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Hippotherapy as a type of effective (self)rehabilitation among visually impaired children

Hipoterapia jako forma skutecznej (auto)rehabilitacji dzieci z wadą wzroku

Summary

The specificity of hippotherapy, as one of the alternative methods supporting the development of disabled children (in the study of visually impaired children), stems from moving beyond standard, conventional, cut and dried ways of interactive rehabilitation. While respecting the principle of subjectivity, personalization and integration it seeks to create proper conditions and circumstances for activation of the process of self-rehabilitation to take place – where children actively engage in the process of rehabilitation, learn responsibility for themselves and their own actions – and become co-creators of their own development. The key to active participation in hippotherapy – as studies suggest - is personal intrinsic motivation for participating in this process. The aim of this study was to diagnose the relationship that exists between the motivation of children with disabilities that participate in hippotherapy and the effective results of these activities (in the cognitive, social and physical areas).

Key words: visually impaired person, hippotherapy, self-rehabilitation, motivation

Streszczenie

Specyfiką hipoterapii jako jednej z alternatywnych metod wspomagania rozwoju dzieci niepełnosprawnych (w badaniach dzieci z wadą wzroku) jest wyjście poza utrwalone, konwencjonalne, schematycznie powielane sposoby oddziaływań rehabilitacyjnych. Przy respektowaniu zasady podmiotowości, personalizacji i integracji dąży się do tworzenia takich warunków i sytuacji, w wyniku których następuje uruchomienie mechanizmu autorehabilitacji – dzieci aktywnie włączają się w proces rehabilitacji, uczą się odpowiedzialności za siebie oraz własne działania – stają się współkreatorami własnego rozwoju. Kluczem do aktywnego udziału w hipoterapii – jak wykazały badania - jest ich wewnętrzna motywacja do uczestniczenia w tym procesie. Celem badań była próba zdiagnozowania związku, jaki zachodzi między motywacją dzieci niepełnosprawnych do uczestnictwa w hipoterapii a efektami uzyskiwanymi w wyniku tych zajęć (w sferze poznawczej, społecznej i fizycznej).

Słowa kluczowe: osoba z wadą wzroku, hipoterapia, autorehabilitacja, motywacja

Introduction

Over the last several years a change in the approach to disabled people has been observed, which emphasizes the principle of subjectivity, personalization, integration, and standardization. As a result, the consequent exploration of methodological innovation has enriched the practice of rehabilitation, which consists on the whole of various selections and applications of many different and specific forms, methods, and techniques of therapy and rehabilitation, which refer in essence to personalistic anthropology. Their aim is optimal development of disabled people, by way of acquiring new experiences, strengthening their sense of autonomy and responsibility. Due to acknowledgment of individual disabled subject as a legitimate entity in rehabilitation, the aim is consequently to create particular conditions and circumstances to arise in order to enable the patient to recognize and develop their potential, agency, and independence. The desired outcome of the processes of rehabilitation is an optimal level of autonomy, the ability to help oneself, as well as right self-awareness of one's strengths and weaknesses. First and foremost, the focus is on one's own activity and self-rehabilitation (Obuchowska 1993). Self-rehabilitation thus becomes both a target and a means to all effective rehabilitation activities. "We strive for its rise, and then we strengthen, and develop it even further" (Kosakowski 1996, p.103).

The key to active, subjective, participation in the rehabilitation is an increase or maintenance of a high level of motivation in the individual to participate in this process. The importance of expanding the internal motivation of the individual in the process of rehabilitation has already been indicated by M. Grzegorzewska (1963; from: Eckert, 1995, p.146). She writes: "the action of expanding (...) highly increases the activity of a handicapped individual, their initiative, creativity, enthusiasm for work, the strength of will to overcome difficulties, and oftentimes the passion to fight them. This triggers the latent dynamic potential of the self, adds and multiplies it, and leads to increase in the overall well-being of individuals, allowing them to experience positive emotional states, even the strength of the dominants. (...) We shape the conditions for raising children so that it could affect their awakening to new principles of action, new motivations triggering a positive attitude instead of frustration". The action of expanding – aims at leading a disabled person to start working on their own. Indeed, it is an active involvement in the rehabilitation process. Thus, the condition for successful therapeutic and rehabilitative effects lies in the use of activating methods which enable the child to experience a need to make their own, as well as group actions, which are expected from them (Dykcik 2005, p.236).

Hippotherapy is one of alternative methods supporting the development of children with disabilities. Due to multifaceted impact (a possibility of obtaining simultaneous improvements in many areas of impaired functioning), it is classified among a group of methods in multilateral improvement. It is closely associated with other therapeutic methods of rehabilitation and fully benefits from their achievements. It is preferred when other possible therapeutic effects cannot be achieved by means of ordinary treatment. There are several kinds of hippotherapeutical exercises, which intermingle with each other and, by the same token, complement one another:

- physiotherapy on horseback – healing gymnastics on a horseback carried out during the ride by a physiotherapist,

- psycho-educational horseback riding - individual sessions with a therapist, teacher, special educator, or a psychologist, where the emphasis is on psychodidactic aspects of therapy,
- therapeutic horseback riding - activities aimed at improving the patient's communication with the outside world,
- horseback riding for disabled people - sport and recreation exercises in order to master the basics of riding, and even preparing some of them for participating in equestrian competitions,
- horse racing – apart from tourist, recreational, and cognitive values, they also create great opportunities for teaching and learning (<http://www.hippika.net/index.php?tyt=4>).

The uniqueness of hippotherapy stems from its essential naturalness, i.e. establishing interaction with a real animal – a horse, which as the object of interest has a great power of attraction. Usually, children are happy to participate in this kind of activity, and experience a lot of joy and satisfaction. In the presence of a horse they feel wholly accepted, since it does not show such negative attitudes as reluctance, impatience, and above all, does not judge their impairment (Strumińska 2003). Participation in hippotherapeutical activities enables a contact with nature and being in a new environment. It has an impact on the cognitive development by lowering levels of anxiety, increasing one's self-control, building social relationships, acquiring new motor skills, stimulating the child to take one's own initiative, and allowing for a better understanding of themselves and their abilities (Brzuchacz 2005; Heipertz-Hengst 1997; Michalski 2004; Strumińska 2003). This unique form of rehabilitation, during which a child naturally experiences one's own agency, joy of successful achievement, strengthens consequently their self-esteem and brings great satisfaction. As a result, powerful experience and emotions are triggered that motivate them for active participation in the exercises (Gąsiorowska 1997).

The benefits of participating in hippotherapy may be experienced by various people with different diseases or developmental disorders. Moreover, recently often many participants are blind and visually impaired people.

Material and methods

The above considerations, although presented in a form of a general sketch, clearly show the uniqueness of hippotherapy as a form of rehabilitation, both in terms of its efficacy and intrinsic motivation of children to participate in it. Those two issues are closely related and therefore they have been tested with a formal procedure. The aim of this study was to diagnose the relationship that exists between the motivation of children with disabilities that participate in hippotherapy and the effective results of these activities. For this purpose it was necessary to determine 1) the level of motivation of the subjects for participating in the activities, its sources, conditions, as well as 2) the effects obtained in the cognitive, social and physical areas.

The study includes 30 children from 'Róża Czacka Educational Centre for Blind Children' in Laski (Poland) who attend hippotherapy provided by this resort. Among them the most numerous (46.7%) are students of secondary schools, one in three is a high school student (33.3%), one in five (20.0%) – goes to a primary school. Half of them are completely blind, the remaining 50.0% belongs to the category of low vision.

In the group consisting of 20 boys there is a slightly higher percentage of blind people (55.0%), and among 10 girls – there is a higher number pertaining to the category of low vision (70.0%). All children from the study live in dormitories at the Department for the Blind People in Laski.

The study was conducted using the method of diagnostic survey, which was subordinated to three techniques: interviews, document analysis, and grading scale. The empirical material was gathered on the basis of qualification charters of the participants in hippotherapy, a questionnaire interview with a hypnotherapist, and a scale questionnaire to test the effectiveness of hippotherapy (original design). Based on the interview with a therapist information concerning the following issues has been obtained: about changes that occurred in the development of the blind and partially-sighted while participating in the hippotherapy, their level of motivation to participate in these activities, involvement in the execution of specific tasks, attitudes towards the animal, as well as participation in sports and the results obtained by some of the disabled respondents in horsemanship. The effectiveness scale questionnaire contains 18 statements about the results achieved by the studied children in three areas: cognitive, social and physical. The respondent's (hippotherapist's) task was to respond by ticking one of four given answers.

Statistical treatment of the research material were made using chi-square independence test.

Results

According to the underlying concept of study the gathered empirical analysis focuses on two interrelated issues, namely the motivation of visually impaired children to participate in hippotherapy and the results of attending the course of this form of rehabilitation.

The motivation of visually impaired children to participate in hippotherapy

The basis for determining the level of motivation of the children to participate in hippotherapy is information obtained from therapists. Their task was to determine the relationship manifested by children to participate in the activities, such as obeying therapist's commands, performing new exercises, accepting challenges with an increasing level of difficulty.

According to the empirical material most of the children (46.7%) manifest high level of motivation to participate in hippotherapeutical activities. The second largest group (43.3%) consists of children with a medium level of motivation. A low level of involvement was noted only among three people. It has been also that 2/3rd of all children with low vision belong to a group of people with a high level of motivation to participate in the hippotherapy, and only slightly more than 1/4th of the blind. Consequently, the average level of motivation is twice as large among the blind (60.0%) than among partially sighted (26.7%) (Tab.1).

Tab. 1 The level of motivation of the blind and visually impaired children to participate in hippotherapy

| Motivation level for the participation in hippotherapy | Type of visual impairment | | | | Total | |
|--|---------------------------|------|------------|------|-------|-------|
| | Blind | | Low vision | | | |
| | N | % | N | % | N | % |
| High | 4 | 13,3 | 10 | 33,3 | 14 | 46,7 |
| Medium | 9 | 30,0 | 4 | 13,3 | 13 | 43,3 |
| Low | 2 | 6,7 | 1 | 3,4 | 3 | 10,0 |
| Total | 15 | 50,0 | 15 | 50,0 | 30 | 100,0 |

For most respondents the main source of motivation is riding a horse and the possibility of experiencing physical exercise and sport (40.0%). In the case of almost every fourth child what mobilizes them to take part in the classes is satisfaction from achievements and learning new skills (sense of agency). For every fifth person the main motivating factor is the mere fact of approaching a horse and being able to take care for it. In relatively few cases (6.7%) the source of motivation to participate in hippotherapy is pointed out as the opportunity to relax, or maintain contact with other people.

It is worth noting that among the respondents there are some individuals who have achieved a certain success in sport. This is the case of 36.7% of children. More than half of them (54.6%) took part in social events, the remaining 45.4% - in high-level competitions, including 3 people in the Special Olympics, and 2 people in the Polish Championship in dressage for people with disabilities and the International Competition of disabled people in dressage. The mere fact of participating in sport events, and even more recognized successes (subjects won high scores in the competitions) without a doubt significantly increased their motivation to participate in hippotherapy.

The level of importance of hippotherapy for visually impaired children can be inferred from data showing the relationship between the frequency of participation in activities and the motivation of respondents to participate in them. The correlation of these variables ($\chi^2(4, N=30) = 34,674$) has been demonstrated at a statistically significant level ($p=0.0008$), and the coefficient C_{kor} is 0.50 indeed indicates a visible connection between them. Studies show that a higher level of motivation is manifested by those who use this form of rehabilitation twice or three times a week (75.0% - high level, 25.0% - average). Less optimistic data is recorded in the group of children who only participate in hippotherapy once a week. Most of them (52.4%) manifest average intensity of motivation to participate in classes; high motivation is noted among every third child. This group also has three children with a low level of motivation.

A similar situation is observed in the case of another variable, namely the duration of the hippotherapeutical course. The more time a week was spent on hippotherapy, the higher was their level of motivation to participate in this form of therapy. This correlation is particularly evident in the example with two extreme groups relative to each other, i.e. a 30 minutes-per-week participation in hippotherapy (20 children), and those for which the duration is longer, and lasts at least 1 hour (10 children). The first group has almost twice as large number of children with average motivation level (55.0%) than that with the high (30.0%) intensity. In addition, the group also includes persons (10.0%), which exhibit low

intensity of desire to participate in activities. On the other hand, the situation presented in the case of persons qualified as the second group is quite different. Among them there are four times more children with high (80.0%) than average (20.0%) level of motivation. This fact is also confirmed by the statistical analysis. The resulting chi-square (χ^2 (2, N=30) = 6,956) has reached statistical significant value at $p=0.0309$, while the ratio C_{kor} is 0.57, thus confirming a real link between the analyzed variables.

In light of the above data, the following question arises: Is there a relationship between the level of motivation of visually impaired children to participate in hippotherapy and their achievements in these activities?

Motivation and the effectiveness of hippotherapy

As can be seen from general calculations, the studied population bifurcates into two, comparable in terms of size, groups of people, namely with average (53.3%) and high (46.7%) levels of effective hippotherapeutical impacts.

The overall level of hippotherapeutical effectiveness consists of three areas: cognitive, social and physical (Fig. 1).

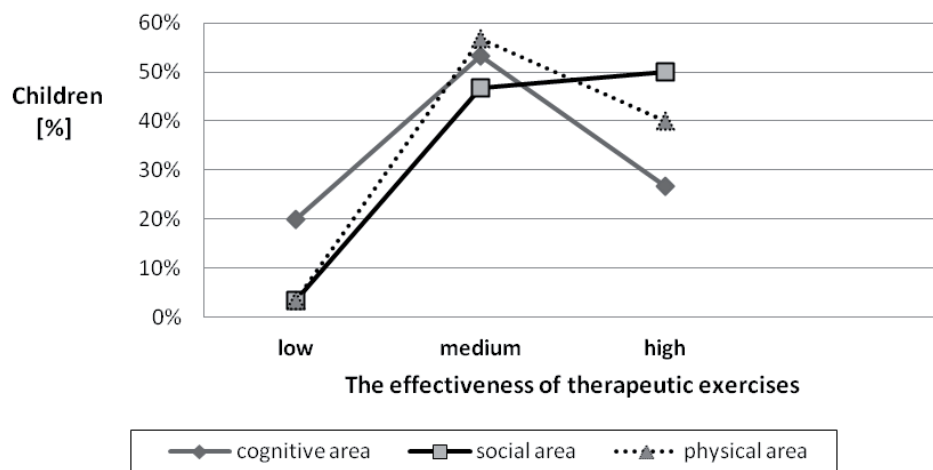


Fig. 1 The effectiveness of hippotherapy in the group of visually impaired children

Detailed analysis shows that the surveyed students achieve the best results in terms of social development. In the case of half of them they have been classified as high, whereas 46.7% - as medium. Only one child manifests low scores in this area. The hippotherapist characterizes the child in question as “locked in one’s own world,” who “often does not understand what other people say to them”, “having great difficulty in initiating interpersonal contact”.

The empirical material shows that the effectiveness of social co-operation among subjects consists of skills in team work, complying with social rules, and making social contacts. Further data obtained from the children as a result of participating in hippotherapy is associated with an increase in self-esteem and self-confidence. They also indicate an

increase in taking responsibility for themselves and other participants in the therapy (e.g. assisting colleagues in reaching the therapy and returning to boarding school), as well as taking care of the horses from therapeutic riding. As has been mentioned earlier, some of the children were involved in equestrian events, which is also important for their emotional and social development. Experiencing new situations arising in that respect, climate of competition, rivalry, the presence of the referees, the audience, etc. was for them a source of many experiences and emotions. It is also an opportunity to make new friends, cultivate friendship, and to overcome their own weaknesses and limitations. Achieved successes are a source of pride and joy, and a stepping stone to raising even further their social status among their peers.

Consequently, an attempt was made to further verify whether there is a significant relationship between the motivation of the children to participate in hippotherapy and the effects gained in the field of social development. To this end, an independent test of two variables was used – namely a chi-squared test. The obtained value $\chi^2(4, N=30) = 21,909$; $p=0,0002$, therefore demonstrates a significant association between the occurrence of the analyzed variables. The strength of association C_{kor} is 0.80, which indicates a strong positive relationship between motivation of visually impaired children to participate in hippotherapy and the effects obtained by them in the social sphere. Children with high levels of motivation achieve higher results than those with medium and low intensity of motivation to participate in hippotherapeutical activities. These relationships are illustrated by the Figure 2.

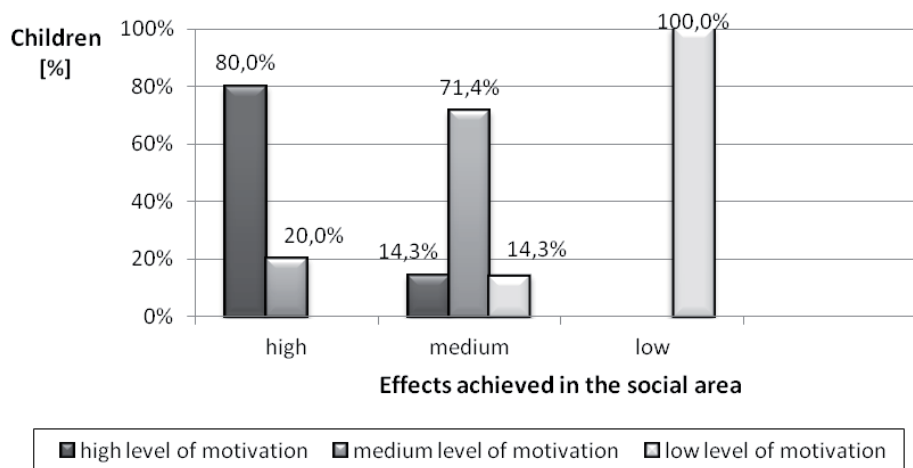


Fig. 2 The motivation of children with impaired hearing to participate in hippotherapy and the results achieved in the social sphere

$\chi^2=21,909$, $df=4$, $p=0,0002$ – statistically significant differences,

$C_{kor}=0,80$ – strong relationship between the variables

The empirical results show that hippotherapy conducted under the supervision of a specialist has obvious advantages in terms of the physical area. This impact comes from the unique influence of horse movements on the functioning of human body. This notion is confirmed in the studied population of children with visual impairment. The results achieved by 56.7% of students classify at the medium level, in the case of 40.0% - high. Only two children (blind) achieved a low score in this area. They are not very physically fit, because of visible overweight. Despite poor progress in physical development, the possibility of movement during hippotherapeutical classes is very important to them for health reasons.

The most important effects of hippotherapy in the physical realm, indicated by the therapists are a better posture and improved position of holding one's head straight. Also they mentioned some positive changes in keeping the balance, and overall increase in muscle strength and performance, as well as improvements in large and small kinetic skills. The occasion for this sort of improvement are handling exercises performed on horseback, taking care of the horse, and handling of the reins while riding.

The best results in terms of physical development are observed in the group of children with a high level of motivation to participate in hippotherapy. More than half (57.1%) achieved high scores, while the rest 42.9%, turn out as average. Among the students with medium level of motivation there are twice as many individuals with average results (61.5%) than high-performance effects in the physical area. Their group also contains one child who obtained low results. The lowest results in physical development (low or medium) are manifested in the group with low interest in therapeutical activities.

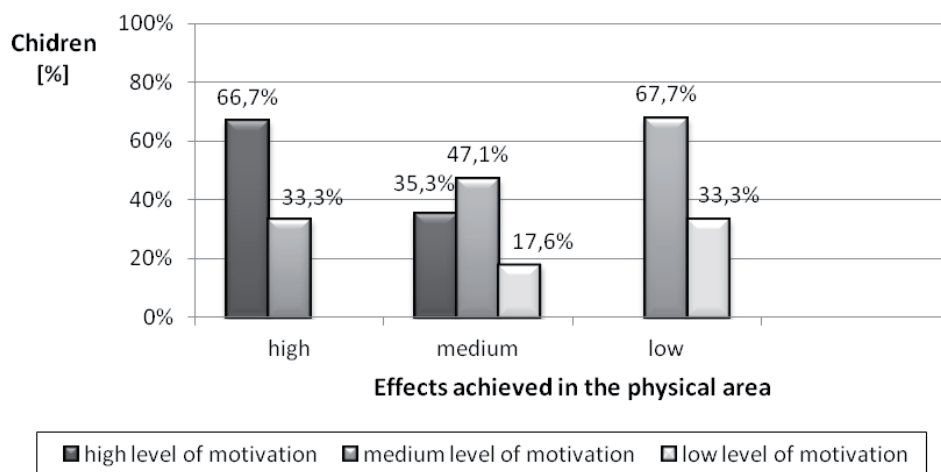


Fig. 3 The motivation of visually impaired children to participate in hippotherapy and the effects in their physical area

$\chi^2=9,5738$, $df=4$, $p=0,0483$ – statistically significant differences,

$C_{kor}=0,52$ – visible relationship between the variables

The distribution of the presented percentages indicates the existence of a significant relationship between the level of motivation of the children to participate in hippotherapy and their results in terms of physical development. This fact is also confirmed by the statistical analysis. The resulting chi-square has reached statistical significant value at $p=0.0483$, while the ratio C_{kor} is 0.52, thus confirming a real link between the analyzed variables (Fig. 3).

The last group in the analysis pertains to results obtained during hippotherapy in the area of cognitive functioning. The research shows that the effectiveness of the respondents in this area is the lowest. Although a similar case was noted when physical condition was concerned, where the majority (53.3%) of children obtained average results, however, the percentage of subjects achieving high performance is only at 26.7%, while with low effects - up to 20.0%.

According to hypnotherapists one very important effect of hippotherapy pertaining to cognitive area is a better orientation in space among visually impaired children. Restricted freedom of movement is one of the most serious consequences of impaired eyesight, creating the largest and most visible barrier in one's life. The ability to move freely enriches the cognitive realm, allowing for new experiences and observations of many phenomena to arise spontaneously. Improving spatial orientation as a result of hippotherapy has also a psychological significance, due to the fact that self-locomotion enables individuals to feel the satisfaction from overcoming their physical inactivity. Another indicator of efficiency in the area of cognitive development is mastering riding skills and preparing a horse for the exercises. A special attention was also paid to increasing concentration, the development of tactile and auditory sensitivity, learning to make quick decisions, but also to enriching the knowledge about horses, horse riding, etc.

The synthesis of presented data shows that the best results in the cognitive field is obtained by the students with high motivation to participate in hippotherapy. They were classified either as high (50.0%) or moderate (50.0%) results. Children with average motivation 53.8% reached medium scores, whereas 38.6% - low results. A similar situation is found in the case of three people manifesting low will to participate in hippotherapeutical activities: two of them obtained medium, and one - low effects with respect to cognitive development.

Presented qualitative analysis, which is confirmed by the statistical analysis demonstrates a significant relation between the presence of motivation among visually impaired students to participate in hippotherapy and the results obtained by them in the cognitive field. The correlation of these variables has been demonstrated at a statistically significant level ($p=0.0286$), and the coefficient C_{kor} is 0.63 indeed indicates a strong connection between them (Fig. 4).

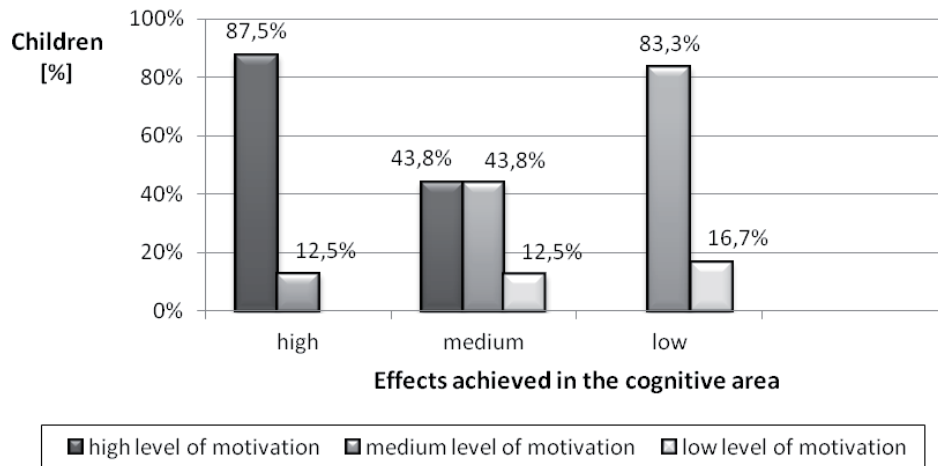


Fig. 4 The motivation of visually impaired children to participate in hippotherapy and their results achieved in the field of cognitive area
 $\chi^2=10,825$, $df=4$, $p=0,0286$ – statistically significant differences,
 $C_{kor} = 0,63$ – strong correlation between variables

Conclusion

The presented overview of research confirms the validity of exploration and using alternative solutions in the practice of rehabilitation. Indeed, hippotherapy is assuredly one to them. When organized properly it consequently brings often positive results in all aspects of development: physical, cognitive, and over and above social. A necessary condition for successful participation - as the study implies - is strong motivation of visually impaired children to participate in this form of rehabilitation. The willingness to participate in the classes is determined by many factors - the attractiveness of the course, possibility of experiencing positive sensations and emotions, but above all the experience of one's own sense of agency. Caretaking of a horse, riding a horse, and in some cases - participation in sport events are an invaluable source of pride and satisfaction. As a result, a mechanism of self-rehabilitaion comes about in a natural way - children actively participate in the rehabilitation process, they learn responsibility for themselves, their own actions - they become co-creators of their own development.

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