open air ambient, and in constant movement, it had to be adapted a way to maintain both electromyography and notebook stable. It has been used large cables to the surface electrodes, large enough to enable all horse movements.

The study has been based on the obtained results of electromyography without statistic analysis because it was just the study of one case, besides; the purpose of the study was to compare the activity of the lumbar erector on the different postures on the horse. The selected postures on the horse were, respectively: seated on a chair without back and arms support, on a stand and walking horse, in frontal seated position. RESULTS

It has been observed the following results during the analysis of the electromyographyc data realized on the eight year old female patient:

TABLE 1: Data of electromyographyc signals on the left and right lumbar erector	S
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Postures	Right Lumbar Erector	Left Lumbar Erector
Seated on a chair	12,37µV	9,10µV
Frontal static horse	32,10µV	46,00µV
Frontal moving horse	57,70µV	67,33µV

DISCUTION

In this case study we could observe, by surface electromyographic, postures realized on horseback and on land (table 1), where by muscle recruitment was evidential that horse provides more unbalances when walking, that if compared to a horse when still and to stand on land positions, causing enlargement of erector lumbar muscle recruitment.

Walter e Vendramini (2000) show that therapeutic riding use riding techniques and activities to give physical, psychological, educational and social benefits. This task demands participation of the entire body, contributing to development, self conscious, body balance,

motor coordination improvement, attention, self-trust and self-estimate. Thus, therapeutic riding is a rehabilitation and education method that works with the entire patient status.

The three-dimensional movement caused by the horse oscillation could produce movements on the pelvis of the rider that are similar to the gait (Fleck, 1992).

The frequency of unbalance caused by horse's paces (steeps), plus this tri-dimensional movement that takes the patient to enlarge his balance reactions to keep themselves on riding posture.

Gusman and Torre (1998) define balance reactions as an adjustment to the posture, to maintain an regain the balance before, during and after the gravity center displacement.

So, besides the balance, posture stabilization and reestablishment of the motor disorders benefits, the patient could even try to walk. Consequently, the patient's senses are improved, and their trunk stabilization muscles are strengthened. This is the case of the lumbar erectors. As wrote by Kandel; Schwartz and Jessel (1997), men's axial and the proximal appendicular muscles are used to maintain the postural balance, while distal muscles are used to manipulative activities.

The preliminar purpose of the CP theraphy is to maitain static posture, that is the base for the execution of other more complex activities. The therapeutical horse ridding uses the body weight, together with a variety of swings, like the applied stimulation on the pelvis or in the whole body, develops better balance reactions, enhances the trunk postural control, activates the pelvis and hip articulations, resulting in a better tonic adjustment (Bertoti, 1988).

It is important to mention that the gravity alignment between horse and man could ignite the central nervous system, achieving various neuro motor objectives, such as: balance enhancement, tone adjustment, body alignment, motor coordination, and muscle strength (Medeiros, Dias, 2002).

The horse pace transmits to the rider a number three-dimensional movements, that corresponds on the vertical plan to up and down movements, on the horizontal plan to left and right movements and on the longitudinal plan a forward and backward movement. These movements are added to a small torsion movement on the pelvis, that are caused by the lateral flexions of the animal torso (Buchene, Savini, 1996 in Uzun, 2005).

For therapeutic horseback riding pace is the best horse walking speed, despite to its characteristics, being a pace that always keep one or more limbs in contact with the land; it is symmetric, slow and every movement produced at one side of the horse, occurs in the other side, and its reactions turns slowly and for a longer period of time (Uzun, 2005).

During the gait, the human being moves using their legs alternatively. While one leg is on the sustention phase, the other is on the double sustention phase or on the propulsion phase. The body weight moves ahead during the gait as soon as the gravity center moves. The pace is an act of protection in this case, so we don't fall during this process. The trunk turns on its own vertical axis, the shoulder and the pelvis dissociate. During the gait the weight dislocates from one side to the other, which corresponds to approximately 0,5cm on the adult (Medeiros, Dias, 2002).

At therapeutic riding process, patients treatment is made by a global way, that's why many postures are stimulated, some of them objecting motor training, in this case specially the muscle strength increasing, other sensitive experience by horses contact with patients, promoting sensorial integration with both of them.

Kandel; Schwartz and Jessel (1997) declare that the sensorial systems supply an internal representation of the exterior world. One of the main functions of this representation is to guide the movements that compose our behaviour repertoire. These movements are controlled by the brain's motor systems and the espinal cord. Allowing them to keep balance and position, to move their body, members and eyes.

Kugler (1980), in his book Rudolf Steiner und die Anthroposophie, approaches the similarity between horse and man, recommending the use of the animal to improve balance of the human mind. The author compares horse's gait and man's cardiac frequency. This study shows that the horse's posterior members footstep is stronger than the previous members, representing systole and diastole, respectively.

Horse's external heat is equal to man's internal, being the only mammal that sweat in all body, as well as man. The author affirms that because, its size and physical aspect, the horse really induces the man to feel powerful, at the same time that he is sheltered. When the horse carries the man on its back, happens a simulation of the motion of human pelve, transmitting the received sensations in intrauterine life.

The horse, besides provides motor therapeutical benefits, provides sensorial e psychological experiences through its body temperature, height and swings. So the main patient sensorial vantage is the relationship between man and animal.

CONCLUSION

Based on the results of the lumbar erector electromyography, it could be observed a major degree of muscular recruitment within the different analyzed postures when the patient were sit frontal moving horse.

Wickert (1999) presents in his study historical, psychological and physical reasons that justify the use of the horse as a therapy. Historical reasons, because the horse follows the man in all his evolution and carried him on the back in the historical formation of almost all the countries; psychological reasons, because the power sensation is on to the horse, where the man conquered and dominated his adversaries; and physical reasons, because the threedimensional and multidirectional movement provides displacements in many directions. So therapeutical riding become unique compare with others methods of physical and mental rehabilitation.

Consequently it has been showed that the therapeutical horse riding is a great therapeutic method considering the different postures and the three-dimensional movement caused by the horse's oscillations. These factors cause series of reflex muscular contractions, specially on the lumbar erectors, that united with other proximal muscles maintain the subject sit on the horse.

In this patient case, beyond the sensorial system benefit that the horse transmits, the subject gains a motor benefit in the sitting position during the footstep, strengthening trunk extensors in compare to the standing horse or standing solo. During the footstep the sitting position conscript more muscular fibers for stabilization than other posture, besides the horse three-dimensional move that simulate the hip oscillations during the human gait. If the purpose were to strengthen other muscular groups, it becomes interesting to realize a electromyographyc study to obtain the correct evaluation of the adequate posture. It is important to point the therapeutic work to an individual approach, choosing wisely the best conduct for each patient.

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GESTALT THERAPY AND RIDING THERAPY: A FRIENDLY RELATIONSHIP

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INTRODUCTION

My interest in riding therapy comes from the proximity which I have always had with horses and in my belief in the benefits that this animal can bring to humans in the most diverse areas, including psychological aspects.

Through personal identification, I opted for the Gestalt therapy, hoping to immerse into the theory of this field of study as well as the practical implications.

OBJECTIVE

Show that the Gestalt therapy is indicated for use by the psychologist during riding therapy sessions.

JUSTIFICATION

The Gestalt therapy is a therapeutic method which aims to work on various physical and psychic aspects of the patient, who, by relating himself with the horse, the surroundings and with the professionals involved in the process, can obtain a more direct and differentiated contact with the world of relationships.

The inventor of the Gestalt therapy was Frederick Perls, who thereby classified the structure of a new clinical field. In it, he articulated theories and work techniques, to give man the necessary conditions for self growth (RODRIGUES, 2000).

As this type of therapy encompasses different areas of knowledge, good results will only be attained by the actions of professionals from these areas if they work in a team effort. Not only are there needs in knowing the peculiarities of the horse, the environment, of the correct corporal postures and other proper procedural conditions of the professional involved, the Psychology aspect is fundamental, once the whole objective of the therapy is the well being of the patient, with regards to their emotional, psychic and social relationship "(...) The study of how the human being works in his environment is the study of what happens in the contact frontier between the individual and his environment. It is at this contact limit where psychological events occur. Our thoughts, actions, behaviours and emotions are our way to experience and find these bordering facts" (PERLS, 1988, p. 31).

Within the field of psychology, the Gestalt therapy offers to the riding therapy work means to recognise, rescue and integrate the alienated parts of the total personality of the individual. It is a vivential psychotherapy based on the phenomenological approach which has as its only goal the conscience itself, being its methodology the awareness with sources obtained from the dialogical existentialism (YONTEF, 1998, p. 234). His basic concept and his vision of the world sustain themselves in the holism and in the field theory.

Basically the ones who will profit from the riding therapy are: people with emotional disorder and the physical and/or mental disabled.

In order to achieve a good result it is fundamental that the gestalt therapist knows the horse's ethology and is able to read the animal's behaviours and attitudes so that, during the session, he can observe and collect the resulting information from the patient's meeting with the horse. Horses are animals that live in groups and use their body to communicate, which makes them real specialists in body language. They understand little from verbal communication but can perceive what the human body demonstrates, being therefore able to detect the real manifestations of the patient. Besides transmitting life, happiness, perfection, affection, feelings, sensation of freedom and evoking emotions, horses also have frankness as a quality, which facilitates the authenticity of the observations obtained by the therapist. The horse will then serve as a projective screen for the patient, in which he will deposit his contents and his alienated parts, and these will be used as material for his awareness collected from this undergone experience. The gestalt therapist tries to integrate the patient in order to re-establish his capacity of discriminating and finding out who he is and what he is able to achieve, helping him to obtain his own equilibrium and the limit between himself and the environment that surrounds him.

METHODOLOGY

Bibliographical research which encompasses the psychologist work proposition through the gestaltic approach for patient caring with riding therapy, in order to make evident the horse relationship towards the patient.

CONCLUSION

According to Ribeiro (1997, p.15), "the Gestalt therapy is centred in the contact concept and in the nature of the relationship of the individual with himself and with the external world", therefore the riding therapy can, in its framework, bring together all the treatment basing itself in the Gestalt therapy through techniques to create and facilitate favourable situations for the therapeutic setting for the patient, aiming at his self-growth and at the reestablishment of his equilibrium through interaction with the environment.

There is a possible intertwining to be done between the riding therapy and the Gestalt therapy, and this seems to be indicated to fundament the understanding and the interventions within the psychological scope, taking the environment as a whole into consideration.

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THE INFLUENCE OF HIPPOTHERAPY ON THE FORCE OF THE INHALING MUSCLES ON A PRACTITIONER WITH DOWN SYNDROME – CASE STUDY

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ABSTRACT

The present article refers to the study of the inhaling muscular strength of a bearer of Down Syndrome, that realizes Hippotherapy. The Down Syndrome is the genetic syndrome most known. Its cause is due to the excess of genetic material originating from the chromosome 21. One of the main clinic characteristics of the bearers of Down Syndrome is the generalized muscular hypotonia. As a consequence of his posture and of the muscular hypotonia that also affects the respiratory system, the Down presents an accumulation of secretion which prejudices him for respiratory problems. The predisposition for hypoventilation is necessarily linked to the hypotonia. The muscular tonus and the posture interfere in the respiratory function. As the Hippotherapy benefits the regulation of the muscular tonus, adaptation of the posture and muscular strength stimulation, the practitioner with Down Syndrome can benefit having a better performance regarding his respiratory function, while his trunk musculature and respiratory musculature are stimulated on the horse. With the respiratory musculature and the posture more adequate one can prevent respiratory complications, improving the life quality of these individuals. The study was carried out with a bearer of Down Syndrome, being evaluated his muscular strength in the beginning and in the end of the hippotherapeutic treatment, in which were analysed values of inhaling pressure (Ip) and maxim inhaling pressure (Max Ip) obtained through the manovacuometry with the aim of demonstrating the influence of the Hippotherapy in the inhaling musculature of the Down. One obtained as a result an improvement of the strength of the inhaling muscles, happening an increase of the inhaling pressure and max inhaling pressure values, after the applied hippotherapeutic treatment.

KEY WORDS: Hippotherapy, Inhaling Muscles, Down Syndrome.

1 INTRODUCTION

Hippotherapy tries to obtain the biopshycosocial development of disabled people or of those with special needs. The horse's movement is the base of this method of treatment. As its three-dimensional march is similar to the man, the swinging rhythm of the horse's walk is transferred to the patient's trunk and pelvis and it produces an extraordinary effort on all the systems of the body. These oscillations occur on the same level of human movement and they are interpreted as physiological movements by the semicircular canals of the vestibular system. The adaptation of the patient to the rhythm of the horse pace requires contraction and expansion of the agonist and antagonist muscles at the same time. "(...) this activity demands the participation of the entire body, thus contributing to the development of muscular strength, relaxation, awareness of the own body, improvement in coordination and balance" (PROENÇA, 2002).

Hippotherapy is adressed to people with Down syndrome, although one must be attentive to the flexibility of the joints and the instability of the articulation, mainly on the atlanto-axial joint. Before starting the treatment with Hippotherapy it is necessary to verify cervical spine X-rays in hyperflexion and hyperextension of the patient (LOPES, 2002).

The first clinical description of Down syndrome was published by Langdon Down in 1866. The Syndrome is characterized by phenotype alterations which includes an intellectual deficit. It is also caused by the excess of genetic material, instead of having two chromosomes 21 which is normal, the Down syndrome person has three chromosomes 21. (GONZALEZ, 1981). According to RATLIFFE, some physical characteristics are very common on people with Down syndrome, for example: low muscle tone, loose-jointedness, the face has a flat appearance and a flat bridge of the nose, the eyes have an upward slant, small ears, long and protruding tongue, the hands are small with short fingers, the little finger slants inward and there is a single crease across the palm.

The delay on the motor development, the umbilical and inguinal hernias, and the diastasis of the rectus abdominis muscle are related to the hypotonia of the skeletal striated muscle in a person with Down syndrome. The same effect occurs in the systems which represent the smooth musculature and hold the pseudostratified cylindrical ciliated epithelium. This type of epithelium vibrates and produces the movement of the mucus by the califormis cells. "The hypotonia of the smooth muscles may be caused by a reduction of the ciliated vibrations which also characterizes alterations of the respiratory epithelium and its muscles, and provides perfect conditions to the proliferation of bacteria" (MUSTACCHI E ROZONE, 1990). People with Down syndrome are hypersecretor, have a defective immune system and as a result of their posture, they have a weak diaphragm and are more prone to get cold and respiratory infections.

People with Down syndrome are more prone to come down with illnesses of the respiratory system. Pneumonia is the most common one and it is the cause of many deaths. (BURNS, 1997).

The muscles of respiration are responsible for the adequate functioning of the respiratory system. The mechanism of drawing air into the lungs happens thanks to the contraction and the coordinate enlarging of the muscles linked to the thoracic cavity. The diaphragm is the main muscle of the respiratory system. Its effectiveness in modifying the size of the thoracic cavity is related to the force of contraction and its form in a relaxed state. The normal inhalation is due almost exclusively to this muscle. During the inhaling it is necessary a negative intra-thoracic pressure in order to move the air from outside to inside. It is believed that the normal exhalation is a passive process where the inhaling muscles relax and the lungs turn to its normal position (SHEPHERD, 1996).

It is used the advice manovacuometry to measure the strength of the muscles of respiration. It gets values known as inspiration pressure (Pi) and maximum inspiration pressure (Pimax). According to WINKELMANN apud AZEVEDO, on a young adult these numbers varies from -90 to -120 cmH2O (WINKELMANN, 2003).

The measures of the maximum respiratory pressures are useful to the functional evaluation of the respiratory muscles. The act of coughing depends on the values of the maximum respiratory pressures as well because if one has a weak respiratory musculature it becomes difficult to eliminate secretions and it may lead to pulmonary complications.(FERREIRA, 1999).

The goal of this research is to analyze whether the Hippotherapy provides improvement in the strength of the inspiration muscles of a person with Down syndrome.

2 MATERIAL AND METHOD

To confirm its effectiveness, it was observed the case of a male person with Down Syndrome, aged 29, who has been doing 30-minute sessions of Hippotherapy once a week during two months. In total there were eight sessions and they took place at *Fundação Ecumênica de Proteção ao Excepcional – Complexo Educacional Juril Carnasciali.*

The sessions of Hippotherapy have been carried out with riding and other activities, focusing on the improvement of the muscle tone, postural alignment and strength of the trunk musculature. As this practitioner is able to take control of the animal without the help of the instructor and the sidewalkers, there have been some exercises where the practitioner guided the horse in order to develop his self-esteem and self-confidence. Activities such as grooming and preparing the equipment to go horseback riding were provided too.

The manovacuometry was used to evaluate the strength of the inhaling muscles. The values for inspiration pressure (Pi) and maximum inspiration pressure (Pi Max) have been gotten and these values refer to the force of the main respiratory musculature – the diaphragm. These evaluations have been done in the beginning and right after two months of treatment, when the sessions had been finished, at *Clínica de Fisioterapia da Universidade Tuiuti do Paraná* and with the contribution of a physiotherapist – Dr. Marcelo Márcio Xavier. During the period of the research the patient has practiced only Hippotherapy and has been filmed and photographed after we were giving the permission to do so.

3 RESULTS

The results obtained through the manovacuometry were carried out before and after the treatment and one can see them on the chart below (Picture 1).

Picture 1 – Measures taken by manovacuometry and carried out before and after the treatment.

Manovacuometry	Before the treatment	After the treatment
Inspiration pressure (Pi.)	- 30 cmH ₂ O	- 34 cmH ₂ O
Maximum inspiration pressure (Pimax.)	- 42 cmH ₂ O	- 60 cmH ₂ O

After checking the results, it can be noticed that the force of the inhaling musculature of the practitioner has improved. There has been an increasing of 4 cmH2O on the inhaling force and an increasing of 18 cmH2O on the maximum inhaling force after the treatment. On Picture 1, one can observe the performance of the inhaling musculature force in relation to the values of inspiration pressure and maximum inspiration pressure before and after the treatment.

Chart 1 – Performance of the inhaling muscular force compared with the values of Inspiration Pressure and Maximum Inspiration Pressure



4 DISCUSSION

After examining the data obtained, an improvement in the force of the practitioner's inspiration musculature was noticed and this benefit was due to the practice of Hippotherapy. Another scientific technique on the performance of the Hippotherapy hasn't been found on the practitioner with Down syndrome.

The physical therapist seeks to preserve the respiratory function through the development of the posture and body movements because of the practice with the thoracic and abdominal muscles (LUSTOSA, 2002). It is necessary to observe the awareness and the position of the body on orthostatism. The horse's walk requires of the patient new positions of the back, in addition the rhythm offers several benefits because it has been existing in our lives since pregnancy, on the heart beats, breathing, etc. To stimulate the sensory inputs, a decubitus position can be used to emphasize the awareness of the pulmonary ventilation (ROCHA, 2002).

In Down syndrome, some characteristics as obesity, hypotonia, globose abdomen and hiperlordosis may cause difficulty in motor skills, laterality disorder, and others; in addition it contributes to delays in the psychomotor development, which causes unnatural spine curvatures such as scoliosis, kyphosis and problems with the respiratory function. The Hippotherapy is presented as an effective method to the practitioner with Down syndrome because it treats the body as whole, providing several stimulus and information for their biopsychosocial development.

It is important to point out the necessity of a deeper study and accomplishment of new researches and techniques about the influence of the Hippotherapy on the practitioner's act of breathing. It was proved by the results that the person who practices Hippotherapy can improve their abilities.
5 CONCLUSION

It has been concluded that Hippotherapy is an efficient means for the patient with Down syndrome to achieve positive outcomes, specially related to the strength of the inhaling muscles. After the treatment program, the practitioner has improved his inhaling force and it has been confirmed by the values of inspiration pressure (Pi) and maximum inspiration pressure (Pi max). In addition, the positive results contributed to a better quality of life of the patient as well.

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THE IMPORTANCE OF THE SPEECH-LANGUAGE THERAPIST'S WORK IN CHILDREN WITH CEREBRAL PALSY IN THE "EQUOTERAPIA"

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Objective: To present the importance of the speech-language therapist in the "equinotherapy" work in the children with neuropathy.

Introduction: "Equinotherapy" made of hippotherapy and therapeutic riding is a method of stimulation and total rehabilitation of the people with a handicap or in difficulty which profits from it. Interactions between rider, guide (therapist) and horse are multiples and complementaries. The patient rider wants to share his/her emotions generated by the movements of its mounting generators of propriocepting feelings internal and external with his/her guide (therapist). This situation of risk and valorization is specific and facilitates obviously defective psychomotor developments or not used, in particular in the sphere of the Sensorial System - Motor - Oral (SSMO). The intelligence of the heart of the people wounded in their intelligence, their body or their heart is very sharp, sharper sometimes than normal people said and when they can share their emotions with people who love them, which respect them and which give them valorization. Such results seem extraordinary, like this communication will show several of them. Based in the concept of neurodevelopmental treatment, the speech-language therapy emphasizes the work with the oral functions of feeding, breath, mimic and speech, aiming at the improvement of the SSMO. The facilitation techniques search the synergic performance of the aligment reactions, precursory of protection reactions and balance to the anti-gravitational position, being used in the three movement plans. The movements of the human body occur inside of three planes: sagittal, frontal and transverse. These follow a hierarchy, which correspond to the stages of the motor development, being the transverse plane the most improved. We have in the "equinotherapy" the use of the horse - "a cylindrical body of reactions" - with threedimensional movements, where the facilitation will be dynamic through the movement, promoting an active use of the muscles, developing a coordinate functioning to the oral motor, respiratory and speech systems.

The use in the "Equoterapia": In the specific work of the speech-language therapist in the "equinotherapy", the therapist and the patient, will benefit themselves of proportionate the tonic adjustments for the horse, in great profits that it evidences in: corporal alignment (biomechanics), reactions of balance, rectification and protection ("balance"), cervical control and balance of trunk, normalization of tonus, etc, essential for the better oral motor, respiratory, articulation and sensory motor functioning (Neves, 2000, 2002). In the "equinotherapy" the technical/manipulation of facilitation will be directly related with the components of pre-speech. It's indispensable that the speech-language therapist has a good professional formation; therefore he/she will have to make a detailed evaluation that will go to determine the treatment. The evaluation of the components and the functions of the oral-motor skills require a deepened functional and anatomical knowledge. The plane of

treatment does have a good purpose and the use of the techniques in the treatment, to take aim a direct or indirect approach to obtain a global functional balance. The treatment is specific for each case. The possibilities of this work will be presented through audiovisuals projections (slides and videos).

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THERAPEUTIC PROGRESSION IN A MYELOMENINGOCELE CASE

Author: Thaís Pezzato Gonçalves de Oliveira - Brazil Co-authors: Ana Paula Margarido Caldas; Eveli Maluf; Ana Paola Negri; Cláudio Maluf Haddad

1 - INTRODUCTION:

The myelomeningocele, a type of spine cystic bífida, is the form most common and serious of the disease. It is a defect of closing of the tube neural and in the subsequent vertebral arches that it still happens in the maternal uterus, during the formation of the nervous system. There are an abnormal growth of the marrow and a tortuous course of the elements neurais, that results incapacity sensorial, and motor, being in the great majority of the cases flaccid paralysis in the level of the lesion and spastic below the level of the lesion (UMPHRED, 2004).

In agreement with UMPHRED, among other complications the hydrocephaly is present in 80 to 90% of the cases. It results in a blockade of the normal flow of the liquid cerebrospinal (LCS) between the ventricles and the spinal channel, that if no drained, it can take to larger cerebral lesions and until the death. Another thing that frequently can be present is the intestinal and urinary dysfunction, this for the compromising of the plexus sacral, the incomplete emptying of the bladder worries, therefore it can generate infection of the urinary treatment and still possible renal damages.

Riding therapy as complemental method interdisciplinary, search to improve the quality of their disable rider's life. That therapy uses the horse, because it is through it three-dimensional movement, thoroughly mentioned in the specialized literature and of the image of that animal, that can reach great benefits in different cases. Regarding physical aspects hipotherapy

"has as auxiliary objective in the acquisition and development of the motor functions, through the use of the horse as therapeutic instrument, demanding from the horseman planning and creation of strategies, developing and/or potentiating the motive abilities and the several" conceptual attitudes. (Dias and Medeiros, p.7, 2002).

Besides, through the image of the horse can be reached benefits related to the self-esteem and self-confidence. Fact justified by Chevalier and Gheerbrant (1997) affirming that the horse is an illustration beauty representative and potentiality, elevating the person to glory feelings, victory and domain.

The establishment of the link between the child and the horse, mainly in disable rider' cases that present fear in the beginning of the treatment, it is the factor of larger importance. Without the affectivity relationship and pleasure between the disable rider and the horse there is no harmony and without harmony the benefits become difficult of being reached.

The riding therapy activities are divided in three basic programs: hipotherapy, educational phase and pre-sportive. In this study the therapeutic progression will be presented in a hipotherapy program that the disable rider doesn't present conditions physical and/or mental to maintain alone in mount commanding the animal, for that is made necessary the use of an auxiliary-guide, to guide the horse, a therapist to execute the established work and a lateral auxiliary, offering larger safety to the disable rider.

The presented case refers to a six year-old child carrying myelomengocele associated to the hydrocephaly. The psychological picture observed initially was of great fear of the horse and the physical picture of a hypostasis the inferior members with absence of any functional muscular activity in the same ones, what generates her great unbalance.

That fact potentializes her fear, turning her mount in a largest challenge, mainly for not being in her mother's lap or of other person that transmits her trust. According to UMPHRED (2004), due to the sensorial loss already commented previously, the child mielomeningocele carries has to trust the vision and in other sensorial systems to substitute that loss.

When coming across with the image of an animal of great load, this child can see herself in a risk situation and at first rejecting the possibility to begin a link or a "friendship" with it. This case began in February of 2003 and it continues until the present days.

2 - OBJECTIVE:

The objective of this study is to demonstrate like riding therapy can eliminate the fear, to increase the self-esteem and the self-confidence of the disable rider through the establishment of a link between this and the horse, as long as she creates trust in the horse and in the therapists, seeking better independence and the disable rider relationships between people, through a better communication and language.

3 - METHODOLOGY:

3.1 - subject:

A female with six years old child, of age, carrying myelomeningocele associated with hydrocephaly.

3.2 - local:

Riding Therapy Project Esalq-Usp, located in the city of Piracicaba-S.P, Brazil.

3.3 - Used resources:

A prepared horse for the development of riding therapy, a blanket, an adapted saddle, a butt, a halter, a long guide, small balls and a fruit basket.

3.4 - procedure:

The disable rider began her treatment in February of 2003 and she continues to the current days participating in weekly sessions of thirty minutes with the use of strategies previously stipulated by the responsible therapists in each progression phase.

The process was divided in the following stages:

Approach:

That is the phase where begins the link establishment between the disable rider and the horse, it was a difficult phase to the disable rider due to the child presents fear of the animal. To initiate a link among the disable rider and the animal, the therapist presented her the horse. In the beginning she didn't want to touch it, arrive close and difficultly she looked at him, not even to point the parts of the body of the animal that were nominated by the therapist.

In spite of that, when being questioned, she answered that she wanted to ride the horse next time.

Double Riding:

In the second day the disable rider accepted to ride together with the therapist, still presenting fear. Therefore the work of link establishment between the disable rider and the horse should still continue in that phase of double riding. The material used in the horse was the blanket, because the contact with the animal would be more intense, besides in this case, to be the material considered ideal for this mount type.

During the sessions the therapist stimulated her to caress the horse, was suggested to "arrange it" to be beautiful for the therapy, "combing", nailing fasteners in it mane, spurting parfum and feeding him with carrots. After five following sessions in that same work, the disable rider no longer presented so resistant with the horse, but she refused in removing the shoe so that one of the therapists could accomplish an exterocepção work in every inferior member.

For the child like nail polishes, the therapist suggested bring them and to paint the disable rider's nails and also the skull of the horse. Immediately the disable rider agreed with enthusiasm and they made that in the next session, leaving her satisfied and accepting to remove the shoe whenever necessary on top of her new "friend". That fact was of extreme importance so that it was possible to observe a considerable reduction of the disable rider's fear for the horse.

Won this stage, the objective was to guarantee that the disable rider stayed alone on top of the animal. For that the therapist decrease, gradually her time of double mount always with the justification of the game that was being executed gets better. It was facilitative of this stage the disable rider's suggestion of playing of hide-and-seek with the therapist, because the same needed to disassemble the horse to hide". In the beginning the disable rider seemed undecided, but later it ended up accepting that the therapist got off the animal, giving continuity in the game. Therefore from thirty minutes of double mount, it passed for twentyfive minutes and so on, until it stayed her total of just the apprentice in mount. This way she also could begin a phase of physiotherapeutic work seeking to stimulate the balance, because setting up alone the disable rider needs to adjust to look for her balance sitting down in an unstable surface.

That stage had the duration of approximately twenty sessions.

Individual Riding:

Although the child's link with the animal was already established, she needed pleased reasons to stay in individual mount, because some of her attitudes still demonstrated fear. For prepare the horse, began the use of the adapted cell that could offer her more independence.

Another procedure were used: to guide the horse in zig and zag, to find, catch and name dispersed fruits in the riding space, stimulating, this way, her superior members, impeding that the disable rider held the loop of the cell. All opportune moment the disable rider received incentives, praises and was reminded constantly of caressing her therapy "companion". The horse was stopped every time that the disable rider demonstrated fear. On those hours it was shown to her that the animal would not do her badly and that whenever she wanted was just to say to stop it, because she would be assisted soon without needing to be fear.

During the games the therapists always asked for suggestions of other games for the disable rider, that in begin didn't suggest anything, but with passing of the sessions due to the fact of his/her relationship with the therapists and other people already to be closer and of trust, the disable rider began to expose yours ideas of music and games.

For the development of her independence the resource "cart" was used, where the guide guides the horse behind the croup of the same, doing with that the disable rider imagined that she was guiding her horse alone. Through of that resource it can be worked the whole education part as the attention and the concentration through the commands that she should use to do the horse to proceed (to order kiss), to stop (to emit with the mouth the sound: shih), and to turn on the right side (to turn the rein for this side) and left (to turn the rein on this side).

After six months using that resource, the therapists returned to the traditional technique, in other words, the guide the front, to work aspects as communication, language, maintenance of the independence, socialization and emotional aspects through of fairytale games as cottage, purchases and restaurant. In those games it was possible to observe the resistance that the a disable rider presented in taking juices, for that, in fairytale game when she played that all were at a restaurant, the disable rider order for soft drink and the others order juice that always offered to her, until that one day for imitation of one of the therapists decided to accept. With that, the therapists guided the child's mother to bring juice in the next session with the objective of motivating her to drink juices in her daily life. Like this, after the mount, it was taken for the room where the juice was distributed and tasted between the therapists and the disable rider. In the first time, the apprentice didn't want to accept for that the therapist created an educational situation in that she competed as for the speed with that the juice was taken animating her to take and to finish first.

4 - RESULTS AND DISCUSSION:

In elapsing of the sessions it was possible to observe that the disable rider won her fear mainly starting from the moment that got to ride in the horse after the phase of double mount, could be observed a considerable increase of her self-esteem and trust. In other words, in the beginning her behavior was of avoids the relation to the animal: she didn't look at it and didn't caress it. Now she is in individual riding.

"To have control on a much larger and stronger animal than the disable rider does with the self-confidence be processed, which turns into something grandiose for him. For the execution of small tasks with more advanced abilities, the trust passes to be acquired gradually." (Lermontov, p.97, 2004)

Her independence was visible, because in the beginning didn't give her opinions showing herself always introverted, in the course of time it got to demonstrate their wills and to offer suggestions of games. About her concerns of between persons relationships there was significant gets better of her communication and language worked all the time from the simple "chats" until the educational games and fairytales that managed to do with the disable rider took her conquests for her activities of daily life as feeding and between persons relationships.

To show the individual's condition regarding her communication in the beginning of her riding therapy treatment and after beginning was used the speak therapy technique of direct observation, registered in the handbooks, and for the disable rider 's evaluation a Scale of speaking therapy evaluations was developed where were observed and punctuated the following items as display the table below:

Scale of speaking therapy evaluations for Interaction, Phonological Aspects and Verbal Expressions and No Verbal.

	A- The Communicative Intention								
1	never								
2	sometimes								
3	always								
	B - Expressions no verbal: gestures, pantomimes and actions								
1	cry and grumbling without meaning								
2	cry and grumbling with meaning								
3	cry, facial grumbling, expression and actions with meaning								
	C- Oral Expression								
1	isolated words								
2	random sentences								
3	juxtaposed sentences								
	D- Speaking Aspects								
1	changes systematic articulator								
2	changes assystematic articulator								
3	without articulator changes								

Application of speaking therapy evaluations Scale for Interaction, speaking Aspects and Verbal Expressions and No Verbal.

Practicing: T.S.C Initial evaluation: Fev. 03 Final evaluation: Out. 04

	i i i i i i i i i i i i i i i i i i i	
Item Evaluated	Punctuation I	Punctuation F
Α	1	3
В	2	3
D	1	3
C	1	3



5 - CONCLUSION:

During whole the therapeutic process, was possible to observe how riding therapy contributed to the welfare and progress in the disable rider development, because the whole work was developed based on games and close to the daily ones, looking for that the disable rider generalized her "therapeutic learning" for her life.

In the case presented psychological aspects as, fear, socialization difficulty, resistance in accomplishing bonds, low self-esteem and self-confidence, especially motivated by the unbalance that the sensorial alteration causes her when mounted in the horse, they were due in it majority, turning the disable rider most confident and safe on her attitudes, prepared to face new situations in her daily one.

Besides, the physiotherapist's work in the told case was facilitated by the psychologist, because it would be impossible to stimulate the balance and to work activities with the free superior members taking into account the insecurity presented by the disable rider.

The interdisciplinary work with factors of riding therapy, horse and atmosphere, allowed that the disable rider needed to translate her experiences, desires and emotions vocally, also expressing that the symbolic game obtained results in relation to the vocal quality using intensity and appropriate intonation in the dialogical situation, eliminating the speech infantilized and whispered, besides allowing working phonetic aspects.

It was possible to observe that riding therapy as a complemental therapy is beneficial in an individual's case unable to move around inferior members, not only of that pathology as well as of another seemed, because the used strategies can be same or similar, but the objective ends if turning the same, in other words, to improve the life quality in several aspects as: psychological, physical and communicational of the suject.

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CYPHOSIS-SCOLIOSIS OBJECTIVE IMPROVEMENT IN A PATIENT WITH BRAIN PARALYSIS ON A SIX MONTH EQUINE THERAPY TREATMENT

Author: Liliana Aguirre - Argentina Co-authors: Mercedes Ruffo; Beatriz Sánchez; Marta Torrado

FUNDACION DE EQUINOTERAPIA SAN JUAN EN ARGENTINA

OBJECTIVE

Favorable evolution of an equine therapy case.

METHOLOGY

· Subject: 9 years old – female

• Diagnosis: Brain Paralysis with reduced dysparesia, with generalized development trauma with mental disability.Convulsive Syndrome, left ear deafness, near-sightedness, srtrabism, astigmatism, cortical brain regression,phycosis, autism.

• Medication: Clobazam 5 mg/day

Sodium Divalproato: 357 mg./day Risperidona: 0.5 mg/ day

Medication prescribed and controlled by the doctor in charge.

- Ethiology: Perinatal hypoxia-encephalopathy , post-natal sepsis, convulsive syndrome.
- Technique: Equine therapy Therapeutic riding

These techniques enable an interaction between a horse riding instructor and a physotherapist with a vaste experience in multiple disabilities.

3 Development: The subject is derived to this particular form of therapy in order to improve posturewise given that no such improvement took place after other several therapies in which the subject also showed severe behavioural failures: psycho affective as well as autistic disorders (front and profile sitting x-rays from 2002, pictures 1 and 2)

• By 2005 a radical improvement as regards postural controls is shown when sitting, through attended walking and in postural head and upper-torso habits (front and profile sitting x-rays from 2005)

Note: Evaluation and medical report by Dr. Beatriz Sánchez Subjective improvement is seen within 6 month of treatment whereas its objectivity is controlled bay x-rays. The tean considered for her, the pacient, the pasive equinetherapy

They decided that the right horse for her first was Chocolate. Chocolate is a horse of 1.45 meters tall, we considered it was the right high for the auxilaries of both sides of the horse to work confortable

It was also chosser for his behavior and experience in equino therapy

Are of the most important characteristic was also the walk biomechanic

We need to start this therapy a horse that doesn t make exagerated movement. When he walks to make her trust the horse and make easier yhe work of the team

The first time she came with her mather and her doctor Sanchez, two dogs, Fernet (black cillie) and Felipe (basset hound) prepared her far the first contact with the animals. She leaned how to clean and play with them as the ramp as that way she could realice that the horse wasn t that big

We ride the horse toguether untill We considered that she was ready to ride it by herself white we are watching her

We ride through places where trees, ducks, water, swars helped her to estimulate

The ground it's also very important the different nevels of the ground help the horse and the gratify s moments

In this case we warked whit different colors to make the horse turn lift and right W e chose red and yellow because those were easier for her

An the second nevel, We worked with a horse name gringo

He has a grate behavior and he is experienced AR this work

Any ways we used both horses to help her with the adaptation and change an this way she doesn t feel the lost

Her mother was present but not always working with her. When we asked her to do it she agreeded, she rides with her severd times

OBJECTIVE:

Correction postural to already improve the cephalic control that it has unstable control, correct alignment, vasculacion of pelvis, abduction of inferior members that are in internal rotation and adduction

To improve the coordination and the balance

To stimulate the sense perception

Stimulation vestibule, working in different position on the horse

Coordination oculo-motriz

Disassociation from movements

Lateralidad

Space location

To stimulate the concentration and attention

To reinforce the self-esteem

- To create vinculums
- To recreate
- To rehabilitate themselves playing

Attention and concentration

To improve the muscular tone trough walking of horse

Estereotipias

Auto agresion-heteroagresion

INFLUENCE THE HIPOTHERAPY WITH SOCIAL FUNCTION, SELF-CARE AND E MOBILITY WITH PATIENT CEREBRAL PALSY – STUDY OF CASE

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1 - INTRODUCTION

The cerebral palsy can be defined, as a persistent, even so not progressive lesion, of character motor sensory, caused by a lesion in the brain from the foetus life to childhood, of varied etiological (FISCHINGER, 1984; BROWER is ASHBY, 1991). To be classified as cerebral palsy, the lesion should happen until the first three years of life, time in that finishes the mielinização of the neurons motors (DIAMENTE is CYPEL, 1996). For being of character motor sensory, they affect of way non uniform the posture, tonus and movement, predominantly on the possible cognitive sequels (EDWARDS, 1999).

According to Styer-Acevedo (2002) to PC a disease should not be considered, but a category of deficiencies that embraces patient with no-progressive chronic disturbances of movement or posture with precocious beginning. The term PC is not totally satisfactory, because paralysis is not what is observed in most of the patients, that more commonly present paresis or they exhibit other types of disturbances. Besides, the cerebral term just suggests the cause of the cerebral hemispheres, but the responsible lesions can also attack the area mesodiencephalic, log cerebral and/or cerebellum (FURLANI, 2004). Therefore this is the most currently denomination is of Encefalopatia No-progressive Chronicle.

Being made a relationship between the language and the system postural sees him that in I begin it of the child's development the vestibular system it is covered of great importance in such integration, being considered that the first active outdoor connections are accomplished soon starting from the head control (LIMONGI, 1998).

The production of the sounds is related to the maturation of the system oral miofuncional and ace stomtognathic sytem (breathing, suction, mastication and swallowing). The articulation is a function of the communication that involves linguistic aspects, motors, organic, cognitive and you set (WERTZNER, 1999).

The communication problems found in E.C.N.P children can vary. They can be from absence of talkative attitude, going by great difficulties in the oral communication due to alterations in the structures and function related to the speech, that blocked the articulation of the sounds, words and sentences (referring to the conditions praxis), even disturbances in the language level. In this area the difficulties are felt in the syntactic semantic level and/or, where they can be found sentences with investment in the order of the elements or absence of some of the same ones, of significance lacking that consider the case where the oral

communication totally meets absent, the talkative attitude is present through gestures, signs, some little vocalizations (LIMONGI, 1996).

The hipotherapy implies obligatorily in action interdisciplinarity, in function of the nature of integration of the health and education. To the floor, the horse demands the tonic adjustment from the horseman to adapt its balance to each it moves (HADDAD et al, 2005).

The three-dimentional movement of the horse influences directly in muscles of the control postural, in the muscles of the oral capacity, in the muscles of the larynx and in the muscles of the breathing. Therefore, we have the direct action of the horse favour in the tonus adaptation, of the posture, of the sensibility, of the propriocepção and the breathing. So the production of the speech happens, it is also necessary the tonus postural adaptation, rhythm, head positioning and body, breathing control, fono-breathing coordination. (LERMONTOV, 2004).

The movement estimulated a displacement in the horseman's pelvis, with esteemed rotation of eight degrees and that is equal to the displacement suffered by the human pelvis during the march in foot (CITERIO, 1998).

The horse is the therapeutic element that it provides gain differentiated for the apprentice, for the affectivity, for the three-dimentional movement, for the context of the atmosphere and for the interdisciplinarity (CALDAS, 2003).

The atmosphere of the hipotherapy provides to the apprentice new experiences with rich situations in challenge, that comes to contribute with its development, its potentialities improvement and embracing the areas of oral motricidade, language, voice and audition (CALDAS, 2004).

The speech-therapist will benefit of the tonic fittings provided by the horse, in great gains that are evidenced in: body alignment (biomecanic), balance reactions, rectification and protection (it balances), log control and cervical, tonus adaptation, indispensable for a better operation oromotor, breathing-speak motor sensory. It is still, the performance speech-therapist doesn't limit to the physical plan. It also fits it the work involving the communication, from the widest form to the uses and functions of the language (Neves 2000, 2002).

Now, the emphasis is in the documentation and systematic observation of the child's functional acting, pointing out its spontaneous movement in the atmosphere (MANCINI, 2001). In this context, according to Tecklin (2002), the Pediatric Evaluation of the Inventory of Inabilities - PEDI (Pediatric Evaluation of Disability Inventory), it was developed to assist the needs through a valid and reliable instrument for the evaluation of the functional state in babies and small children for physiotherapists and other rehabilitation professionals due to the rigorous methodology for its development.

They are countless the factors that contribute to the extensive variability and complexity of the disturbances of the communication in the Cerebral Palsy (LIMONGI, 2003). The relationship among the alterations motor sensory found in the cerebral paralyzed children and the need of this system integrates for an appropriate cognitive development and of language (LIMONGI, 2000). The different cognitive processes, such as the visual perception, memory, attention, they depend on significance process with structure and operation modified by the language in the relationship with the language, that is to say, the therapist and with

the therapeutic resource of the so much horse in the affective aspect, symbolic activity and for the three-dimentional movement.

2 – OBJECTIVE

To verify the results obtained through the Inventory of Pediatric Evaluation of Dysfunction (PEDI) in the hipotherapy with an apprentice carrier of E.C.N.P focusing the aspects speech-therapist.

3 – MATERIALS AND METHODS

Subject: This study tells the a patient's case, G.M.C., six years, feminine sex, carrier of E.C.N.P of the type quadriplegic spastic with larger prevalence to the right, due to lesion incephalic after heart surgery for correction of conversion of great valves to the 34 days of life.

Procedure: The collection of data was accomplished in the room of evaluation of the Project Hipotherapy ESALQ-USP in three stages: initial evaluation, intervention hipotherapy during 10 months and re evaluation with the protocol Pediatric Evaluation of Disability Inventory -PEDI, being submitted to a weekly session of hipotherapy of 30 minutes. The Inventory of Pediatric Evaluation of Dysfunction was used (PEDI), to inform the child's abilities in the acting of activities and tasks of the daily in the functional areas of solemnity-care (73 items), mobility (59 items) and social function (65 items). These items are punctuated in 1, if the child is capable to carry out the functional activity in its daily routine, or 0, if the child is not capable (MANCINI et al., 2002a; MANCINI et al, 2002b and BRENNEMAN apud TECKLIN, 2002).

4 - RESULTDS AND DISCUSSION:

I square 01. Data obtained by means of the scale PEDI regarding the punctuation of the abilities functional intervention.

		Escore	Escore	Erro	Escore	Erro
		Braces	Normative	Pattern	Continuous	pattern
Abilities	Solmnity Care	19	-	-	40,4	1,8
Functional	Mobility	4	-	-	18,2	3,8
	Social Function	9	-	-	32,09	1,7

I square 02. Data obtained by means of the scale PEDI regarding the punctuation of the abilities functional powders intervention

		Escore	Escore	Erro	Escore	Erro
		Braces	Normative	Pattern	Continuous	pattern
Abilities	Solmnity Care	58	-	-	67,6	1,8
Functional	Mobility	26	-	-	47,9	2,1
	Social Function	56	-	-	66	1,7

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The results presented is hugely important in the area of solemnity care were: use of medical equipament, recipient use to drink, oral hygiene, care with the hair, cares with the nose, to wash the hands, to wash body and face, toilet task, urinary and intestinal control. In relation to the social function they were: understanding of the meaning of the word, understanding of complex sentences use of functional communication, complexity of the expressive communication, problem resolution, interactive social game, interaction with the companions, games with objects, solemnity-information and temporary orientation. In the mobility area the apprentice presented significant improvement in the transfers in the shower and locomotion in internal atmosphere.

	Intervention	Powders Intervention
Dimension A (%)	51	51
Dimension B (%)	48	56
Dimension C (%)	29	29
Dimension D (%)	11	11

It controls 01. Evaluation of the thick motive function by means of the scale GMFM before and after to 10th hipotherapy session.

Before the intervention; powders Immediately after to 10th intervention

The evaluation of the acting motor was accomplished by means of GMFM that is a standardize observation instrument and it allows to evaluate as a child accomplishes of thick motive function, being composed by 88 items, divided in five dimensions: The) to lie and to roll, B) to Sit down, C) to Crawl and to kneel, D) to Be in foot, AND) to Walk, to run and to jump. In agreement with the picture above, a gain was observed for the dimension B regarding sitting down, and others stayed the same as before and after the 1st hipotherapy session.

I square 03. Scale of evaluation Speak therapist for Interaction, Phonological Aspects and Verbal and Not Verbal Expressions.

The technical speech-therapist used for the collection of data went to the of direct observation, registered in the promptuary in the Project Hipotherapy ESALQ/USP, and for the evaluation of the apprentice was developed a Scale of speech-therapist where you/they were observed and punctuated the following items as exhibition the table below:

	A - The Communicative Intention							
1	never							
2	sometimes							
3	always							
	B - Expressions no verbal: gestures, pantomimes and actions							
1	cry and grumbling without meaning							
2	cry and grumbling with meaning							
3	cry, facial grumbling, expression and actions with meaning							

	C - Oral Expression						
1	isolated words						
2	random sentences						
3	juxtaposed sentences						
D - Speaking Aspects							
1	changes systematic articulator						
2	changes assystematic articulator						
3	without articulator changes						

Application of Evaluation Speak therapist Scale for Interaction, Phonological Aspects and Verbal and Not Verbal Expressions.

Practicant: G.M.C Initial evaluation: Febr. 04 Final evaluation: Dec. 04

Evaluation	Punctuation I	Punctuation F		
А	2	3		
В	3	3		
D	1	3		
С	1	2		

In relation the comunicative intention, verbal and not verbal expressions and verbal expression we conclude that the improvement of the endireitamento of trunk and head, proven for the GMFM, showed the horizontal line of the very important look for the interaction with the each other. The evaluation showed that all the aspects had been favored by the Hipotherapy, the language is in a constant process, in the measure that is favoured the insertion social and the functionality of the language is exerted.

In the study "Hipotherapy: A perspective for the development of the language ", was evidenced this method is completely connected with the speech therapy, besides that favouring the development of the language is also worked the phonoarticulatory organs adequacy of stomatognathic system and agencies, including the improvement of the respiratory capacity and the pneumo phonoarticulatory coordination. These factors are very important for the communication and interacting with the environment the practitioner it increases they cognitive capacity (SANTOS, 1999).

5 - CONCLUSION

The results gotten in this study had shown that the hipotherapy can be a cooperating method therapeutical in the treatment of E.C.N.P carriers favoring the development of the language and its proven social functionality quantitatively by means of the improvement in the punctuation gotten for PEDI it, by means of the GMFM improved the punctuation of the

seated position influencing the endireitamento of trunk, neutral position of head and horizontal line of the look favoring a bigger knowledge of the world and improving the interaction with its interlocutors and qualitatively by means of. Scale of evaluation elaborated for analyzes of the Verbal and Nonverbal Speak Therapist aspects for Interaction, Speaking Aspects and Expression.

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THE HORSE THERAPY SHOWING RESULTS IN PATIENTS WITH WILLIAMS SYNDROME AND SMITH-LEMLI-OPTIZ SYNDROME

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INTRODUCTION

The horse therapy is a therapeutic and educative method that uses horses inside an interdisciplinary approach, at health, education and horse hiding areas, searching the development biopsichosocial of disability people.

The horse works as the agent of gains at physical e psycho levels. This activity demands the full body's participation, contributing then to the development of the muscle strength, relax, conscious of the own body and improvement of motor coordination and balance, besides the socialization, self-confidence and education.

The therapeutic approach with genetic is multidisciplinary, considering the particularities of each syndrome. The Williams Syndrome (SW), microdeletion in 7q11.23; presents mental disability, low stature, cardiopatia and typical face, they are lovely, anxious, with difficulty in the process of virtual and hiperacusia; and have motor alteration. The Smith-Lemli-Opitz Syndrome (SLO) of recessive autossomic etiology, results of the deficiency of the 7-dehidrocolesterol redutase enzyme, that cause multiples disformation, mental disability, sidactilia of $2^{\circ}/3^{\circ}$ podolácticos and deficit of ponder-stature gains and language, sleep diseases, autistics symptoms, global motor area more alterated than the thin one.

In view of all this benefits, we choose the horse therapy to give life quality to this chosen group.

II- MATERIALS AND METHODS

There were selected two groups of patients in horse therapy a year ago: the ones with SW, which evaluation by FISH has shown 7q11.23 and two with SLO, with 7-dehidrocolesterol high doses.

All of then has passed by medical, phonotherapeutic, physiotherapeutic, psychological and pedagogical evaluation.

Ate the evaluations were evidenced: reduction of muscle tonus, precarious thick and thin motor area, cifotic posture, increase of anxious, lack of concentration, precarious balance, lack of sphincter control, no conscious of body scheme, precarious memory, speak and language alterations, inadequate behavior, difficulty of setting links and socialization. By what was concluded at the initials evaluations, was developed the followed working plans:

APPROACH FASE

- Approach between the patient and the horse
- Elimination of fear, indifference, unknown

ACTIVITIES

- Approach get to know the horse
- Learn to identify the parts of the animal's body
- Know the basics needs of the animal (feeding, cleaning and caring, etc)

DISCOVERY FASE

- Explore the animal's anatomy
- Explore the floor through the senses (it can be done with the stopped animal)

The mediator encourages the patients to control their own emotions: fear, insecurity, agressivity, passivity, agitation, and consequently, the link between the rider-horde-mediator.

ACTIVITIES

- Identify animal's body parts
- Know the equipment
- Hide and (dismounted)
- Exercises related to the posture (back position, identifying the human's body parts)

EDUCATIVE FASE

The rider get conscious that the horse is not just an object but a being that feels and reacts. The horse will have andadura ao passo, to offer the maximum of sense and motor information's.

The verbalization of the mediator is essential, as the disponibility of attention of the rider.

ACTIVITIES

- Exercises of heating and relaxing
- Breath exercises: arms, legs and back
- Arms movement separated and alternated
- More intensive contact with the horse, involving several positions on the animal's body (standing, on the knees, with eyes closed) to get a relax attitude on it.
- Concentration exercises

- Balance exercises working inferior members, getting easy the physical balance and aligning head, back and hips.
- Lateralidade getting hands to different parts of animal's body and the rider to practice concepts like: front, back, up, down, right, left, inside, out, high, low, fast, slow.
- Flexibility to sit and get up of sela, pushing legs muscle and knees articulations.
- Motor coordination and flexibility to forma a circle, eight, straight line exercises, zigue-zague, playing with balls, throwing , interaction and socialization exercises, throw ball one to another, hold a stick and memory and concentration exercises.
- Body's conscious and body's scheme
- Limits notion
- Time/space structure
- Improvement of self-confidence

RUPTURE FASE

- Accompaniment to the bay
- Retirada de arreamento
- Feeding the animal
- Caress

III RESULTS

PATIENT 1 - 06 YEARS OLD (SW)

January/2004 - present in initial evaluation: precarious thick and thin motor area, cifotic posture, lack of sphincter control, reduction of orofacial tonus, lack of concentration and poor vocabulary.

January/2005: after 29 sessions: once a week were observed that the patient has achieved sphincter control, improvement of posture because of tapping at back region, body's conscientization, great evolution on global motor area and concentration making all exercises proposal by the mediator, improvement of thin motor coordination (clamp) and vocabulary expansion.

PATIENT 2 - 11 YEARS OLD (SW)

January/2004 – present precarious global motor coordination, increase of anxious (couldn't control him/herself at waiting his time, talking all the time, repeating always the same thing, tearing clothes), no concentration.

January/2005: after 29 sessions: once a week were observed that the patient can control his/her anxious, can wait his/her time to therapy, improvement of concentration, can pay attention to proposal exercises and execute them to the end, posture and motor coordination global has also presented a great evolution, control of inadequate behavior by not tearing clothes during therapy and once in a while in classes. According to teacher's reports, the patient is now better about his/her anxious and says that the horse therapy is "cool".

PATIENT 3 - 54 YEARS OLD (SW)

January/2004: this patient presents, besides SW, psychiatric components. It was observed cifotic posture, no concentration and reduction of muscle tonus.

January/2005: after 29 sessions: once a week. It started with double riding to improve his confidence and he started interacting better with the environment. After that, at single riding, it was observed an improvement of the posture and sometimes he made some of the proposal activities, with the help of the mediator. It's also observed satisfaction when riding and sense of the environment.

PATIENT 4-13 YEARS OLD (SLO)

January/2004: presents cifotic posture, reduction of muscle tonus, precarious memory, precarious global motor area, lack of concentration and no body's conscious.

January/2005: after 32 sessions: twice a week, he/she got a great evolution at global motor area, increase of muscle tonus, more correct posture and improvement of body's conscious and memory. Because of the good evolution, the patient could leave the hipotherapy fase and is now attending to reeducation/education where is doing very well. At classes, there was an improvement of self confidence and other areas of development and interesting in horse therapy.

PATIENT 5-15 YEARS OLD (SLO)

January/2004: the patient presents lack of concentration, precarious memory and global motor area, no body's conscious, reduction of muscle tonus and cifotic posture.

January/2005: after 44 sessions: twice a week, he/she achieve a great evolution at concentration and is doing all activities proposal by the mediator, more erect posture, improvement of memory and body's conscious, increase of muscle tonus and evolution of global motor area.

Because of the good evolution, the patient could leave the hipotherapy fase and is now attending to reeducation/education, showing self confidence at activities and good results at all areas of development.

CONCLUSION

It was observed that the horse therapy was an easier agent to gain of concentration, right posture, improvement of muscle tonus, balance, memory and global motor coordination in all patients. It was a significant improvement from the initial situations. The SW group has obtained the more significant improvement at the comportamental area and oral communication while the SLO group has better evolutes at body's conscious, memory and motor area. With the horse therapy were also stimulated the self confidence, with the improvement of interpersonal relationship and life quality of the patients.

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THE EFFECT OF PSYCHOMOTOR ACTIVITIES WITH AND WITHOUT EQUINES IN CHILDREN WITH DOWN'S SYNDROME

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ABSTRACT

The objective of this research was to study the effect of psychomotor activities inserted in the horseback riding therapy routine of children with Down's Syndrome. Our hypothesis is that psychomotor activities may promote improvements in stabilization, lateralization, body awareness, and space-time structuring, especially when associated with horse. Therefore a series of psychomotor activities were arranged within the equine therapy session and adapted for two situations: on the horse and on the ground. Three groups were organized as follows: 1) psychomotor activities performed on the horse (GPO1); 2) psychomotor activities performed on the ground (GPO2); and 3) untreated control group (GPO3). Treatments were conducted for 13 sessions, once a week. For GPO1, there was a fixed protocol of 20 minutes of horse pacing and 10 minutes of free activities on the horse. The instrument used to evaluate the psychomotor conducts was the Psychomotor Scale ⁽⁶⁾. The scale was used to evaluate balance, lateralization, body awareness, and space-time structuring. The conducts were evaluated on a scale from 1 to 4. Nine subjects with ages ranging from 4 to 13 years, 7 male and 2 female were evaluated. The Kruskal-Wallis and Wilcoxon statistical tests were used for the treatment of the data. Groups GPO1 and GPO2 that received treatment presented improvements. The most important improvements between pre-test and post-test results occurred with equilibration. There were no concomitant improvements for all investigated conducts. Data suggest that introducing psychomotor development activities into the treatment of children with Down's Syndrome resulted in expressive improvements in their condition and development. GPO1 presented a better overall result in the post-test than the other groups. However, data did not statistically affirm that the presence of the horse was responsible for the subjects' improved scores. It could be justified in function of the time of experiment.

RESUMO

O objetivo desta pesquisa foi estudar o efeito da inserção de atividades psicomotoras na rotina das sessões de equoterapia de crianças com Síndrome de Down. Nossa hipótese é que as atividades psicomotoras podem promover melhorias na equilibração, lateralização, noção de corpo e estruturação espaço-temporal, principalmente quando associadas com o cavalo. Uma série de atividades psicomotoras foi organizada para ser realizada durante as sessões de equoterapia, adaptadas para duas situações, uma sobre o cavalo e outra no solo sem o animal. Os grupos foram organizados da seguinte maneira: 1) atividades psicomotoras realizadas sobre o cavalo (GPO1); 2) atividades psicomotoras realizadas no solo (GPO2); e 3) grupo controle (GPO3). Os tratamentos tiveram uma duração de 13 sessões, com freqüência de uma vez por semana. Para o GPO1 foi fixado um protocolo de 20 minutos com o cavalo

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andando ao passo e 10 minutos de atividades livres sobre o cavalo. Uma escala psicomotora ⁽⁶⁾ foi utilizada para avaliar as condutas psicomotoras. A condutas investigadas foram equilibração, lateralização, noção de corpo e estruturação espaço-temporal, com valores variando de 1 a 4 pontos. Foram avaliados nove sujeitos com idades entre 4 e 13 anos, sendo 7 do sexo masculino e 2 feminino. Para o tratamento dos resultados foram utilizados os testes de Kruskal-Wallis e Wilcoxon. Os grupos GPO1 e GPO2 que receberam tratamento apresentaram melhorias nos resultados. As mais expressivas mudanças ocorreram do pré para o pós teste com a conduta de equilibração. Não observou-se melhoras concomitantes para todas as condutas analisadas. Os resultados sugerem que a introdução de atividades psicomotoras no tratamento de crianças com Síndrome de Down resultou importantes melhorias em suas condições e desenvolvimento. O GPO1 apresentou um resultado geral melhor no pós teste do que os demais grupos. No entanto, os dados não afirmam estatisticamente que a presença do cavalo foi responsável pelas melhoras nos escores dos sujeitos. Isso poderia ser justificado em função do tempo de experimento.

INTRODUCTION

Down's syndrome is a chromosomal anomaly that presents mental delay and infantile hypotony as main deficiencies ²⁰. The body of the child with this syndrome is limp and presents difficulties in acquiring strength and adequate muscular tonus in order to maintain the several postures required in his daily life. Moreover, the presence of cognitive deficiency is a factor also associated to problems in the acquisition of motor control and in the performance of movements.

Although these factors contribute for the delay in the motor acquisition, children with Down's syndrome achieve reaching development marks but in a slower rhythm ^{15,21,22,26}, thus presenting an analogous trajectory in relation to the normal child. Although in a rhythm considered as different, the same change processes are observed; however followed by delays and with abnormal posture and movement standards. Insufficient perception and control of the own body, concentration disturbances, respiratory control incapacity, balance disturbances, deficient orientation and space-time structuring difficulties are also associated with Down's syndrome ¹⁸. The author yet emphasizes that this motor instability occurs due to the incapacity of maintaining an attitude, of concentrating and of continuing his action, indicating the need of psychomotor educative activities in order to improve the mental capacity and the acquisition of motor control.

For psychomotricity, the individual's overall and hormonal development since birth depends on the association between psychism and motility. Psychomotricity is considered as science which practice may be applied in the treatment of children with Down's syndrome for providing bases to reach objectives required by the work performed with these children and mainly to focus the development in its widest meaning, including motor, cognitive and affective development ⁵. According to the author, Psychomotricity aims at helping individuals with this syndrome to explore better their environments and to capture their stimuli more adequately and quickly with the objective of providing motor and postural improvements based on the conscious psychomotor development. Thus, motor behavior is seen as psychomotor in function of the cognitive and affective involvement in most part of the movements performed ². Authors have positively associated psychomotricity with the practice of activities involving horses, among them the horseback riding ^{1,7,10,12,27} due to the richness of stimuli that this intervention provides. Horseback riding uses the horse as work instrument based on the practice of equestrian activities and horseback riding techniques and may be considered as a set of re-educative techniques that serve to overcome sensorial, cognitive and behavioral damages. Thus, it is presented with great potential for therapeutic interventions.

The objective of the present work was to verify if a psychomotor activities program inserted in the horseback riding therapy routine of children with Down's Syndrome promotes improvements in the stabilization, lateralization, body awareness and space-time structuring conducts.

METHODOLOGY

The study group was intentionally selected, being composed of 9 children with Down's syndrome, 7 male and 2 female with ages ranging from 5 to 12 years. All subjects attended to a specific institution for people with Down's syndrome. All studied individuals were allowed by their physicians for horse riding including atlantoaxial X-Ray. The individuals presented independent gait and comprehension of orders, attended to regular schools and were not submitted to any type of therapy. The individuals presented no previous experience on horse riding or participation on horseback riding sessions. Before the beginning of the study and the consent to participate in this research, their parents were cleared about its objectives.

The participants were randomly divided into three groups: the first performed psychomotor activities on the horse (GPO1); the second performed psychomotor activities on the ground (GPO2) and the control group (GPO3), which did not receive any type of intervention.

The treatment was composed of thirteen sessions with an interval of seven days between each session. The independent variable inserted into the study was a proposal of psychomotor activities. These activities were conceived to be performed in two distinct situations: on the horse (GPO1) and on the ground (GPO2). The proposal was composed of activities including stimulation for stabilization, lateralization, body awareness, and space-time structuring conducts. For the GPO1, a fixed protocol of 20 minutes of horse pacing and 10 minutes of free activities on the horse was proposed; for GPO2, 30 minutes of psychomotor stimulation activities were performed aiming at performing the same work; however, on the ground.

The fixed protocol proposed for GPO1 was performed in sand track with two stations: one for the change of cadence and rhythm and another for the change of direction. The first 5 minutes of each session were performed with horse pacing with no other type of stimulation but the movement of the horse itself. At the following minutes, the stations were followed and the pace speed increased progressively each five minutes. At the ten final minutes, activities changed in order to become session more motivating. Didactic materials were given to develop the notion of size and shape and musical instruments (tambourine, cowbell) were used to introduce rhythm perception. Other materials (balls of different sizes, rings, gymnastic mace) were used in the adaptation of games and plays with the objective of providing the highest number of psychomotor experiences as possible. The displacement trajectories of the horse in the sand track included ring, "S" and "8"-shaped movements. A

complete military-style horse riding set, bridle with no articulations as well as safety helmets were used as equipments.

The activities developed with GPO2 occurred in the same sand track and were composed of similar stimuli as those of the GPO1. The activities performed on the horse were adapted to be performed on the ground also, including trajectories and objects used. All sessions occurred at the same day but at different timetables for both groups.

The activities were conducted at the facilities of the 1^{st} Mounted Policy Regiment of the Military Brigade. For this, a 20 x 40 m sand track was used. People responsible for the psychomotor activities received specific training in order to conduct the activities routine for both groups.

The psychomotor battery proposed by Fonseca ⁶ was used to evaluate the psychomotor conducts. Sub-tests of immobility, rectilinear support, tiptoes and standing on one foot (left and right), which composed the static balance evaluation were used for the *stabilization* conduct. Controlled gait, jump on one foot (left and right), jump forward, jump backward and jump forward with eyes closed composed the dynamic balance test. For the *lateralization* conduct, sub-tests of ocular lateral observation, preferential ear, writing and cutting simulation and a giant step simulation were applied. For the *body awareness* conduct, sub-tests applied were the kinestesic sense, left-right recognition, self-image, gestures mimicking and drawing of the body. Finally, for the fourth conduct, *space-time structuring*, organization, dynamic structure and rhythmic structure were evaluated. Each sub-test was scored from 1 (apraxic profile) to 4 (hyperapraxic profile), what generated different summation values for each conduct. For stabilization conduct, the minimum and maximum values were found between 11 and 44 points; for lateralization between 1 and 4 points; for body awareness between 5 and 20 points and for space-time structuring, between 3 and 12 points. The total psychomotor evaluation value should lie between 20 and 80 points. Sub-tests from subjects who presented no comprehension or inability to perform it were excluded from the psychomotor battery (in the lateralization conduct, sub-tests performed in the wooden beam were excluded and in the space-time structuring conduct, the topographic organization sub-test was excluded). The battery was applied by three appraisers previously trained.

Data were recorded in a spreadsheet of the Excel program. After checking, these data were transported into the SAS 8.02 program for the statistical treatment. The descriptive statistics was performed in order to obtain the mean and standard deviation of the results. The Shapiro Wilk test was used to verify the normality of the data and the Kruskal-Wallis test was used to compare groups. The pre and post-test data were compared through the Wilcoxon test. The significance level adopted was of 5%.

RESULTS

The results observed in this study, which objective was to verify if a psychomotor activities program inserted in the horseback riding therapy routine of children with Down's Syndrome promotes improvements in the stabilization, lateralization, body awareness and space-time structuring conducts, are presented in Tables 1 and 2. One observes through values presented the sum of the scores obtained in each psychomotor conduct per individual (Table 1) as well as the total sum of these scores with their means and variations (Table 2).

		PSYCHOMOTOR CONDUCT									
Group	Test	Stabili (11 -	zation 44)*	Lateral (01 -	ization 04)*	Bo aware (05 -	BodySpace-timeawarenessstructuring(05 - 20)*(03 - 12)*		• time uring 12)*	OVERALL TOTAL	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
GPO1	1	25	32	3	4	10	16	4	5	42	57
	2	15	24	4	4	8	14	3	3	30	45
	3	23	32	4	4	11	15	4	7	42	58
GPO2	1	30	33	3	4	15	16	8	8	56	61
	2	21	25	4	4	5	11	3	3	33	43
	3	14	17	4	4	6	6	3	3	27	30
GPO3	1	11	11	4	4	5	5	3	3	23	23
	2	12	16	3	3	8	8	3	3	26	30
	3	12	14	4	4	5	7	3	3	24	28

Table 1 – Sum of the individual values observed in the pre and post-tests for each psychomotor conduct.

Table 2 – Mean values and standard deviation of the pre and post-tests for each psychomotor conduct per group.

			PSYCHOMOTOR CONDUCT								
Group	Test	Stabili	zation	Lateral	ization	Bo awar	dy eness	Space- struct	·time uring	OVEI TO	RALL FAL
		x	sd	Х	sd	Х	sd	Х	sd	х	sd
GPO1	Pre	21.00	5.29	3.67	0.58	9.67	1.53	3.67	0.58	38.00	6.93
	Post	29.33	4.62	4.00	0.00	15.00	1.00	5.00	2.00	53.33	7.23
GPO2	Pre	21.67	8.02	3.67	0.58	8.67	5.51	4.67	2.89	38.67	15.31
	Post	25.00	8.00	4.00	0.00	11.00	5.00	4.67	2.89	44.67	15.57
GPO3	Pre	11.67	0.58	3.67	0.58	6.00	1.73	3.00	0.00	24.33	1.53
	Post	13.67	2.52	3.67	0.58	6.67	1.53	3.00	0.00	27.00	3.61

The comparative analysis of the pre-test results showed that the groups presented means statistically different from each other at the beginning of the study. After thirteen weeks of treatment, the results showed that both types of intervention proposed, on the horse and on the ground, were not capable of unchaining significant alterations in the psychomotor conducts.

The post-test results observed in subjects from GPO1 and GPO2 presented more expressive variations when compared to the control group. When results from groups that received treatment (GPO1 and GPO2) were observed, the values reached at the end of the experiment by group which performed activities on the horse (GPO1), in the sum of the psychomotor conducts, were considerably higher than the group which performed activities on the group which performed activities on the group which performed activities on the horse (GPO1), in the sum of the psychomotor (GPO2); however, these differences were not statistically significant. The mean difference of the number of points obtained by each group between pre and post-test scores was of 15.33 points for GPO1 against 6 points for GPO2 and 2.67 for GPO3.

The analysis performed per psychomotor conduct shows that each conduct changed differently in function of the intervention adopted. More expressive alterations were observed in body awareness and stabilization conducts. In stabilization, significant alterations were observed in rectilinear support (p<0.0446) and static balance (p<0.0484) sub-tests for groups that received treatments when compared to the control group. In the lateralization conduct, from the 9 subjects investigated, 6 presented well-defined lateralization in the pre-test, reaching maximum score for this conduct, and after the treatment period, only one individual from the control group did not present any alteration. In the space-time structuring conduct, only GPO1 presented variation between evaluations. However, these differences were not statistically significant. For the four psychomotor conducts evaluated, it was not possible identifying higher positive differences from pre-test to post-test on behalf of GPO1. For the other two groups, no alterations were observed in the scores of the space-time structuring conduct for GPO2 and GPO3 and lateralization conduct for GPO3, where scores remained unchanged between pre and post-tests. Although increments on the final means of the study were observed, none of them were statistically significant.

DISCUSSION

Children with Down's syndrome present reduction on the postural tonus as one of the main neurological deficiencies, typical of the syndrome ¹¹. Thus, intervention programs aimed at performing activities to unchain postural restorative adjustments would be contributing for balance improvements. Studies that investigate therapeutic interventions using the horse, especially the effect of the multidimensional movement that its pacing generates have presented good results, demonstrating being able to further improvements in the treatment of neuromotor disturbances or deficiencies ^{3,9,23,29}. Such improvements occur due to combinations of sensorial stimulations and motor rehabilitation components generated in all basic systems that, altogether, result in an improved sensorial and motor integration. Thus, horseback riding therapy has been indicated as a valuable therapeutic resource ¹⁴.

The main conduct that horseback riding therapy requires is balance. All psychomotor faculties are based on this conduct ⁸. The vestibular system is repeatedly demanded and stimulates connections between the semicircular canals, where the otolite ciliary cells attract the endolymph oscillations caused by the head movements. The repetition of the movement causes the re-education of the postural reflex mechanism and the notion of the position of several body segments in space ¹.

Although studies do not use the same type of test to measure balance, they have demonstrated strong implications of the horse riding therapy on this variable ^{4,13,17}. Considering that hypotony and postural control are primary problems present in individual with Down's syndrome, programs of varied stimulation activities present good results on this variable, what would explain the increase on the scores of both groups that received psychomotor intervention, especially for rectilinear support and static balance sub-tests. Higher variations on results observed for GPO1 might be a result of the differentiated stimulation proposed for this group that, besides receiving stimulation through psychomotor activities, obtained additional stimuli caused by the horse movement.

The horseback riding therapy intervention, in relation to psychomotor conducts, may promote the attainment of a well-defined lateralization ¹², improve the body awareness perception ²⁵, favour the space-time reference ²⁷ and allow a better knowledge on positions of his own body and in relation to the horse ⁷. Furthermore, it may improve the muscular tonus ^{7,8,19,23,24}, which is main basis for the psychomotricity organization ⁶.

Although differences were not statistically significant, alterations on the body awareness conduct were expected, once the child's motor organization is based on a set of references originated from the individual experience, which are elaborated and then integrated from spatial coordinates ²⁷. Thus, the practice of horseback riding allows the child the creation of new motor schemes through proprioceptive information received by joints and muscles. The easy comprehension of this model is allowed through the study of attitudes and postures, once the position of each member or body segment will be then perfectly delimitated according to three space dimensions, what is in agreement with the tri-dimensional movement of the horse ²⁸.

Considering that the space-time structuring is dependent on psychomotor conducts prior to its organizational structure ⁶, it was expected that improvements on the stabilization, lateralization and body awareness results would reflect on this conduct, what was only observed for GPO1. This result suggests that the stimulation provided by psychomotor activities alone were not sufficient to unchain alterations in this conduct in children from GPO2, what could indicate that the action promoted by the horse is a differential. The acceleration and deceleration caused by variations on the horse pace provided new space-time dimensions, stimulating some perception areas, thus requiring an improvement on the space-time structuring ²⁷.

The results obtained in this study generally point to a problem similar to those found by Pauw ¹⁶ in studies involving horseback riding therapy. The quantitative analysis of data suggests a discrepancy between the statistical results obtained and the positive results observed by the therapists, relatives and health professionals. Evidences show that GPO1 and GPO2 improved their scores from the pre-test to the post-test, and GPO1 presented the most expressive values. The reduced number of subjects for each group in this study may impair the statistical analysis of results. Anyway, the hypothesis that the use of the horse associated to a psychomotor activities program could present better results when compared to the same program without the use of the horse cannot be statistically accepted in this study.

CONCLUSION

The results observed in this study suggest that the insertion of an activities program aimed at the psychomotor development of children with Down's syndrome presents positive indicatives in the production of psychomotor alterations in relation to the conducts investigated. Although the activities performed using the horse presented higher variations of results in the post-test in relation to the other groups, these findings do not allow ratifying statistically that the horse is the responsible for such scores. Researches involving a higher number of subjects performed for a longer intervention time period should be conducted in the near future.

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TO EVALUATE THE EFFICACY OF HORSE THERAPY TREATMENT AT JOINT RIGIDITY OF INFERIORS MEMBERS AND WALKING OF PATIENT WITH PARKINSON'S DISEASE

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INTRODUCTION

Recent studies have been demonstrated that a non conventional therapy, the horse therapy, has been providing countless benefits to its practitioners (Chernget al.2004;Sterba, Rogers, France et al.2002; Winchester et al.2002;Krapivkin et al. 2001). This is a therapy that uses a horse as therapeutic and educational instrument inside an interdisciplinary approach in health, education and horse hiding areas, looking for biopsychosocial development of disability people and people with special needs (Ande Brasil, 2003). This therapeutic method demands the entire body's participation, contributing to development of muscle strength, relax, concientization of own body, motor coordination improvement and balance, besides the new ways of socializing and also improvement the self-estimate.

Parkinson disease, described by James Parkinson in 1817, is a neurodegenerative disease characterized by the progressive lost of nigrais dopaminergics neurons, brain's structure that participate of control and coordination of movements as well the maintenance of muscle tonus and posture. Cardinals signs of the disease are: trembling, especially when resting, muscle rigidity, bradcinesia and walk dysfunction and lost of posture reflex (Tapia-Nunez J, Chana-Cuevas P., 2004).

The walk pattern of the patient with Parkinson's disease is highly stereotyped, characterized by a impoverishment of moves. The patient walks in slower steps and may presents some difficulty to balance him/herself. The general posture modify: there is a predominance of flexores muscles in a way that the head remains fletido over the thorax, and the last over the belly and superiors members are kept a bit ahead and the forearm half-fletidos at the elbows. The muscle rigidity makes the patient to adopt a curved posture, like a skier. (Sullivan O, Susan B, Schmitz Thomas J, 1993).

Primary object of the study: to evaluate the horse therapy effect in Parkinson's disease patients, advanced fase.

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MATERIAL AND METHOD:

The work was done with the patient S.A.M.T., male, 66 years old, dentist retired by disability, who had Parkinson's disease diagnosised in 1988, when the "weakness" of his left arm and depression had begun. In 1998, the symptoms had increased, occurring difficulty at walking. But he had only started conventional physiotherapy in 2001, when has also starter phonotherapy and music therapy.

Currently he is having a medicine treatment using parlodel, sinemet, prolopa, mantidan, fluoxetin, seroquel, and soil physiotherapy three times a week, phonotherapy once a week and horse therapy once a week.

To data attainment, was made the analysis of walking through observation and time accounting, to which was used metric ribbon and chronometer. This aspects where evaluated always at the beginning and end of each session. It was used just one horse to all therapies with walking to I pass.

RESULTS

In july of 2005 it has begun the horse therapy attendance at the hipotherapy, with weekly sessions during 20 to 30 minutes each, according to patient's general state.

At initial evaluation it was evidenced: cifotic posture, precarious balance, joint rigidity ant superiors and inferiors members, festinado position walk using andador.

There was no difficulty at approach fase, knowledge of the place and contact with the animal. The patient at the first attendance presents difficulty in getting to the riding place and riding. During the sessions was worked heating and relaxing exercises, breath exercises, separelly and alternated arms movement, balance exercises, lateralidade, motor coordination and flexibility as like to sit and to stand over the stamp, stimulating the muscles of legs and knees articulations. Done after five therapy sessions.

The practice of this exercises objected to keep extension of movements and mobility, keep or increase thorax expansibility, improve balance reactions, reduce contractures and rigidity, reestablish functions, increasing muscle strength and resistance.

It was tried to uses a therapeutic approach set at human being in his essence and totality, emphasizing the improvement patient is his own environment, providing his the great independence possible.

After 08 sessions of horse therapy, the patient has achieved more confidence, his posture and balance has improved and it was observed improvement at body's conscientization, motor coordination, joint rigidity in inferiors members, reaching even the dorsal decubitus position over the horse. Currently, after the therapy is over, better strol, with dissociation of pelvic waist, walk closer to normal, not using andador and covers the predetermined distance in a better time.

DATE	BEFORE ATTENDANCE	AFTER ATTENDANCE	TIME OF ATTENDANCE
30/09/05	2′54′′00	3′54′′00	28′
06/10/05	0′55′′27	1′31′′03	20′
14/10/05	4′13′′43	2′55′′83	20′
21/10/05	1′59′′69	1′57′′72	20′
04/11/05	3'42''81	2'19''53	20′
13/11/05	3′33′′50	3′30′′50	20′
16/11/05	5'20''00	5'10''00	20'

The analyzed distance is 25 meters and 10 centimeters, which are the beginning of the walk to the horse until the horse, before the attendance and from apear to start point after it. The measure time was:

DISCUSSION

It was observed that the patient was constantly persisting at the proposals activities looking for improvement as also mood susentability and independence, suggesting that, the motor gain may be linked to a persistent and positive overcoming, potencializing the results. Hiding the horse produces a three-dimensional effect at the patient in vertical: up and down; and horizontal: front and back; and lateral: right and left. At each horse's step the gravity center of the patient is defletido in medium line, stimulating balance reactions that provide restauraction of gravity center of the sustentations basis. (Botelho, 1997).

According to Teixeira, 2001, balance movies and answers that the patient has to execute to keep himself over the horse are the same need in human walk. We believe that, in the present case, we obtained an improvement at balance when walking trough the horse therapy's stimulation. These benefits are also related to gravitario alignment man/horse, observing they are stand in relation to the floor. (Medeiros e Dias, 2002).

Posture instability represents one of the most incapacitante symptoms at Parkinson's disease and patients are more found to fall than the elderly people in general (Nevitt et al. 1989; Fletcher and Hirdes 2002). According to patient report, he has observed that after start horse therapy, he feels more determination, and with more initiative, and also doesn't fall as often as he used to. At inferiors members, hips, knees and ankles movements are reduced, with a generalized lack of extension in all three articulations. Thorax and pelvis movement re also reduced, resulting in reduction of steps length and reciprocal arm oscillations. The patients, characteriscal, walk in a slow and dragged march. The persistent position of the head and thorax to front, typically, dislocates the gravity center to forward, and may results a festinaçao walk pattern. So, in effort to make mobility easier when bradicinesia, Parkinson's disease patients inadvertently may substitute his initial posture reducing their ability to stay erect. (Jacobs JV et all, 2005). We believe that is the present case, the work that was done to keep himself balanced over the horse has provides a better perception of posture balance, increasing the posture to walk. The patient can also walk without the andador after the horse therapy session and for some moments, at home.

CONCLUSION

Considering the obtained results we can conclude that the horse therapy was the facility agent not only to improve the patient's walk but also interfering directly on his life quality. This is just one case of horse therapy providing benefits to as Parkinson's disease patient and, as new therapy, there are no reports at the literature about these. More studies are needed to determine if horse therapy can really improve Parkinson's disease patients walk. How it was observed an important benefit, it remains as suggestion, the evaluation of this therapy in a great number of patients with the Parkinson's disease.

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PARENT LIFE EXPERIENCE – A MEDIATING INSTRUMENT BETWEEN THE FAMILY AND RESOURCES USED IN THIS THERAPEUTIC METHOD

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INTRODUCTION

This study aims at demonstrating the importance of Parent Life Experience activity at the very beginning of the equotherapy treatment, considering that the adaptation periods are moments which cannot be under-estimated in the therapeutic processes. During these periods the basic elements of interrelationship organize themselves for further development, which will enable the therapeutic actions to come into use.

The specific characteristics of the adaptation process of the equotherapy works are related not only to our learners and knowledge of the characteristics of this new therapeutic environement (physical space, horses), but also to the careful attention given to these families who often have a nebulous idea of the method's objectives and resources.

Obviously, the initial point originates from the child's first surroundings – the family. Thus, interacting with the family, the child's first social contact, knowledge production is favoured and the mental process and cognition of the child is structured.

When the experience and knowledge that the parents have concerning their children's development are appreciated, they involve themselves with the treatment, thereby helping the therapist with information and cooperating with adequate stimulation on daily activities. This exchange of information professional/therapist, is fundamental during the process.

Thus, the family's role is a priority in this therapeutic process because they are the ones who will participate in the child's development as a biopsychosocial individual thereby favouring the bond between the professional and the child, allowing the treatment.

For good results, it is necessary that the child not only receive physical stimulation throughout the therapeutic techniques (which are necessary for development) but also attention and love from the family.

It is important to be aware of the necessity to guide these families to stimulate the children permanently, thus favouring not only their physical development but also strengthening emotional, social and cognitive ties, which are so important, so they can play their role in society.

To be in contact with reality is also to recognize that there are things we can change and others we cannot. Our job is to learn what we can change and do so. (Smith, 1985, apud Legen et al., 1993, p. 27)

EQUIPMENT AND METHOD

Parent Life Experience was developed at Centros de Atendimento da Associação Equoterapia (Equotherapy Association – Attending Centres), at the Horto Municipal de S.Vicente (S. Vicente's Municipal Garden) and Horto Portuários de Santos – SP (Santos'Port Garden) with the capacity to attend 72 learners at each one of these centres.

Once a year, an annual meeting attended by parents of those initiating a one year-long treatment (12 months), is held.

The duration of this meeting is of approximately 3 hours, where activities, such as approach and horseback riding, which are part of the routine of an equotherapy session, are given. For such activities 4 horses with different characteristics were available (breed, colour, height and temperament.

The multidisciplinary team, formed by professionals in pedagogy, physotherapy and physcology defined the criterium for the group formations. Parents were divided into 2 groups and two professionals of each area accompanied each group during the proposals. We made use of direct observation and photos to avaliate the parents' reactions.

DISCUSSION

By attending to people at the Centro de Atendimento da Associação Equoterapia, the multidisciplinary team diagnosed, by way of observation, the necessity to develop a project to draw the learners' families to the benefits that equotherapy treatment offers in the way of reabilitating and/or habilitating individuals with special necessities.

During the Parent Life Experience activity the family had the opportunity to learn about the resources available in this therapeutic method, in the fields of health, education and equestrianism used and developed during an equotherapy session. It allowed the team to explain this technical and scientific therapeutical method in various areas (psychology, physiotherapy and pedagogy).

For this meeting activities such as horse feeding, saddling, mounting and therapeutic riding were administered.

At all times, one of the main goals of the team was to establish the resources offered by each of the activities, as well as to provide a wider knowledge of this therapeutic environment. (physical space and horses).

The stable family takes on the part of offering a secure training field were the children can develop their potentialities, learn to love and associate themselves with the environment, thus building up their self-image favouring a broader insertion into the society to which they belong.

Parents' rights, according to Buscaglia:

1.Parents have the right to all the time they find necessary to overcome the enumerous confusing and painful feelings which accompany the fact that they have given birth to a handicapped child.

2. Parents have the right to precise information on medical, phychological and educational points of view concerning real conditions and future possibilities for their child.

3.Parents have the right to a clear comprehension of their personal functions regarding the attendance of their child's specific necessities.

4. Parents have the right to participate in the periodic evaluation of the therapeutic programs, and to the continuous planning of new goals which may become necessary due to time, progress and new observation which take place during the treatment.

5. Parents have the right to participate in the treatment and reabilitation activities.

6. Parents have the right to information about existing aid assistance in the community to attend their economic, intellectual and emotional necessities

7. Parents have the right to contact other parents of disabled children, to share their feelings and hopes, as well as their attitudes in facing the challenge of reabilitating a handicapped child.

5.8. Parents have the right to become better people in reference to the their condition as parents of handicapped children. (Buscaglia, 1983, apud Brito, Maria Cristina Guimarães,2000, p. 26)

ALIMENTATION:

When feeding the horses it is important to choose the horse paying attention to its correct mood as it must serve the goals that each professional intends to develop. The establishment of an affective bond is one of the greatest achievements obtained during the feeding process.







GROOMING:

Parents had the chance to realize that communication between them and the horse is not verbal. It takes place by experiencing which actions are pleasant to the animal and the accepted way of approaching it.

This acceptance and conquest is achieved by means of pleasant or unpleasant actions and sensations when exploring the animal's body or by the intensity of touch while brushing, etc.





SADDLING:

In a similar way, the horse will reciprocate the individual's action when performing the sadling. Space orientation, visual motor coordination, laterality and fine motor coordination must be present at the time. Trust between the animal and whoever saddles it, is important.



THERAPEUTIC GUIDANCE:

Parents were shown how to experience a peculiar characteristic to horses and through this relationship the horse accepts command. Though strong and imposing the horse expects the rider to show him what to do, the rider becomes the leader.

Rhythm, space orientation, decision taking and the realization that not always does one have to be the strong party to be in command, are important in this activity.

"...the horse is an animal of trust, of affection and body exchange"

RIDING:

We start this activity with a brief presentation of a study on horses and choice of the ideal horse on which to practice equotherapy, as it seems important that parents receive better information about the characteristics of the most important member in the team: THE HORSE Next, we introduce riding and security equipment used during an equotherapy session stressing that these indications are made after the goals we intend to reach and the pathology of each learner.

Therapists show the stimulus caused on the rider by the three-dimensional movement as well as the coordination of actions and riding demanded from the learner (motor, cognitive and affective action), so he can remain on horseback.

We believe that this was the moment most expected by parents, when each one, accompanied by therapists, experienced horseback riding and feelings broght on by the horse: fear, but also admiration.

The horse gives man the wish to control him first and then shares the pleasure through mutual understanding. (D.Verniére)

COMMUNICATION HORSE X HUMAN BEING SPEACH represents 7% TONE OF VOICE represents 38% BODY LANGUAGE represents 55% BODY SPEAKS LOUDER THAN VOICE







RESULTS

Results observed were: significant improvement in the family-therapist affective bond, a better commitment to treatment as well as in relation to guidance made by the multidisciplinary team during the year of therapy. It promoted a better attendance and punctuality to sessions. The most significant change was the way the parent broadened his perception regarding the child and his potentialities.

CONCLUSION

After the introduction of Parent Life Experience Activity, we were able to conclude that these meetings have given the families the chance to experience which feelings and challenges are being considered in each part of an equotherapy session, they broaden the knowledge of benefits brought on by these sessions to the handicapped, as well as the resources offered by this therapeutic environment to professionals in the areas of health and education.

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THE MENSURATION OF THE EFFECT OF EQUOTHERAPY TREATMENT IN PATIENTS WITH CEREBRAL PALSY SEQUELAE (CASE STUDY)

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ABSTRACT

This study aimed to perform a functional evaluation and the effects fo equotherapy inn a child with cerebral pasly utilizing the standar functionbal test (GMFM – gross motor evaluation). The scale applied before and after twelve weeks of treatment, and was applied twice a week for thirty minutes without any other trreatments. The patient initiated the treatment with 81% of functionality according to the GMFM scale, and upon conclusion of the period, improved by 95% within the items analyzed. The greatest evolution was perceived in the sitting function, which increased from 78,33% to 100%.

INTRODUCTION

Cerebral Palsy (CP), denominated as child non-progressive chronic encelopathy is an anatomopathologyor stationary anomaly, which acted in the CNS due to structural and functional maturation occuring in the first month of fetal life. It is characterized by the lack of motor control and by the adjustable modifications of hte muscular length sometimes presenting bone deformity. The child with CP acquires abilites and reaches stages of neuropsychomotor evolution where the functional disability is structured with time. (Diament, 1996; Shepherd, 1996).

The CNS is a precise network formed by over 100 billion neurons interconnected in systems which yield the perception of hte exterior world, fixes attention and controls the individual's actions. In this manner, whichever the behavior of the individual it is generated fromm various nerve cells, in which the neural mensuration of this behavior is subdivided into three different stages, as follows: the sensorial input, the intermediary process, and the motor output, each one of these components is mediated by a definite group of neurons and only one component many times recruits the diverse groups of parallel neurons. Therefore, a simple voluntary behavior requires various types of sensorial information both on the movement itself and the position f the various parts of the body in the spatial representation. Consequently, association areas of hte cortex, where the movement isplanned is counterfed by the sensorial information generating commands linked to anticipation, the performance is the correction of the movement (Kandel et al, 1991)

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In the past decades, physical therapy procedures have been put into practice admitting to reflexive action through the nervous pathways, thus, without exact knowledge of what it promotes in the nervous tissue.

On the other hand, in the last few years, it has been noticed that the huma cerebral cortex presents the ability to reorganize after undergoing a lesion, mainly when it occurs in the early years of life. These mechanisms are still unclear, however, in each case, the functional recovery occurs in a singular and individual manner Nirkko et al, (1991) prompting a current interpretation of the mechanisms that act in the CNS after a lesiion, to shift in such a way that the neuropasticity became one of the major scientific events in the rehabilitation of patients with cerebral lesions (Costa, 1991).

Each neuron is constantly bombarded by synaptic inputs which may be of arousal, inhibition, strong or weak, and can reinforce or cancel each other generating a sommatory mechanism of these inputs known as neuronal integration. This is where the neuron goes through a process of decision making whether to generate or not a potential action (Kandel et al, 1991).

By means of an MRI (Magnetic Resonance Imaging) study in hemiplegic CP patients, Cione et al, (1999) divided the patients into four groups, according to pathophysiology of the encephalic lesion the moment it occured, the location and the extension is as follows:

Group I - lesions occurring in the first two trimesters of gestation, resulting in complex encephalic malformations (cortical displasia, squizencephaly, heteretopy, hemimegalencephaly, arachnoidal cysts), mainly caused by proliferation and migration altered precociously with a great deal of motor dysfunction on the left side, and half presented convulsions, and 30% presented mental disability;

Group II - lesions occurring in the third trimester of gestation due to parenquimatora hemorrhage and periventricular leucomalacia, resulting in divisions of the white periventricular matter with the presence of the lower limb, and most showed normal cognitive functions without comvulsive events;

Group III – perinatal lesions caused by an infarct of a main artery, or main vein involving deep veins leading to cortical-subcortical lesions sometimes including diancephalic structures, internal capsule, talamus, and the base nucleus with relevant significance to the lesion of the putamen in the distonic forms, involving an upper limb and a slightly greater prevalence in motor disturbances to the right side, in which more than half presented cognitive disability, and 18% with seizures;

Group IV - post-natal lesions, occurring in the first three years of life by means of infarct or hemorrhage due to one traumatism or vascular problems, or because of infectious encephalitis with clinical symproms and an MRI similar to those of a hemiplegic adult.

Moreover, Cione et al, (1999) found alterations in the electroencephalogram in most patients, including those that did not present seizures. Bilateral lesions were also foudn in most patients, mainly those in Group II, and in Group III the lesions were mainly monolateral. The data suggested that the immature right hemisphere (during the gestational period) is more predisposed to lesions, whereas, during the perinatal period the vascular system of the left

hemisphere is more vulnerable, and the prognosis is less favorable the earlier the lesion occurs, and according to the occurrence of the seizures which may indicate a more diffused neurological dysfunction which interferes mostly in the ability to reorganize the impaired encephalons.

Among the treatment approaches for patients with motor sequelae generated by CP is Equotherapy. Aside from being theurapeutic, it is also an educational method, which seeks the bio-psycho-social development (Citterio, 1982).

Friedman (1994) and Bertoti (1998) utilized and showed the benefits of equotherapy in children with cerebral palsy, producing the first objective mensuration of efficacy for postural evaluation.

The Friedman test uses pre-test intervals before the treatment, the test (during the process) and the post-test after the intervention to verify the results obtained by the patient. (Vin Bertoti: Effect of Therapeutic Horseback Riding on Posture in Children with Cerebral Palsy).

It is noteworthy to highlight some of the advantages of equotherapy and the tridimensional effect produced by the horse's dorso as it walks, for it is similar to the human march.(Friedman; 1994).

The environment of the therapy, upon contact with nature provides physical and psychological gains.

The horse and its rhythmic trotting which promotes muscular relaxation also permits tonic adjustments (Satter, 1978).

One other observed aspect by Tannffkrchen (1978), was the intense manner the vestibular system is elicited stimulating the connections with the cerebellum, cerebral cortex, marrow, and the perpheric nerves important for the movement control, balance, and posture.

The method was created by the neurologist, Kaeser (1966) and it is recommended for all of the pathologies related with the CNS, however, for some it is not recommended such as: Frequent seizures, unknown syndromes, illnesses in acute progress, diminished sensitivity in the spinal region, and hip dislocation.

As in any method, it is important to evaluate the child prior to the treatment and be rerferenced by a physician or physical therapist to avoid any unpleasant event.

Aside fromm the aspects mentioned, Gibbon (1998), explored the effects of Equotherapy utlizing a GMFM (Russel, 1993), and found a decrease and waste od energy in themarch, and it enhances the gross motor skills in children with cerebreal palsy.

The evaluation was comprised of 11 children with impairments of spastic diplagia ranging from 2 to 9 years of age, training twice a week in a period of ten weeks. The outcome was positive, chiefly in the posture, waist dissociation and mobility, general improvement in ability, march and balance.

OBJECTIVES

This research had the overall objectives of:

- To know and broaden knowledge about Equotherapy;
- To contribute to more researches
- To demonstrate the efficacy of Equotherapy in patients impaired by spastic hemiparesis, proved by the GMFM scale (Gross Motor Function Measurement).

GMFM is an instrument of standard observation used in clinical practice and in research. It measures the shifts that occur with time, in the gross motor functions of the children with CP.

SPECIFIC OBJECTIVE

To evaluate the efficacy of the treatment with children suffering from CP, impaired by spastic hemiparesis, the right side is measured by the scale (Russel, 1993).

METHODOLOGY

1.Background and characteristics of the patient MS, three years and three months old, male gender, diagnosed with CP confirmed by MRI, lesion in the corona radiated in the left hemisphere, impairment of mild spastic hemiparesis on the right side.

Delivered through natural birth without apgar 9 and 10 complications, according to the mother's information.

In the clinical evolution, the patient appeared to have taquipnea and was taken to an incubator. On the ninth day of life, the child underwent lung surgery due to a congenital cyst. By his tenth year of life, the family perceived a deficit in his development.

At 16 months, the mother sought after physical therapy treatment, for MS suffered constant falls during the marching period, and presented a hemibody unbalance. The child was then referenced to a neurologist who performed an MRI and a scanogram.

Scanogram: the right leg was shortened by 1,5 with relation to the left leg.

A conventional physical therapeutic treatment was applied twice a week for 30 minutes during 12 months. After an interval of 4 months the conventional treatment was interrupted and the mother sought after Equotherapeutic treatment.

PROCEDURES

As the treatment was applied, the clinical event was of right hemibody unbalance, mild hipotrophy and spasticity for the right side, a decrease in the dynamic balance and of the waist dissociation, difficulty to perform postural shifts, decrease in the movement amplitude of the right limbs, deficit in the corporeal scheme, mild negligence of the right hemibody.

The evaluation stemmed from that and the objectives are outlined as follows:

- To improve the corporeal scheme
- To gain balance in the sitting posture, standing, and in gait position

- To perform better postural shifts facilitating the tonic adjustments
- To gain active movement amplitude in all of the right hemibody
- Too improve the coordination and gross motor

The study case of the patient MS, began with the initial conventional evaluation which presented the following data:

- hemibody unbalance
- mild right spasticity hypotrophy
- decrease in the dynamic balance
- decrease in the waist dissociation
- difficulties to perform postural shifts
- decrease in the movement amplitude of the right hemibody
- deficit of the corporeal scheme
- mild negligence of the right hemibody

The evaluation was performed, and from that the following objectives were outlined:

- enhancement in the corporeal scheme
- gain in the balance of the sitting posture, standing and in gait position
- performance of better postural shifts, facilitating the bone adjustments
- gain of the active movement amplitude in all of the right hemibody
- improvement of the scapular and pelvic wais dissociations
- improvement of the gross motor

Application and Implementation of the Equotherapy Treatment

Sessions of 30 minutes were performed with marching rythms at pace to improve tonus.

Occasionaly, the patient rode accompanied by the therapist, and other times the patient rode alone with the therapist on the ground, supporting and applying physical therapy techniques.

At the end of twelve weeks, the GMFM scale was once again applied.

The results obtained are shown Fig- 11 and Fig II 1.

Fig 1 – Example of some of the positions utilized.



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DIMENSION	CALCULATIONS IN %		AREA AIM %	
	Initial	After 12 Months	Initial	After 12 Months
A) Lying down	42 x 100 51	41 x 100 51	82,3%	100%
Rolling over				
B) Sitting	47 x 100 60	60 x 100 60	78,33%	100%
C) Crawling Kneeling	38 x 100 51	40 x 100 51	90,47%	95,2%
D) Standing	28 x 100 369	35 x 100 39	71,79%	89,7%
E) Walkingr / Running and Jumping	′59 x 100 72	ó4 x 100 72	71,79%	89,7%

Fig 11 – Encore calculation of the GMFM scale before and after the treatment.

Fig. 11I - Demonstrative graph of the treatment efficacy



MATERIAL

This patient underwent evaluation with the GMFM scale. The GMFM scale (Russel, 1993) is an instrument of standardized observation, created to mensurate the changes that occur with time in the gross motor function in children with CP, assessing how much of an item each child was able to perform.

The GMFM consists of 88 items, which were clustered in 5 different dimensions of the gross motor function: a) lying down, and rolling over; b) sitting; c) crawling and kneeling; d) standing up; e) walking and jumping.

RESULTS

The results obtained by applying the GMFM scale (Table 1), demonstrates the patient's greater performance in: motor ability and gross motor function.

The bar graph (Fig 11) illustrates in percentage the efficacy of the Equotherapy treatment, comparing the data before and after the treatment.

The objectives outlined prior to the implementation of the treatment were fully met.

Accounts of the child's mother informed that the evolution was positive in the following items: sitting, standing, running, and jumping.

Currently, the patient rides bicycle in uneven terrain, does not suffer constant falls, does not present difficulty to run, has no negligence in the right hemibody, as well as excellent balance evolution.

DISCUSSION

The results of this study provided new information about the effects produced in the Equotherapy treatment, such as:

- - The gross motor function, which changes, with time; the GMFM, an instrument of standardized observation is adequate to evaluate children with CP. In this case, particularly, it quantified the evolution obtained after the equotherapy intervention.
- - Applying the GMFM scale, how much of an item each child is able to perform, can be evaluated. There are 88 items clustered in 5 different dimensions, which portrays the improvement after de established time of intervention.
- - The health professionals in clinical practice and research, aiding in the decisions about adequate therapeutic procedures for children with similar characteristics to the patient here studied, may utilize the GMFM scale

The use of the standardized GMFM evaluation has great advantage, for it allows the comparison of the data among the clients and a normative group, amidst different moments of the client, the client, and the published results, among others.

Since these are functional evaluations, these instruments allow the therapist to identify the impact of the proposed actions and their performance in order to reduce the functional deficit.

As Mandich et al, point out (2002), mensuration is essential to research and clinical practice, and the more precise and appropriate the evaluations, the more sensitive the research will be, and the more relevant and individualized the needs of the clients will be to the proposed interventions.

CONCLUSION

Equotherapy was efficient for this patient, as shown in the results presented after the application of the GMFM scale, and which was a reliable evaluation of the effects after the intervention of the equotherapeutic treatment.

INTRODUCING AN EQUOTERAPY PROJECT: A VIEW OF ITS PSYCHOLOGICAL WORK

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ABSTRACT

In May of 2004, a project of Therapeutic Riding was implanted in the Franca Riding Society. The present work objectified to disclose the benefits of the Therapeutic Riding from the psychological point of view. The project looked for to take care of to children and adolescents of the educational municipal net, for being presenting problems in the behavior and/or learning. The sessions of Therapeutic Riding had been carried through a time in the week, with duration of 40 minutes, for each pair of practitioners. The period where the Therapeutic Riding occurred, was from May to December of 2004. First it was done an interview of Anamnese with the parents became, and after that, the practitioners had been interviewed and observed, objectifying to have a bigger understanding of the same ones. The interview was made of opened form, with the use of the free drawing. With the results reached through the Therapeutic Riding, it could be noticed that the implantation of this project was carried through successfully. We could disclose the benefits occurred in some aspects, mainly in the psychological one.

Word-key: implantation; Therapeutic Riding; learning; behavior; psychology.

RESUMO

Em Maio de 2004, foi implantado um projeto de Equoterapia na Sociedade Hípica de Franca. O presente trabalho objetivou revelar os benefícios da Equoterapia a partir do ponto de vista psicológico. O projeto procurou atender crianças e adolescentes da rede municipal de ensino, por estarem apresentando problemas no comportamento e/ou aprendizagem. As sessões de Equoterapia foram realizadas uma vez na semana, com duração de 40minutos, para cada dupla de praticantes. O período em que ocorreu a Equoterapia, foi de Maio a Dezembro de 2004. Primeiramente fez-se uma entrevista de Anamnese com os pais, e em seguida, os praticantes foram entrevistados e observados, objetivando ter uma maior compreensão dos mesmos. A entrevista foi feita de forma aberta, com a utilização do desenho livre. Com os resultados alcançados através da Equoterapia, pôde-se notar que a implantação deste projeto foi realizada com sucesso. Pudemos revelar os benefícios ocorridos em vários aspectos, principalmente no psicológico.

Palavras-chave: implantação; equoterapia; aprendizagem; comportamento; psicologia.

INTRODUCTION

The practice of the riding for 11 years and the conclusion of the Psychology Course in the Franca University in 2005, made me possible to believe the importance of the implantation

of a Therapeutic Riding project in the city, that could unite theoretical and practical knowledge of differentiated form. With this, interested me in carrying through the Basic Course of Therapeutic Riding, as well as the Advanced course, in the city of Brasilia.

In accordance with the National Association of Therapeutic Riding ANDE/BRASIL, the Therapeutic Riding word, come of the Latin "EQUO", that is *caballus* is species, or either, means horse. The "THERAPY" comes of the greek *Therapia*, part of the area of the medicine that deals with the application of technician-scientific knowledge in the field of the rehabilitation and re-education.

The Therapeutic Riding works the individual as a whole, that is, in the biological, emotional and social forms. The horse uses itself as rehabilitee instrument, searching the whitewashing of the practitioner (name given to the Therapeutic Riding patient) of integral form. Therefore, it uses the horse as promotional agent of physical, psychological and educational profits (BITAR et al., 2004). It is developed to the outdoors, where the individual will be with the nature, thus providing the execution of physical exercises of recovery and integration, completing the traditional therapies in clinics and doctor's offices.

It must be standed out that the riding environment must follow specific norms of the ANDE-BRASIL, are of structural qualification, as well as of order of shelter of the practitioner. In accordance with Rosa (2002), as in the riding environment, the practitioner is the center of the attentions, is basic to establish knowledge, techniques, strategies, procedures to receive it with affection, respect, understanding and security.

It is important to consider that the Therapeutic Riding horse must be selected and be trained by the adequate professional. To analyze the behavior of the animal to leave of this knowledge allows to find in its handling and training, the causes and solutions for the problems. However, the horse cannot only be considered an instrument, object, but also one to be alive that possess instincts, behaviors, consequences and necessities (ROSA, 2002).

In this therapy, Psychology does not carry through what it's used to call "classic" psychotherapy, or either, in the Therapeutic Riding has greater directive of the work, this because the environment where if it develops possess varied stimulations, such as the physical space, the preprogrammed activities, the horse, the therapists and the companions of the practitioner.

The Therapeutic Riding is based on a transference and triangular relation between therapistpractitioner-horse, what it will be able to make possible to the individual the access between its imaginary world and the reality. At the same time, the horse uses a function of intermediary between intrapsychic world of the practitioner, made up of desires, ghosts, anguishes, and the external world, occupying the playful space of practitioner (LALLERY, 1988; HERZOG, 1989 apud ARLAQUE et al., 1997).

In view of the importance of the Therapeutic Riding and that Franca city hadn't had such service; it became fullfilled a project for the implantation. The objective, therefore, of this work is to present this implantation, under the point of view of the Psychologist.

The search for the attendance in this implanted service, appeared, for the fact of children and adolescents of the municipal net of education, to be facing problems in the learning

and/or the behavior. In this way, the teachers of these schools had directed the pupils, with intention to improve these aspects, since they met deficit.

While participating in riding competitions in some cities, I could witness sessions of Therapeutic Riding with carrying people of special necessities. I had the chance to talk with some professionals who work in the area, and perceived that the results are really sufficiently significant, in all the aspects. In this way, I passed to be more interested each time for the area, and being thus I arrived to know several other places that this type of therapy was developed, besides mainly carrying through some courses in riding and in Therapeutic Riding. Of the psychological point of view, the Therapeutic Riding has for objective to follow and to guide the practitioners and its familiar ones. E by means of playful instruments, as games, tricks, transposition of situations, dialogues, the professional assists in the elaboration of emotional aspects, conflicts and situations. In the Therapeutic Riding, the psychologist carries through psychological evaluations with the family and, mainly, with the practitioner, to have a bigger understanding of the case. Moreover, he assists in the approach of the practitioner with the animal, what he is crucial for the development of the treatment. The psychologist helps in would mount, that he occurs from the moment where if establishes an affective bond between the individual and the horse, thus finding, confidence to mount. However, when it has difficulty in mounting the animal, the maternity process is carried through, that is, therapeutic the sum together with the practitioner, objectifying to supply bigger security to it. Of this form, the function of the psychologist is to directly follow each practitioner, during the process of approach and separation of the animal (MASIERO, 2004). Thus, it was noticed the importance of this type of work offered to the children and adolescents who present problems or difficulties.

MATERIALS AND METHODS

In August of 2003, the "Education for the Riding" project functioned in the SRF, that it had for objective to teach to the children and the adolescents of the municipal net of education, the basic beddings of the riding. From May of 2004, perceiving the necessity of the pupils in more having an integrated accompaniment on the part of other professionals, also of Psychology, the Therapeutic Riding project was implanted in the place.

The Therapeutic Riding was implanted with psychological bases, having in the team a physiotherapist, a riding instructor and a psychologist. Of the eleven practitioners who had participated of the project, they had been observed and analyzed during eight months, four of them, being three adolescents of 12 years, and a child of 6 years, all of the masculine sex. Only four pupils had been analyzed only, had to the fact to have been the first ones to submit to the treatment.

In this project, the Franca Riding Society, yielded the animals thus keeping the costs of stay and feeding, and the Municipal Hall of the city of Franca, through the Education Committee, yielded the transport of the pupil and the companion. Valley to stand out that the implantation idea left of a total voluntary work, on the part of all the team.

The pupils had been directed by the teachers of the municipal schools, for being with problems of learning and/or behavior.

Initially, an interview of anamnese with the responsible parents was carried through, having average duration of 40 minutes.

In the evaluation with the practitioners, rapport first was established and after that it was asked for that they carried through the free drawing. The evaluation had average duration of 30 minutes.

The Therapeutic Riding was developed a time in the week, with duration of 40 minutes for each pair of practitioners.

In that it says respect to the lacks, it was stipulated each pupil who, would not have allowance without justification, allowing then, only three lacks.

The materials used for the execution of this therapeutical practice had been two horses, equipment special of would mount, as helmet, uniform, blanket and head protection, beyond a sand track of 30m x 20m. It were available a room for the accomplishment of evaluations, an office, a room for reception, papers, pens, cards of evaluation and computer.

It was also used, wax balls, chalk, papers, rings, cubes, beacons, poles, anvils, among others material and pedagogical games. Upon the materials of hygiene of the animal, one used brushs, combs, xampus, scrapers, cleaner of hoof.

In the beginning of the December month, a meeting with the responsible ones of the practitioners was carried through, to evaluate the performance and the progress of the same ones during the period that had practiced the Therapeutic Riding.

In the end of the analyses, it was made the evaluations of the registers, the protocols, photos, for the final conclusions of the work.

QUARREL OF THE RESULTS

The proposal of implantation of the Therapeutic Riding project in Franca appeared from the moment where the necessity of the pupils of the municipal net of education could be observed, to not only have a accompaniment of the riding instructor, as also of the psychologist and the physiotherapist. It could be perceived that the practitioners, for facing difficulties in the school and, also, for having behavior problems, the work of the Therapeutic Riding revealed sufficiently effective.

The act to ride in a tame animal, however of high port, makes possible the practitioner to experience feelings of independence, freedom and capacity, thus contributing for the development of the affectivity, self-esteem, the organization of the corporal project, responsibility, attention, concentration, memory, creativity, socialization, among others. For its size, the horse imposes respect and limits, without becoming involved itself emotionally, thus facilitating the acceptance of security rules and disciplines. Therefore, it joins at the same time, the qualities of a therapist, an educator and a motivation animal (ROSA, 2002). It is important to think that Psychology, comes extending each time plus its field of performance, in order to create resources for the health and the welfare of the individual. It is of extreme importance to increase the diversity of therapeutical resources, therefore, for

way of these, we will create conditions for the growth and the life. The intention to implant the Therapeutic Riding in the city of Franca looked for to disclose the results from the psychological point of view, thus showing, plus a modality of work for the professional of Psychology.

When we question on the performance of the Psychologist, generally we think about a treatment that occurs individually, or either, the therapeutical relation is exerted in its majority between patient and therapist. In the Therapeutic Riding, the attendance occurs in way to interdisciplinary, that is, has great partnership between professionals of the areas of the health, education and riding that are involved in the treatment of the practitioner. To work in an interdisciplinary manner is a very rich process; therefore we can change our knowledge with professionals of other areas. In this way, we have the chance to know the individual as a whole and not broken up.

Fazenda (1994), affirms that the interdisciplinary is a natural requirement of sciences, in the direction of one better understanding of the reality that they in make them to know. It is a question that has left of the investigations, the dialogue, the exchange of information, the humility, at last, of the reciprocity.

The work developed in the Franca Riding Society occurred of an interdisciplinary form, thus having, a partnership between the involved members, as the riding instructor, the physiotherapist and the psychologist.

The interview carried through with the practitioners occurred of opened form, with the use of the free drawing. Arno Stern (apud PILLAR, 1996) affirms that, the child when drawing, does not produce souvenirs visual, but translates sensations and thoughts clearly. The drawing is, therefore, the expression of that the child feels and thinks, that is, is a mirror, a representative image of same it.

During the eight months of therapeutic riding activities, it could be observed that, the practitioners had gotten in such a way resulted significant in the learning, how much in the behavior.

In that what it says respect to the learning, it was observed that, when carrying through activities of passage with poles, numbers and letters, they had gotten a significant improvement in the attention, concentration and in the memory. Through the pedagogical games, improvement in the reasoning, the acceptance of rules and losses could be noticed. In relation to the behavior, it was observed a progress in the aspects of the communication, socialization, fear, limits, discipline and the responsibility, by means of other activities and games, beyond the contact and manuscript of the animal, during the sessions.

In accordance with FONSECA (apud MENDES, 2004), the Therapeutic Riding introduces in the context of the learning, over all when it is about children who present difficulties in the areas of the writing, mathematics, reading, physical, emotional or social. The attention, concentration and memory, also already are worked in this therapy, therefore it is necessary that the practitioner keeps the intent attention during the thirty minutes where is developed the session. This is a sufficiently important factor for the good performance of the pupil in the school; therefore the attention is the base of the learning. The individual, being attentive, consequently will select what really it wants to learn and to keep in its memory to use at other moments. It can be said that the therapy is initiated at the moment where the practitioner enters in contact with the animal. At a first moment, the horse represents for the individual a different situation, with which the practitioner will have that to know how to deal, learning the correct form to interact, to mount and to command it.

In what it says respect to the parents of the practitioners, it could be noticed that it had a great interest on the part of the same ones. They had had the chance to follow the evolution of its children during the attendance. In the finishing meeting, it was possible to perceive, that the mothers had been contented with the progress of its children, even so had other aspects to be reached. The context of the meeting also contributed mothers to talk each other and to reflect on its difficulties, doubts, fears, anguishes, feelings of guilt about their children.

In accordance with Madureira and Souza (2001, p. 6), "the necessity of orientation and psychological accompaniment to the parents of Therapeutic Riding practitioners, are as important as the cares technician". The family brings with itself, expectations for a new attendance, improvements, perspectives, feelings of guilt, unreliability, fear, anxiety, uncertainty, among others.

The valuation of the family assists in the work with the practitioner, thus being able, to carry through a work in set with the parents, in order to guide them in referring behaviors to personal and familiar history, favoring a change in its perceptions and values of its realities. At last, to understand the Therapeutic Riding in its totality is task of all the involved professionals. The day-by-day riding work one is impregnated of infinite searches. The answers to the doubts also are complex and challenging. All this effort has a reason, indescribable wonderful, the practitioner (ROSA, 2002).

CONCLUSION

With the implantation of the Therapeutic Riding in the city of Franca, it was verified through the results, that the practitioners had been influenced by the therapeutic riding attendance, thus acquiring, significant improvements, mainly in the psychological aspects.

It was possible to perceive, that the implantation of this service, really was of great value. It is important to stand out that, as much the professionals as the parents and practitioners had believed the treatment, thus looking for taking it with tenacity and satisfaction.

It can be considered that the Therapeutic Riding is an area in construction, and the passage of the stages of this construction is sufficiently complex.

With the discovery of the benefits brought to the human being through this therapy, it was perceived necessity in divulging this new therapeutical modality, so that other professionals and people can use of this new method. Although the horse is a resource, in which almost all the people have proximity and access, still does not have conscience of the benefits that this animal can provide.

I can say that my experience in working with the Therapeutic Riding was very important in such a way for my life, how much for my profession. Although it is still new a therapeutical

method, they come providing great advances in the psychological, physical, learning and social aspects.

During these ten years practicing the riding, and has little time acting with the Therapeutic Riding, I perceived that the horse is really an animal that benefits to all the people, being them with special necessities or not.

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THE IMPORTANCE OF THE ANALYSIS BIOMECHANICS OF THE PATTERNS FOR THE HORSES'S THERAPEUTIC RIDING.

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ABSTRACT

The hippotherapy is an educational and therapeutic approach that utilizes the horse inside a multidisciplinary boarding in the areas of health, education and horseback riding, seeking the development biopsychosocial of deficiency bearers persons and or special needs. The utilization of the measures of the diverse anatomical part of the animal as objective criterion of evaluation of the conformation has long history. Neither all of the angles have to same action and effect. Therefore, the aim of this study is like analyzes biomechanics to angles of the pasterns and its importance for the hippotherapy. It was utilized 5 horses (1 female and 4 male). The procedures adopted were: measure and determining the angle of the pasterns. The values of the angles of the pasterns were of 52 to 67° (±5,7) for posterior left, 50 to 68° (±7,3) for posterior right, 51 to 70° (±8,5) for anterior left and 55 to 73° (±7,5) for posterior right. According to angles of the pasterns is established for which the kind of handling is efficient the horse. At present does not have a classification of the horse for the hippotherapy regarding the angle of the pasterns, so the present study then reveals the importance of the relation of the handling with the angle of the pasterns.

Key-words: angle of the pastern, biomechanics, hippotherapy.

INTRODUCTION

The hippotherapy is an educational and therapeutic approach that utilizes the horse inside an multidisciplinary boarding in the areas of health, education and horseback riding, seeking the development biopsychosocial of deficiency bearers persons and or special needs [1]. When the man and the horse are carrying through tasks together, if establish in an only biological unit form a net of neurophysiology cooperation between both. This interaction enters the nervous systems of the *Homo* and of the *Equus* it occurs, in the diverse equestrian modalities, in different degrees, and this variation determines the difficulty and the quality of the riding. Can affirm that the riding is a miracle of biological coincidences that, to first sight, common-sense would judge impossible to happen - this because a miracle would only allow that two beings programmed for the nature for the accomplishment of so different vital tasks could join its complex physiological resources to carry through one same task and with the high degree of efficiency verified in some equestrian modalities [2].

Some coincidences also meet in the conformation of the horse that favors the adjustment with the morphology of the man. A back with the adjusted width *Homo* to hug with the legs, a place for the knight to locate itself on the back, in the end of withers, ideal for the

alignment of its center of gravity with the one of the horse. The relatively inflexible body of the *Equus caballus* is, however, one of the main elements to favor the riding. If the horse had a flexible back as of a cat, it would be impossible to be equitation. If the skin it was as of the dog, also. The psychomotor coincidences also are notables. If the horse was carnivorous and had a nervous system with the fast consequences of a cat it would be impossible to be mounted. The coincidence of temperaments is another factor that allows the neurophysiologic fusing of the set. The great cast of natural movements of the horse entirely is used in the modern and total administrable riding for the man trained for the riding. In the psychological aspect the similarities necessary also exist to complete the miracle of the riding. Feelings as the fear, the pleasure, the confidence, the curiosity and the determination are part of the psychology in such a way of the *Homo* how much of the *Equus* and also they are responsible for the success of the psychoneurophysiologic fusing of the riding. E, perhaps, magnetic fields and other "still unknown electric waves" for science can also be responsible for the synchronism of movements and the simultaneous sense of direction and speed verified in the great equestrian sets [2, 3].

The riding of high performance is probably one of the more complex biological technologies already dominated by the man. The capacity to interact with the complex nervous system of the horse that produces a process of feedback between the partners, demands of a rider instantaneous reflected answers to the incessant consequences produced by the horse. To manage the actions of a structuralized brain to mobilize an organism many times more powerful of what of the man, is an enormous challenge for the 10 billion nervous cells that compose the cerebral trunk, the cerebellum and the brain of the *Homo sapiens*. Happily, the neuroscience already starts in supplying given them revealing to analyze the principles of the riding [2, 3].

The joint of the horse is a wonder of biological engineering, considering the enormous pressures exerted for the skeleton of the equine in movement (Figure 1). The involved bones can inside slide without any friction of this structure the effect of the use of the horse under extreme conditions, bad floor, defects of conformation or of horseshoe they can activate the deterioration of the cartilage. It can occur in any joint, but preferential they reach the joints of great amplitude of movement as billets and stifle and depend on the demanded work of this horse [4, 5, 6].



Figure 1: A: representation of the skeleton of a horse. B: representation of the horse angles.

The utilization of the measures of the diverse anatomical part of the animal as objective criterion of evaluation of the conformation has long history. Neither all of the angles have to same action and effect [5].

One of the factors most important of being analyzed is pastern (quarterly), sudden region between the billet and the crown. Base: 1° phalanx and part of 2° phalanx (Figure 2). The pastern anterior wider shorter and more is inclined than the posterior one. Voluminous, it dries, of average length, flexible and directed well. Being strong, it indicates good constitution and resistance; when it dries discloses nobility. In the horse of race and the marchador, pastern is long, in the trot and in the draft animal horse she is short. In this last case it is strong, but little flexible, with lesser cushioning action during the courses. In 10 in case that it is flexible, however it imposes the tendons if to relax. The pastern of average length, in general is the most favorable in all services. The seen region of front does not have to show lateral shunting lines; profile sight presents changeable inclination, but always it must be parallel to the clamp of the hoof. The flexibility of pastern increases with its inclination [7].



Figure 2: Correct position to measure the angles of pastern (quarterly).

It knows herself that in case of an spastic must decrease the tonus of the patient, in this way give preference for horses with pasterns less angles providing a bigger comfort and relaxation to the patient and smaller stress in the articulations of the members of the horse. In case of the hypotonic must be increased the stimuli and reactions of equilibrium for the patient seek a bigger muscular activation, like this increasing its tonus. Therefore horses with angles bigger of pasterns, in that the patient possessed bigger difficulty of be balanced during the horseback riding [1,8].

In the hippoterapy the professional has that knows to identify some important factors for obtain the result expected with the patient, some important factors are: rhythm of the pace, speed, width of the pasts and to angles of the pasterns [1]. Therefore, the aim of this study is like analyzes biomechanics to angles of the pasterns and its importance for the hippotherapy.

MATERIALS AND METHOD

The study was carried out in August of 2005, in the *"Centro de Equitação Terapêutica Passo a Passo – Barbacena/MG"*. They were utilized 5 equines (1 female and 4 males), of peculiar

lineages. The procedures adopted were: measure the hoof (tweezers-heel) with the metric tape (Sanny), the diameter of the proximal phalanx (Paquímero-Sanny), being important these measures for establish the positioning of the goniometry. The fulcrum was put in the half of the size of the hoof, to haste sets close to the ground and to movable passing for the half of the proximal phalanx, determining like this the angle of the pasterns. The measures were obtained utilizing itself a goniometry (Carci). The animals were measured positioned in station forced, about floor of cement, less irregular possible and without declivity.

RESULTS

The values minimum and maximum of the angles of the pastern had been of: 52 67° (\pm 5,7) for posterior left, 50 68° (\pm 7,3) for posterior right, 51 70° (\pm 8,5) for anterior left and 55 73° (\pm 7,5) for anterior right.



Figure 3 represents the dispersion of each horse in relation to the angles of its pastern.

Figure 3: Each horse and its values of angle in relation to each pastern. Being 1 for anterior right, 2 for anterior left, 3 for posterior right and 4 for posterior left.



The Figure 4 presents the averages of the angles of pastern and Standard Deviation.

Figure 4. It presents the averages and the Standard Deviation of the angles of pastern of all the horses.

DISCUSSION

In the two Arab horses they had been identified pastern more angles and so great medium, in the Room of Mile with English pastern more are angles than the Arabs and of bigger length, in these three first horses could be indicated for the treatment of hypotonic patients in relation pastern. In the Brazilian of horse-racing pastern less is angles and of lesser lengths as well as in the Mangalarga Marchador. In these two last horses could be indicated for the treatment, spastics' patients [1, 3, 8, 9, 10, 11].

The data demonstrate that it has a difference enters the angles of pastern in one same horse, of the five analyzed horses: one presents more uniform the angles - horse 5, horse 4 presents lesser angles in pastern front while the posterior greater and horses 1,2 and 3 in contrast are found in horse 4 (Figure 3).

The average greater had presented in pastern previous (front), and the minors in the posterior ones (back) (Figure 4).

The improvement of the balance, the tonic adjustment, the corporal alignment and the motor performance are the main objectives of the treatment with hippotherapy, diverse factors contributive to also reach these objectives the angle of pastern [12, 13, 3, 5, 8].

As the angle of pastern is established for which the type of treatment is efficient the horse [1].

The angles of pastern are sufficiently variable, where some internal and external factors can influence in its angles as: deformities to articulate, badly well-taken care of traumas, hooves, badly diverse horseshoe or hoof and other factors. In such a way the horse of hippotherapy has that to be very well well-taken care of; therefore this is the main therapist of the treatment where all the result will depend on its correct and harmonic movement [1].

CONCLUSION

At present does not have a classification of the horse for the hippotherapy regarding the angle of the pasterns, therefore it does not want to say that other horses of the same race will have the same joined measures that the horses of this research, and also the choice of a proper horse for each type of treatment does not depend only on the choice on pastern and yes on some morphologic factors that the horse composes, as: height, length, width, promos, biomechanics of the movement, speed of the movement, width of the passed ones, as well as its rhythm and cadence. The present study then it discloses to the importance of the relation of the treatment of the patients and its objectives in accordance with to reach the angle of pastern. For that reason the importance to have a qualified professional to choose the proper horse for the hippotherapy in the hour to determine a treatment plan.

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HIPPOTHERAPY, AN EXCELLENT OPPORTUNITY FOR MOTOR LEARNING: A DISCUSSION OF KEY NEURO-MOTOR AND PSYCHOLOGICAL FACTORS

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ABSTRACT:

The authors recently conducted a qualitative UK and German study of the effects of hippotherapy from the perspective of people with cerebral palsy. This revealed that all participants experienced hippotherapy to be more effective than conventional physiotherapy. Improvements were reported at the impairment (e.g. muscle tone), activity / function (ability to accomplish certain motor tasks) and participation (ability to participate in normal activities) level.

It was clear that patients had developed motor skills, which they had not possessed before, shortly after they had started hippotherapy. This was although they had received conventional physiotherapy for years.

Firmly based on scientific research in the fields of motor learning and educational psychology / pedagogy, this paper will examine key factors that contribute to making hippotherapy such a successful motor learning "tool".

A key aspect in this context is that hippotherapy is not perceived as physiotherapy, but as riding and a fun activity; in fact, as "contact between friends". This motivational effect of horses to facilitate motor learning cannot be under-estimated.

The paper will discuss how this aspect and factors related to neuro-motor and sensory input (such as the regulation of muscle tone, the inhibition of abnormal motor patterns, and the practice of new, corrected motor patterns in a pattern typical of gait) combine and interact to make hippotherapy a uniquely effective motor learning opportunity, indeed.

INTRODUCTION

The effects of hippotherapy on people with cerebral palsy have been described and researched by a number of authors (Casady and Nichols-Larsen 2004; Debuse et al. 2005; Heine 1997; Künzle 2000; Strauß 1998; 2000; Tauffkirchen 1996; Would 1998; 2000; 2003). DD was the first researcher to explore in detail the comprehensive effects of hippotherapy from a user perspective. In 2003 and 2004 she conducted focus groups / semi-structured interviews with 31 children and adults with cerebral palsy +/- their parents in six centres in Germany and in the UK. The resultant data was very rich, not only in terms of the physical effects of hippotherapy on people with cerebral palsy, but, importantly, also on the psychological effects which accompany, and seem to be "synergistic" with, the physical effects.

One of the key findings was that hippotherapy is more effective for study participants than conventional physiotherapy. Many participants described how they/their children only developed certain motor skills after they had started hippotherapy, even though they had been treated with conventional physiotherapy for years. It was important to examine the origin of this observation. Therefore, the findings were examined and triangulated with existing literature on neuroplasticity / motor learning and psychology / pedagogy. Based on these sources, a conceptual framework was developed to explain why hippotherapy constitutes such effective motor learning. This paper/poster will introduce the conceptual framework of motor learning in hippotherapy (see Figure 1) which was developed based on the findings of the study.



Figure 1: Conceptual Framework of motor learning in hippotherapy

A MULIT-SENSORY EXPERIENCE

Hippotherapy clearly constitutes a multi sensory experience. The walking horse exposes the user to a great variety of sensory stimuli via:

- light and deep touch,
- proprioception,
- temperature (horses' body temperature is one degree higher than humans'; as the user sits on the horse's bare back or a blanket or sheepskin, he/she can feel this difference),
- vestibular input through movement in space (acceleration, deceleration, changes in direction),
- vision, and
- smell.

Many people with cerebral palsy never usually have an experience of (relatively effortless) movement through space. Non-ambulant people with cerebral palsy do not usually experience a mobile pelvis or unstable base of support, either. This is significant. There is increasing recognition that the fact that individuals with cerebral palsy are not exposed to the same sensory and movement stimuli as non-disabled people contributes significantly to their disability. In other words, their lack of normal movement is not only due to their abnormal motor output, but also due to a lack of sensory input, and thus, of the opportunity to experience and practise normal movement responses (Leonard 1994; Schulz 1998; Shumway-Cook and Woollacott 2001; You et al. 2005). The horse as a "mobile base" and its movement in space provide a unique opportunity in this context. One of the participants in our study reported:

"the horse moves you in a way, simply by the flow of its movements, which you would never be able to achieve like that yourself. In the wheelchair you're stable; the movement [on the horse] is a completely new sensation, really, which you don't get at other times... To keep your balance with that is really a completely new feeling, which you're never really exposed to, otherwise".

A UNIQUE (AND REPETITIVE) MOVEMENT EXPERIENCE

The participant quoted above expressed clearly that hippotherapy gives her a unique movement experience.

What is so special about hippotherapy is that the movement the horse "provides" is not only repetitive, it is also typical of normal human gait (Dvorakova et al. 2003; Riede 1986; Schirm and Riede 1998). Thus, the facilitation of trunk control via the horse's walk is something that, indeed, comes very close to normal movement for many individuals with cerebral palsy and other neuro-motor deficits. This trunk training in a pattern that very closely resembles human gait (Dvorakova et al. 2003; Riede 1986; Schirm and Riede 1998; Strauß 2000) is unique to hippotherapy and experienced as such by users. One non-ambulant participant in our study said:

"on the horse I feel as if I was walking. I can give myself completely up to it [the movement], and the horse transmits it onto me".

The walking horse transmits 90-120 movement impulses per minute onto the person on its back; a hippotherapy session lasts in the region of 20-30 minutes.

Strauß (2000) emphasises that no therapeutic medium other than the horse can replicate this. For a discussion of the effects of differences in quality of hippotherapy on this unique movement experience, and thus, the motor learning opportunity it provides, please see Debuse et al (2006).

The horse provides a repetitive movement stimulus (the relevance of this has been discussed in relation to neuroplasticity (Dobkin 2004; Grillner 2003)), that requires a continuous motor response from the person on its back. The horse moves the patient's pelvis in a pattern which very closely resembles human gait (Dvorakova et al. 2003; Riede 1986; Schirm and Riede 1998; Strauß 2000) and gives the patient on its back constant feedback on his/her motor performance (Casady and Nichols-Larsen 2004). Several authors have observed that hippotherapy also regulates abnormal tone in the limbs (Would 1998; 2000), an effect which has been confirmed independently by all participants in our study. Importantly, the changes in tone and motor output during hippotherapy provide users with new sensory input. In combination, these factors allow users to practise new, corrected motor patterns with each step of the horse.

A SENSE OF ACHIEVEMENT

A key aspect in the context of motor learning is that users and parents experience hippotherapy not as physiotherapy, but as riding. Hippotherapy is enjoyable for users, many of whom are weary of other therapies. There is evidence (Chen et al. 2001; Rubie et al. 2004; Stine 1997) that immediate enjoyment, interest, motivation and self-esteem all promote learning. This motivational effect of horses to facilitate motor learning cannot be underestimated. Importantly, child and adult participants in our study expressed that their participation in a "sport" also gives them a sense of achievement and makes parents proud of their (less able) children. Users' improved motor ability (for example ability to walk without a stick, or not falling any more) also increases their self-esteem.

Interestingly, also *parents'* expectations have a direct influence on their child's performance. Children whose parents think they are going to perform well at school, really do better than children whose parents have low expectations of them. Conversely, good performance at school further strengthens those parents' trust in their children, who are already confident in their performance. This creates a "virtuous circle". It would appear that the children whose parents believe in them have greater confidence and, therefore, approach learning situations positively, while those children whose parents have low expectations of them, have little self-confidence and, therefore, avoid learning situations which seem difficult to them (Aunola et al. 2003; Bandura 1982).

Users' reports in our study demonstrated that this principle applies to hippotherapy, too: their improved motor ability makes users feel more confident following hippotherapy. As a result, they (successfully) attempt motor tasks which they did not try before, resulting in improved activity and participation. The following observation of a mother of a five-year-old illustrates this point:

"He used to trip and he couldn't go out with the others in the garden with his toys... but now [since hippotherapy] it's definitely that he can do more as well, and the more he can do, the more they [his brother and sister] get involved with him as well."

NEUROPLASTICITY

As far as motor learning / neuroplasticity is concerned, "when motor activity is combined with visual attention..., cortical activation is more extensive than the sum of activations during either movement alone or visual attention alone" (Steven and Blakemore 2004, 1244). Also, the more intense and prolonged the exposure to the movement experience, the more effective the motor learning (Shumway-Cook and Woollacott 2001), and the more centres are involved (motor, sensory, affective), the more effective the neuroplasticity (Butler 2000; Elbert et al. 1994; Flor et al. 1997).

Hippotherapy provides unique motor and sensory stimuli over a prolonged period of time. Users have the opportunity to practise their responses to these stimuli with every step of the horse. The fact that all this happens in a pattern of trunk movement that closely resembles human gait (Dvorakova et al. 2003; Riede 1986; Schirm and Riede 1998; Strauß 2000) would help to explain the marked improvement in trunk control and walking ability observed by some authors (Strauß 1998; 1999; 2006; Would 1998; 2000; 2003) and many clinicians following hippotherapy.

However, and importantly, beyond its unique sensory and motor stimuli, the horse in hippotherapy engages users on an emotional / affective level, creating not only a physically, but also a psychologically ideal opportunity for motor learning, which involves motor, sensory and affective centres in the brain. Against the scientific background of neuroplasticity outlined above, it is not surprising that hippotherapy constitutes such favourable conditions for motor learning.

CONCLUSION

A very important finding of our study was that all adult users and most parents expressed that they found hippotherapy more effective than conventional physiotherapy. This is remarkable. It echoes the observations of many physiotherapists participating in a previous phase of the study (Debuse et al. 2005) and the widely held belief in Germany that hippotherapy is the treatment of choice for children with cerebral palsy (Riesser 1996).

While individual effects of hippotherapy have been written about, no attempt has been made to relate individual effects to each other and examine their interactions, based on the wider literature. To the authors' knowledge, Figure 1 is the first conceptual framework of its kind to express the complex interactions between individual aspects of hippotherapy and their effects to explain why hippotherapy constitutes such an effective motor learning opportunity. While it cannot claim to be complete, we hope this conceptual framework will make an important contribution to the debate in, and the understanding of, the area.

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A EQUINE THERAPY RESIGNIFICATION THE LIFE.

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The use of the horse as educational, psicoterapêutico, esportivo resource and supplier in the socialization is not a recent discovery. Its expansion, each time more, confirms its benefits and its effectiveness in the script of special activities of the person with deficiency and/or necessities. The perfect union of the man with the nature favors, in harmonic way, practical of the Equine therapy, providing to the practicing pleasure and satisfactory well-being and, consequently, results.

According to OMS - World-wide organization of Health, is esteem that, 10% of the population of developing countries, present some type of deficiency. With sight to this population, however, if it more says each time in an inclusive society, having as base to the education for all. From there the importance of the Equine therapy, in its position to interdisciplinar, therefore besides making possible a harmonic and affective relation with the animal, transmits to the practitioner a gamma of stimulatons sensório-engine, favoring to valorar the citizen, in its abilities and potentialities inside of the complexity of this process, canalizing it for the formal education and the market of work, socializing it to give sensible to its life.

The Equine therapy was born and comes growing with the mission to contribute for the development of the social Being, integrated, giving felt to the life of the people with deficiencies, assisting of decisive form in the formation of the citizen who if makes to each day. According to RODRIGUES (1989), the man, shows with the logoterapia, an essential intention in the inherent life and to he himself: the search of a direction or one meant of incorporeal matrix, of a goal that means the accomplishment of values in the moral area, ethical and that it dignifies it as person human being. Intention this that is motivador factor for all the ones that participate of the activity since this constitutes and is constituted by subjetividades, in which each one contributes for the _expression of new sensations in a vicious and nonreproducible cycle.

Face to the displayed one, the Equine therapy, method to interdisciplinar, differs from other methods, therefore, makes possible the simultaneous envolvement of a group of professionals, objectifying to give sensible to the life of the practitioner. Being the horse essential tool in this method, its contribution, it comes to allow to the carrier of special necessities the satisfaction of practical its, making possible to same a goal for convivência in conscientious way in the diversity. With this, the Equine therapy of global form search, in the relation established between the man and the nature, to acquire knowledge people and authorities how much to its importance, in the fields physical, psychic, moral and spiritual.

For FRANKL (1991), the direction of the life always is modified, never leaves to exist. In accordance with the logoterapia, we can discover this direction in the life through three

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different forms: 1 - trying something or finding somebody (existential values or of experience); 2 - creating a work or practising an act (creative values) e, finally; 3 - for the attitude that we take in relation to the inevitable one. With base in this affirmation, the inevitable suffering that they live deeply the families with the deficiency carriers is supported in the walked inabalável Faith and its untiring one, reflecting it each conquest of the practitioner in the equoterapia and stimulating the construction of an educational and reabilitacional thought for the inclusion of these in the society.

With this, one becomes important to perceive that the quality of the familiar environment assists in the development of the person with deficiency, assuring to it confidence in itself and in the other and the feeling of belonging to the familiar nucleus. It acts as factor stimulant for its psychic and motor development, agreeing to the change possibility to the cognitiva structure of the deficient one. We have to accept that it is possible to change the cognitiva structure of the deficient one. For definition, it does not have nor it can have deficient ineducáveis. For effect of the precocious education and the whitewashing, we can transform deficient into an independent, independent and capable being of learning and the ideacional elaboration. To learn to learn is possible also in the deficient ones. For more adverse conditions that if raise, the human organism is an open system and sistêmico e, as such, intelligence alone can be conceived as interacional, flexible, plastic, dynamic and auto-regulated a process of identification form that the learnings human beings are developed step by step in an adjusted psychological environment and. When the environment is not adjusted the development of the learning capacities is engaged. (FONSECA, 1995, p.73).

The participation of the family in the educational, psicoterápico, social context and spiritual in the life of the carrier of special necessities certifies its importance for the development of exactly, choosing them as "main and the encouraging right-handers of the sensitivity of its children" (GUTIERRES SON, 2001).Este feedback of the family, ally to the work of the team to interdisciplinar, is based on the programming of assistance the deficiency carrier, beyond the formation theoretician, pedagogical and staff of the professional of Equoterapia.

For BRITO (2000), "Generally when a child is born, it has who says... is the face of the father.. Others find that it is the face of the mother... But, when a special child is born, few are risked to say with who if it seems... but, without a doubt, it is the face of the family and the body of the society ". MORIN affirms (1982, p.217): " But the interdisciplinaridade controls in such a way disciplines them as the ONU controls the nations. Each disciplines intends first to make to recognize its territorial sovereignty, and, to the cost of some lean exchanges, the borders are confirmed instead of if pulling down.". In this direction a facilitador environment is created special stimulating the person with necessities in its recovery; since, many times, they are submitted the treatments of long stated period, whose resulted they are also very slow generating fatigue and impatience in the family. The stimulation proceeding from the environment and the three-dimensional oscillatory movements of the horse generates in the patient a espontaneidade sensation and pleasure making to feel itself it autoconfiante, improving its auto-esteem, the space perception, stimulating it of sensorial, visual form, in the acoustics, the perception of the auto-image and in the organization space-weather, providing more good use of its component afetivo.(RIBEIRO Dos Santos, 2000, p.57)

By means of the this process of inclusive society, the Report for the UNESCO of the International Commission On Education for Century XXI, coordinate for Jacques Delors, in sends the support of the "four pillars" of the education: To learn to know, to learn to make, to learn to live together, to learn to be.

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THERAPEUTIC RIDING WITH BABIES AND TODDLERS

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Even though a child's posture continues to mature until the end of its 3rd year, there are further good reasons to start a child of only a few months on HT. Abdominal and back positioning, side lying, and later seating are all used. The assumption is made that through various positioning, developmental phases of postural/motor ontogenesis are step by step facilitated: stages of individual movement of limbs, side sitting, creeping, crawling, sitting, walking and fine motor skills. These new innovative procedures being used in HT and child rehabilitation are still in development.

The first position given to a child is based on its developmental age, disorder and clinical diagnosis. During the entire process of HT, the child is carefully watched for emotional (tears, laughter, etc.) and motor expression (a drooping head, tiredness, etc.). With these in mind, individual aspects of the therapy are then modified. In the case a serious disorder in regards to postural ontogenesis, the child is placed on its belly sidewise across the horse's back while the horse is standing still. Later, although very carefully and only in short intervals, the horse is lead in a gentle walk. In the case of infants and toddlers, this anti-spastic position we have not preferred, since the spasticity among very small children is not yet strong. Currently, however, this position has also been successfully used with nursing infants. As a rule, the children respond well to it. Derkits assume that by placing a patient across the horse's back, with their head facing inside the circle of the horse's track, they achieve the facilitation of the individual holokinetic movement of limbs as well as the development of creeping through the use of centrifugal force. These positions have been used with adults for imitation and facilitation of first motor developmental phases. We have started to use these positions with nursing infants and toddlers who we can class from the developmental age in the phase of holokinetic movement.

Later, depending on the progression of the therapy with an emphasis on the developmental age of the child, the child is placed on their belly lengthwise, with their face resting on the horse's back, as Hermannová suggested. Children are usually able to manage this position lying on their backs, only towards the end of HT. From the ontogenesis point of view, this positioning is applied at first when the horse is standing still. Later, the child is placed in the direction opposite the direction of the horse's gait, and finally in the same direction as the horse's gait. All the patient's upper and lower limbs are positioned at 80' angles and slightly bent at the elbows and knees.

Gradually, depending on the developmental age and therapy progression, some children are set up on the horse in a normal posture pattern position supported by their elbows and

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open palms, some time towards the end of the 1st trimenon. Later on, based on the results of the treatment and development of the child, the child is repositioned smoothly in rhythm with the horse's gait, his elbows extended. Thus, the child is placed in a normal posture pattern position by the end of 2nd trimenon.

The notion of **"stimulating positioning on a horse"** gives the proper picture of how hippotherapy is performed with babies and toddlers and clearly manifests its basic principle. Viewing the process from the aspect of kinesiological development, it is believed that the above mentioned positions in the 1st and 2nd trimenon imitate and facilitate the important developmental phases, such as creeping and crawling, mainly by stimulating the primary postural pattern. Later, other developmental stages like sitting, walking and fine motor skills are also facilitated.

It is thought that similar stimulation is also brought about by proper contra-seating and normal seating which are gradually applied later on. The various seating positions used in HT facilitate healthy sitting, walking and fine motor skills. These HT seatings correspond with the position of the baby, whose postural age is 3 months, lying on their back. For these reasons, in the case of nursing infants who have mostly been rehabilitated using the Vojta method, it is recommended that that method be complemented with the support of the stimulation of the primary posture pattern through HT.

If technically possible, stimulating side positions should be used as well, both lying down and in a seated position. It can be assumed that lying on side lengthwise (left and right) on horse's back stimulate the developmental stage of rolling over, creeping, leaning sitting with laterally support with infant's hands and later stages of postural ontogenesis (SPO). Lying on side lengthwise can be used in three different evolution modifications. First, patient lies on his side. Second, patient lies on the side leaning on the flexed elbow. Third position, lying on the side leaning on the straight upper extremity – it is half sitting and half lying. Sideways seating facilitates the phase of the cruising (moving sideways) of a standing child using some kind of support (e.g. furniture such as an armchair or wardrobe). The effect of facilitation might be accentuated by the stimulation of a trigger area during HT. If the child is already able to stand, a standing position on the horse can also be used, facilitating good posture on a live moving surface (table).

Fable: Stimulating	Positioning	on a Horse
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Patient's Position	Horse's Position	Development Facilitated
Lying on belly across or lengthwise on horse's back	Standing still	Holokinetic involuntary movement of limbs Later stages of postural ontogenesis (SPO): creeping, crawling, rolling to a sitting position, sitting, walking and fine motor skills
Lying on belly across horse's back – Facing into the circle – Facing out of the circle	Walking	 Holokinetic involuntary movement of limbs & SPO Creeping forward & SPO

Continuação

Patient's Position	Horse's Position	Development Facilitated
 Lying on belly lengthwise on horse's back in the creeping position In the opposite direction to the horse's gait In the direction of the horse's gait 	Walking	 Creeping and crawling backwards, rolling to a sitting position & SPO Creeping and crawling forwards, rolling to a sitting position & SPO
Lying on belly lengthwise on horse's back, leaning on elbows and open palms (Normal CPP at the end of the 1 st trimenon) – In the opposite direction to the horse's gait –In the direction of the horse's gait	Walking	 Creeping and crawling backwards, rolling to a sitting position & SPO Creeping and crawling forwards, rolling to a sitting position & SPO
 Lying on side lengthwise (left and right) on horse's back – 3 positions: - First, patient lies on his side. Second, patient lies on the side leaning on the flexed elbow Third position, lying on the side leaning on the straight upper extremity it is half sitting and half lying. In the opposite direction to the horse's gait In the direction of the horse's gait 	Standing still Walking	Turning around, rolling to a sitting position & SPO
Seated to the side on the horse's back	Standing still Walking	Sitting a side-stepping with help
Seated – Facing away from the horse's head- Correct seating (facing the horse's head)	Standing still Walking	Sitting, scooting back and SPOSitting and walking forward and SPO
Placement standing on the horse's back	Standing stillWalking	Support of standing and balance training

Beyond using certain applicable elements from the Vojta method, elements of the 'Baby Bobath' concept are also recommended to complement HT with babies and toddlers. Among other things, both methods influence muscle tone, have therapist and patient moving together in rhythm and a playful approach making them perfect partners in therapy.

In the creation of new and facilitation of old motion programmes, the brain's enormous capacity to learn and adapt is used, especially in childhood, together with the activation of

the limbic system brought about by the positive emotional impulse encouraged during HT (based on the Pribram holographic concept).

There is now convincing evidence to support the belief that the minimum age limit of 3years for HT is no longer justified. Ontogenetically, the use of HT is fully justifiable. This opinion is also supported by the observation of the school age population who suffer from bad posture. It is evident that these posture disorders are the result of inadequate development in the 1st trimenon, not only the result of an overworked previously perfect posture.

Based on current neurophysiologic understanding and practical experience with HT, it is thought that this young age is particularly appropriate for the use of HT. It is especially useful with children suffering from cerebral palsy and other neurological disorders as well as from orthopaedic disabilities. The adaptability of the central nervous system as a control unit of the musculoskeletal system is during this period of life at its most malleable. Its influence on the musculoskeletal system (the performance and sensor elements) as the source of stimulating information is intense. Good experience has been had with children this young, using elements of remedial education vaulting and riding, e.g. with autistic children.

It is a given that HT with infants and toddlers must be applied with sensitivity by an experienced team once diagnoses and the proper transferrals have been made by physiatrists, and in close cooperation with physiotherapists. This stimulating positioning on a horse presents a comprehensive and effective method which enriches rehabilitation procedures among the youngest of our patients.

When considering the next step in therapeutic treatment in the case of patients unable to sit alone or hold their heads up, it is vital to decide whether or not to continue in HT in stimulating positioning or to have an assisted sitting position using a physiotherapist. In regards to older patients, neither Hermanova nor Derkits recommend using any HT position which has not already been reached in the postural development in the case of that particular patient. We have been using assisted positions for patients who have already reached any given developmental stage or with other patients depending on their age, clinical condition and prognosis.

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