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THESIS TITLE: THE CONTRIBUTIONS OF EQUITATION AS ADAPTED SPORTS TO IMPROVING THE MOTOR SKILL OF PERSON WITH EMOTIONAL AND BEHAVIORAL DISORDERS

KEY WORDS

- *The contributions of noble sports equitation, as adapted sports*
- *Improving the motor skills of person with emotional and behavioral disorders*
- *Therapy horseback riding (hippotherapy, Therapy with animals, in this case the horse, the special bond between the subject-the horse-the therapist.)*

INTRODUCTION

The adapted sport is a branch of sports which uses motor structures, specific rules, material and organisational conditions modified and tailored to the specific requirements of different types of deficiencies. The recreational dimension of the adapted sports determines the creation of a complex system of services oriented towards the interests and experiences of the subjects, protecting and promoting health. The rehabilitation of a child with disabilities have to be a continuous process that should take place in an environment proper to a balanced physical, mental, intellectual, social etc development. In the case of a child with special requirements, there shouldn't be any expectations of recovery without help, on the contrary, the existence of a handicap must be accepted as a fact and then we can look for solutions for the person to live a life as independent and as normal as possible. The corrective and stimulative actions intended for the development of children with special educational needs have to be designed by psycho-therapists and put in practice as a team work with the doctors, the family and all the persons having interactions with the child. Special education, consisting of early correctional-therapeutic programmes, can lead to improvements and can stimulate the development between certain limits and the behavioural evolution of the person. The present study aims to promote equal opportunities and openness to disable children, considering that therapeutical horseriding is succesful.

Therapeutical riding, also known as *hippotherapy*, is a form of treatment that is beneficial to both children and adults who suffer from various physical, locomotor and psychological problems. The movement and step of the horse are used for the stimulation of the balance and of the motor system, the subject being engaged in medical exercises with or without helping tools for a large range of therapy aims. It consists of performing medical exercises on the horseback, ridden just on a fur or blanket and a strap with handles designed and adapted for this therapy. It is a movement therapy; the horse, through the rhythm of its pace, has a calming effect on the subjects, helps their recovery, and gives the therapy a multidimensional

perspective of an act that takes into account the primary objective of improvement or removal of symptomatology as well as respecting the patient as a person, considering all important aspects of his/her life. Thus, an affective-emotional relationship is established between the hippotherapist, the subject and the horse by the motivation that the horse generates in order to help the persons with motoric disabilities, either congenital or acquired.

Therapeutical horeback riding is a truth that has to be revealed and justified, given its beneficial role in motoric, mental, affective-emotional and behavioural recovery, mandatorily competed with the unique experiences that open spaces and natural environment can provide to all children with educational needs.

Therapeutical horeback riding helps in:

- Neuro-mental recovery ;Neuro-muscular recovery;
- Endocrine and metabolic recovery.

Therapeutical horeback riding (hippotherapy) consists of a series of specific features, being mainly:

- A *natural* therapy aided by horse, using as basic means the physical exercise, and being in close connection with natural, environmental factors;
- An *active* therapy, as the subject is involved in the treatment in a voluntary and conscious manner;
- A *complex* therapy, as a special link is created between the therapist-the subject-the horse and doctors;
- A *functional* therapy, as it doesn't only aim at the physical, anatomical healing, but also at the functional, neuro-motor, respiratory, vascular, metabolic, mental, endocrine and neuro-muscular recovery;
- A *mental* therapy, because it actively influences the neuro-mental state of a patient, creating an emotional disposition favourable to healing.

Therapeutical horeback riding, or the horse aided-therapy should be continued even if the planned results have been achieved; in order to maintain the good results, the therapy must be sustained and systematic. In this way, the hippotherapeutical sessions develop from treatment sessions into preventive ones.

A therapeutical horseriding session lasts between 20 and 60 minutes, following a tailored (personalized) programme, depending on the impairment, health state and age. As a matter of fact, each session is designed to produce a manageable state for the person in saddle to be able to better perceive his/her own body and the body of the horse. The step the horse makes is the equivalent of the human step, that is it has the same length, the same rhythmicity, ripple, sensation; the movement of the horse is made at a foot's pace for stimulating the balance and the motor system, while the patient is exercising with or without helping objects, for a large scale of therapeutic objectives. The movement of the animal compels the rider to call on his/her instincts, to the natural balance of the body and thus, the movement problems are improving and the behaviour of the subject becomes more calm and more determined. No matter what the chosen subject is, one thing is certain- the most important aspect regarding the position is the part of the body in direct contact with

the horse back which also contributes to maintaining the balance. The result of this, is the alignment of the barycenter of the subject with the one of the horse. When this skill is acquired by the rider, moving on horseback and supporting the weight of the subject will be done with minimum of effort.

- a) Acquiring a correct manner of sitting in saddle of the subject from from standing position and in motion
- b) Obtaining a balance between muscle contraction and relaxation and breathing
- c) Improving and obtaining a riding position that is efficient, normal and correct.
- d) Improving the static/dynamic balance in different body positions
- e) Correcting posture and the alignment of body segments, through auto-correcting exercises, muscle stretching, enhancing muscular force and resistance.

On the hip level, the abductor, protractor, quadriceps muscles are tonified by analitical exercises and also exercises that determine loading the body with gravity pressures;

- increasing mobility of the spine and joints(shoulder, elbow, hand(fist), hip (coxo-femoral), knee, ankle.

- reeducation of balance and coordonation, by following all the steps of the training programme, improving the social skills of the subjects.

The therapist has an educating role and tries to help the subject in understanding the way in which the change in behaviour will lead to changes in the mental state.

Therapy horseriding consists of a set of procedures meant to eliminate a large scale of non-adaptive emotional reactions and unwanted behaviours as well as to come up with more efficient models of behaviour, that could enable the subject to face and deal with daily tasks and to benefit of adequate inter-personal relationships.

Moreover, this type of therapy implies the subject pro-actively, he/she observes his/her own behaviour, practices the type of behaviour aimed for and adapts his/her life in order to maintain the results obtained by therapy, eliminating unwanted habits and repacing them with appropriate ones. It contributes to acquiring an attitude of acceptance of protective behaviours and rejection of the risky ones.

In order to avoid failure of the rehabilitation treatment it is absolutely necessary to master essential knowledge about the human body, about the favourable and unfavourable factors that has an influence, the effects of the physical exercises. Performing properly, the physical exercises have useful, benefic influences on the body. The correct treatment tailored to each subject, is soon recognized as benefic, by the feeling of ease that appears once the pain is reduced, increased mobility of the spine and improved muscular tonus, thus giving the possibility of maintaining a correct posture for a longer period. In order to understand the utility of practicing physical exercises by means of hippotherapy, it is necessary to know the effects the physical exercises have on the body. Although it is an exercise, it is perceived as a joyous moment and that explains why the rider has increased tolerance and a motivation for prolonged sessions of therapeutic riding, acquiring useful skills for life, prompts the individual to be neat and develops the sense of courage, honesty and loyalty.

For the purpose of the present research, the following methods have been used:

- study of specialty bibliography references, by means of which the theoretical support of the study. Moreover, the studied materials helped us in formulating ideas and reflections that contributed in the clarification of the problems and uncertainties occurred during the experiment and during the elaboration of the thesis;
- The method of observation, applied through the whole research both by spontaneous and intentional observations.

The events and actions observed have been recorded in sheets that have been selected and used for the present study;

- The method of experiment has provided an objective basis for getting a scientific reasoning for the results of the hypothesis enunciated in this research;
- the statistical-mathematical method, the data has been collected and stored in tables, charts, diagrams which are meant to emphasize quickly and efficiently the important features of the data, named and tagged in clear manner by use of descriptive statistics, allowed the analysis and the comparison of the results obtained at the initial and final testings of the subjects during the experiment.
- The graphical method of presentation of the data allows rapid visualisation of the differences between the results obtained. It has a tree sided orientation, first, the therapists/doctors/psychologists can find out what are the preferences of the subjects, members of the group and consequently the relationships among the members of the group; secondly, the subjects get a better view of their own position in the group; and thirdly, but not last, the improvement of the relationships and of the psycho-social climate of the group by specific psychological actions.

PART I

ELEMENTS OF THEORY AND TEACHING EQUITATION AS ADAPTED SPORTS FOR KINETOTHERAPY OF PERSON WITH EMOTIONAL AND BEHAVIORAL DISORDERS *Technological approach of the research for theoretical support of the scientific endeavour*

The first part of the scientific research, describes an inter-disciplinary approach of the children with emotional and behavioral disorders trying also to determine the main generating factors, but also aspects related to the improvement of the motor skills and quality of life of children are addressed. This approach is analysed from medical and psychological point of view, trying to establish relationships between hippotherapy and the behaviour of the children during the activities undertaken. The behavioral disorders are considered both a reaction and an effect generating instability.

PART II

EXPLORING STUDY REGARDING THE MOTOR SKILLS AND THE POSSIBILITY OF USING HIPPO THERAPY IN THE DIAGNOSIS OF THE PERSON WITH EMOTIONAL AND BEHAVIORAL DISORDERS

Preliminary research technology

The second part of the study contains an exploring research to determine the reliability and the degree of implementation of the subject, a pilot research necessary to verify the instruments and working methods of this scientific endeavour.

Through this preliminary experiment, we can check the value of the independent variable, therapeutic horseriding, the optimum conditions of their application, techniques of applying the stimulus and collecting responses, the evolution of the dependant variable motricity and the subject's behaviour, the produced effects and the consequences. The variables of the research are dependant on the possibilities given by the research. The pilot experiment has been carried out at the Equine Center of the Sports Club DROSERĂ Carei. The study had a prospective nature and was implemented in 3 months, that is in July, August, September 2012. The therapeutic riding sessions were programmed 3 times a week (Monday, Wednesday and Friday) between the hours: 9,00-12,30. Collecting the data has been done separately for each subject, during their period of involvement in the study, that met the criteria to be included in the research, initial and final medical assessments recorded in a database for interpreting information. The cases have been analysed by medical history and clinical examination. The sample for the pilot experiment has been established. The chosen sample consists of a group of three children, a boy and two girls with disabilities and special educational needs who are in the evidence of the Social Assistance and Child Protection Department Satu Mare, The Family type home Complex Speranța, Violeta, Andreea for children with disabilities.

Results of the exploring research. In the present study, the individual evolution of each subject has been followed during the research, taking into consideration the distinctiveness of each subject and the different specific of the exercises applied to each case in part. In the conditions given by the preliminary research we tried to outline a rehabilitation model for children with behavioural disorders, that has been tested through the research itself and which we confirm as simplified model adapted to the possibilities of each individual subject. The degree of strain upon the subject's body, the medical results of the cardiovascular system initial and final testing; the result of effort test supported during the sessions was positive (there are no cardiological issues, the EKG was positive for all the subjects).

The subjects were tested and the response of the body to stress is positive therefore their body is capable for practising physical exercise. The normal reaction lead us to the conclusion that the effort has been well tolerated by the subjects. The adaptation each individual's body to effort is normal, positive. Therapeutical riding is a complex activity, based on combining neuromotor qualities with the neurophysiological ones, given the capacity of effort according to the bio-mechanic and kinetherapeutic requirements the degree of difficulty of the exercises, developing a positive functional adaptation of the subject's body to physical effort.

PART III

EXPERIMENTAL RESEARCH FOR IMPROVING THE MOTOR SKILLS OF THE INSTITUTIONALIZED PERSON WITH BEHAVIOURAL DISORDERS BY MEANS OF EQUITATION AS ADAPTED SPORTS

The research technology applied in the experimental context

The third part of the scientific research presents an experiment for validating the working hypothesis, outlined following the results obtained in the second part of the study. Considering that we have just one sample with the same subjects who go through the two successive stages of the experiment, we have used the longitudinal alternative of the experiment, organised and executed according to the annual plan of motor training 2012-2013. The aim is to determine in which way therapeutical riding is influencing the improvement of the motor skill of the subjects with educational requirements, whether it contributes to reducing the influence of the behavioural factors, generating thus an improved efficiency in performing daily activities and contributes to improving the quality of their lives.

1. ASSUMPTIONS OF THE SCIENTIFIC EXPERIMENTAL STUDY

In this context, physical education and adapted sports –in our case therapeutical riding, represents long-term adaptive strategies meant to rebalance and complement the the deficient functions. The influences equally-distributed upon the body and mind, upon thought and action, upon language and non-verbal expression is the quality added value of physical exercise that no other activity can prove in such an obvious way, having a motivating effect as well. Using them as means of achieving the learning objectives, determines increased interest from the subjects selected from the experiment sample, both from the point of view of voluntary participation to the study and increasing amenity towards practising therapeutical riding.

2. THE AIM OF THE SCIENTIFIC RESEARCH

The aim of the study is to demonstrate the fact that the rehabilitation of the subjects have to take into consideration, besides the motor recovery itself, bringing the subjects to biological, psychological, social and behavioural functional parameters, as vital means of reintegration in the daily activity and in social life.

3. THE OBJECTIVES OF THE SCIENTIFIC RESEARCH

- Achieving a model of programming and planning of the issues, that should not conflict with the recommendations, but to reach the aim of the study. In the implementation of the activity it is necessary a thorough information about: the specific
- Of the age, sex, type of deficiency, it's etiology , the level of development of the motor and mental capacity of the subjects, elaboration of training programmes tailored for different needs.
- Adapting the branches of sports, in our case therapeutic horse riding by alterations of the sporting gear, of the rules of the games, to the needs of the children with special problems, the modification of the exercises for increased accessibility of the persons.

- Monitoring the evolution of some parameters, mental development indicators and behavioural re-education of the subjects by means of psychological testings.
- Evaluation of the experiment sample through motor testing, for monitoring the physical condition, joint and muscle mobility and relaxation of the body.
- the education and re-education by perception of the subjects of the sensations of balance, of movement orientation in space, the feeling of vertical position and of inclined body position; the sensation of linear movement; sensation of rotation, sensation of visualisation, lateral sensation.

4. THE WORKING ASSUPTIONS OF THE SCIENTIFIC RESEARCH

1. If it is possible through equitation as adapted sports to improve the motricity of the subject?
2. If it is possible to identify possibilities of diminishing, damping of the behavioural factors by therapeutic riding and improving the disabled children quality of life.
3. If the effects produced by practicing therapeutic riding could influence the physical condition (adjusting to effort) of the subject of experiment?
4. Does equitation adapted to kinotherapy of institutionalized children with behavioural disorders facilitate their integration in society and does it create behavioural re-education model in order to avoid social exclusion?
5. Could the frequent use of therapeutic riding, the active and conscious participation of the subjects to the proposed exercises lead to increasing their efficiency?
6. Can the creation and implementation of a model of personalized teaching plan contribute to the significant increase of the level of the subjects's preparation?
7. Is it true that by the use of therapeutical horseriding properly tailored to each subject, they could benefit of: improved muscular tonus, balance and relaxation of the body, normal development and adaptation capacity to physical effort, better mobility of the spine and joints, offering the possibility of maintaining a correct posture for a long time?

5. TASKS - the unfolding of the lessons/sessions in the preset conditions:

- Scientific and bibliographic documentation of the scientific research;
- Making sure that the materials we have are sufficient; Checking of the working instruments; Unfolding of the lessons (sessions) in instructive design conditions;
- Monitoring the attendance of the subjects to the therapeutic sessions;
- Applying motor skill tests in order to assess the joint mobility, the physical condition and adaptation capacity of the body to effort, using initial and final tests; Applying psychological initial and final tests in order to evaluate the behavioural conditions;
- Evaluation of the experiment sample by motor skill tests, in order to monitor the physical condition, joint mobility as well as testing the mental state;
- Statistical processing of the data obtained and interpretation of the results;
- Implementing the education technology projects depending on the preset objectives and the material means that we can use;

- Interpretation of the results and formulation of the conclusions.

6. METHODS AND TECHNIQUES OF RESEARCH

In this part of the study we used the following research methods and techniques:

The bibliographic documentation method, the logical method, the hermeneutical method, measuring and registration method, questionnaire method, teaching observation method, teaching experiment method, statistical-mathematical method, computerized graphical method. All the data are stored in worksheets in Microsoft Excel programme and using IBM.S.P.S.S.Client V21/32bit informational programme while for a better highlight of the differences that can appear between the initial and the final testings the graphical method is used.

The analysis and comparison of the results obtained at the initial and the final testing of the subjects together with the graphical method of presentation of the data allows the rapid and obvious visualization of the differences between the results obtained from the three subjects of the research. The medical assessment of the rehabilitation treatment, the initial and final thorough medical examinations are mandatory. The first examination establishes the state of health and the functional capacity to effort- and gives the conclusion-fit for physical effort, offering solid base for establishing the treatment indications, the contraindications and the graduate application of the effort from simple to complex, from known to unknown. The adaptation of the body to effort is made step by step and does not follow a lineal ascending, it has to be done progressively and in accordance with the individual characteristics. During the sessions, the subjects are exposed to various levels of intensity, their bodies adapts to these intensities, physiological alterations by extending its functions in order to be able to cope with the strains, and thus the therapist can monitor the intensity of the therapeutical riding sessions. The subjects of the strain and the way their body reacts to effort is positive , therefore their body is medically fit for physical effort. The normal reactions lead us to the conclusion that: the effort has been well tolerated by the three subject. The adaptation of each individual subject's body activity to physical effort is normal, that is positive. The final medical examination establishes the health state of the subjects from the moment of starting the therapeutic riding, as rehabilitation treatment for improving and correcting physical and mental deficiencies of the subjects, by the adjusting of the main functions of the body, circulatory and respiratory systems and the metabolism in physical effort as well the changes that take place in the body as a result of regular practicing of physical exercises. In this way, precise indications can be given whether the exercises can be more intense or can last longer or on the contrary, whether they are off limits and need to be reduced either in duration of a session or in their weekly frequency.

The results of the analytical evaluations, the joint and muscular testing results obtained from the three subjects C.T., S.R., G.V., presented in the research technology itself through the charts and graphics are positive. There are ascending differences between: initial and final testing for increasing the joint mobility: shoulder, elbow, arm, hip, knee for the three subjects. At the final testings can be noticed visible progress in the bio-mechanical alignment and functionality of the segments in

question, and also some altered postures disappear and get back to the physiological level. Moreover, we can notice a correction of the body posture, of the shoulder blade and shoulders, between the two testings and the improvement of the static/dynamic balance in different positions of the body.

The hippotherapy treatment properly tailored to the subjects of research is soon recognised as benefic, by the well-being that appears once the pain is reduced, the development of balance, the development of spatial and timely coordination, development of the attention, increasing of the spine and joint mobility and increased muscular tonus, giving the possibility of maintaining a correct posture for a long time. The physical condition attained by regular practicing of therapeutical riding is translated on personal level of the subjects in: increased mental performance, develops will and self-confidence, independence on motor and psychological level, contributing to the perceived quality of life, capacity to tackle problems, joy of life, favourably influences the state of mind of the subjects while their behaviour becomes more calm, serene and determined. A result is the attaining of an attitude of acceptance of the protective behaviours or the behaviour of rejecting the risk by adapting the body to its environment. Being able to master the methods considered to be difficult even by the persons without disabilities, the subject experiments how is it to be "normal", reaching, sometimes superior performance, as having self-control increases the trust in the horse he/she is riding. The fact that the subjects share their common love for horses and common socializing experience can be a good foundation for lasting friendships, and spiritual bond with the horse, while interest, motivation, responsibility of the subjects towards this activity is developed. Therapeutic horseback riding-hippotherapy has to be continuous and even if the desired objectives have been achieved, the activity has to continue regularly in order to maintain the positive results obtained. In this way, from curing treatment, therapeutic horseback riding gets a preventive character.

CONCLUSIONS AND RECCOMANDATIONS

Based on the bibliographic study, on managing and interpreting the results obtained after the statistical processing of the data, we have reached the following conclusion: therapeutic horseback riding is an appropriate means of attracting the children in order for them to develop specific skills and contribute to their physical, mental and social development and that has a positive influence on developing their motor skills. The organisation of the riding sessions requires a tireless effort that leads to the increase in the capacity of supporting stress and effort.

Moreover, these activities take place in a open, natural space that contribute to the improvement of the performance and efficiency , while it has a positive influence on the health of the subjects involved.

1. For increasing the functional capacity of the subjects the physical exercise programme has to be started as soon as possible, before the physical decline sets in.
2. Following the clinical and functional assessment, we have to establish the right combination of excrcises necessary for regaining muscle force, joint mobility and balance.

3. For the progression of the physical exercises first, is necessary to increase the duration, followed by increase in intensity while the exercises chosen for improving the motor skills have to take into consideration the characteristics of age and gender of the subjects in order to ensure accessibility and attractiveness.

4. The therapeutic horseback riding exercises, in contrast with other methods used in kinetotherapy, do not cause muscle pain or fever. The logical explanation for this is the fact that the muscles relax between the repetitions, and due to the higher temperature that comes from the horse, the whole body relaxation is attained. This interval is sufficient for the blood to eliminate the lactic acid from the muscles and to allow the muscle to work at maximum capacity without any downside.

5. the degree of objectivity of the tests has to be achieved by ensuring accessibility of the exercises and a good understanding of them by the subjects involved.

6. In order to attain ambidexterity capacities the exercises and movements of the segments have to be guided both directions.

7. for the improvement of the plasticity of the neuro-muscular system, various combinations of positions and movements have to be used, in a progression that is tailored to each individual's motor skills.

8. The strain on the nervous system, neuro-phyhic, neuro-muscular, neuro-endocrinologic, cardio-vascular, respiratory, hepatic and renal level induced by the effort is reflected on the humoral level by bio-chemical alterations triggered in the tissues of the organs involved in the ergo-genetic metabolism, and all these changes are depending on the fisiological characteristics and resistance of the subjects.

9. The results of the research demonstrated the the exercises used have a positive contribution to the development of the motor skills, are efficient and we reccommend their practice in the training and rehabilitation of the subjects, but noting that these exercises have to be adapted, sometimes completed according to the subject's age, the specific of the motor or emotional disorder of the subject, the existing material conditions and the level of training.

Just as in the case of any other programme, a series of parameters are variable, and the therapist have to adjust them to a certain subject. We are talking about the duration of the exercises, number of sessions per week/month, establishing the set of exercises, the progression, order and number of muscular groups involved. Chosing the forms of exercises can be done according to the possibilities, the desires of the subjects, the effects of the effort as well as other organisational requirements.

10. Besides the progress in a specific issue, there are substantial gains with regard to the insight capacity and self-knowledge. These capacities become favourable conditions for developing efficient behaviour patterns, for getting the capacity to have a positive perspective of life, to become more calm, more self-confident, to improve the quality of life, the relation with others, to become , generally, more satisfied and to discover life to be more meaningful and worth living, therefore it is a very important thing to encourage, to give credit and praise for the subject's achievements, to treat him/her with the proper respect in order to make him/her feel apreciated and valued.

