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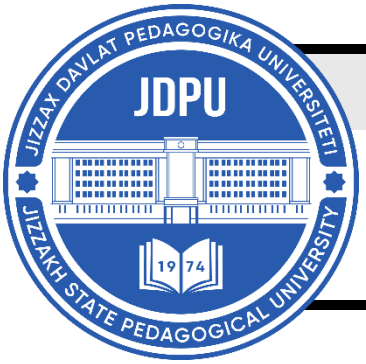
MENTAL ENLIGHTENMENT SCIENTIFIC – METHODOLOGICAL JOURNAL



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EFFECTIVENESS OF REHABILITATION FOR PERSONS WITH PHYSICAL DISABILITIES THROUGH HIPPOTHERAPY SESSIONS

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ABOUT ARTICLE

Key words: hippotherapy, rehabilitation, cerebral palsy, stroke, scoliosis, physical capability, motor activity.

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Abstract: In this article, the effectiveness of improving the health of people with disabilities through hippotherapy sessions was analyzed. The study was conducted with the participation of respondents diagnosed with cerebral palsy, stroke, and spinal curvature (scoliosis). The results showed that a two-month hippotherapy program significantly improved motor activity, muscle strength, balance, and posture. This methodology is recommended as an innovative and effective method for the rehabilitation of persons with disabilities.

Goals and objectives: development of proposals and recommendations for strengthening the health, functional development, and increasing motor activity of people with stroke, cerebral palsy, and spinal curvature using health-improving hippotherapy sessions.

Introduction. In all spheres of the world, in particular, special attention is paid to the popularization and development of adaptive physical education and sports among people with disabilities, increasing the level of physical fitness, and preserving and strengthening their health. Today, in world scientific and practical experience, large-scale, systematic, empirically

substantiated research is being conducted aimed at improving rehabilitation processes based on modern approaches, including increasing the health-improving and functional effectiveness of hippotherapy training. Large-scale work is being carried out to adapt hippotherapy classes to modern requirements, aimed at improving the health of people with stroke, cerebral palsy, and spinal curvature, taking into account their individual capabilities and abilities. Today, the issue of restoring the physical and functional state through hippotherapy sessions aimed at improving the health of individuals with this nosology is becoming increasingly relevant.

This dissertation research, to a certain extent, serves the effective implementation of the tasks stipulated in the Decrees of the President of the Republic of Uzbekistan No. PP-221 dated July 8, 2025 "On the Comprehensive Preparation of Athletes of Uzbekistan for the XXXIV Summer Olympic and XVIII Paralympic Games in Los Angeles," No. PP-3907 dated August 14, 2018 "On Measures to Raise the System of Spiritual, Moral, and Physically Harmonious Upbringing of Youth, Their Education and Training to a Qualitatively New Level," as well as in other regulatory legal documents related to this area..

Purpose of the study development of proposals and recommendations for strengthening the health, functional development, and increasing motor activity of people with stroke, cerebral palsy, and spinal curvature using health-improving hippotherapy sessions.

Research objectives:

development of an innovative training program for people with stroke, cerebral palsy, and spinal curvature, based on their physical condition, aimed at strengthening health, increasing functional development, and comprehensive motor activity through hippotherapy sessions, ensuring independent activity;

development of a rehabilitation system that increases the motor activity of people with this nosology, based on morphofunctional and physical fitness indicators, using exercises and active games performed when the horse is stationary and active;

development of a complex of rehabilitation exercises for people with stroke, cerebral palsy, and spinal curvature participating in hippotherapy classes, ensuring their comprehensive health improvement, functional development, and independent activity;

creation of a mobile application for the rehabilitation of people with stroke, cerebral palsy, and spinal curvature using innovative technologies;

The practical significance of the research results lies in the organization of hippotherapy classes with people with stroke, cerebral palsy, and spinal curvature, strengthening the health of people with stroke, cerebral palsy, and spinal curvature, having various physical and functional capabilities, using teaching aids and innovative methods, increasing the level of

comprehensive physical condition, and developing the professional activity of an adaptive physical education teacher. From a practical point of view, hippotherapy is carried out without special equipment, in a natural environment - directly working with a horse. This makes it an economically viable and widely implemented form of alternative therapy. Classes are organized on the basis of an individual approach, which is adapted to the respondent's condition, age, and degree of illness. At the same time, hippotherapy also serves as a means of social rehabilitation - it stabilizes the respondent's emotional state, increases self-confidence, and helps them return to an active lifestyle.

A training program and a set of special exercises used in hippotherapy classes, divided into three blocks, aimed at improving the health of students with postural disorders, have been introduced into the practice of secondary school No. 19 of the city of Chirchik, Tashkent region. (Reference No. 02-16/8178 of the Ministry of Sports of the Republic of Uzbekistan dated August 1, 2025). As a result, due to a complex of special exercises on the causes of spinal curvature, the absolute difference in the effectiveness of the health level was 0.9%, and the relative difference was 10.81%.

A training program and a set of special exercises used in hippotherapy classes, divided into three blocks, aimed at improving the health of people with cerebral palsy, have been introduced into practice at the Chirchik Olympic and Paralympic Sports Center. (Reference No. 02-16/8178 of the Ministry of Sports of the Republic of Uzbekistan dated August 1, 2025). As a result, the absolute difference in the increase in health and physical activity of people with cerebral palsy was 1.01%, the relative difference was 16.4%.

A training program and a set of special exercises used in hippotherapy classes, divided into three blocks, aimed at improving the health of people with a stroke, have been introduced into practice. (Reference No. 02-16/8178 of the Ministry of Sports of the Republic of Uzbekistan dated August 1, 2025). As a result, the absolute difference in the indicator of physical activity of people with stroke improved by 1.56%, the relative difference by 13.94%.

The absolute difference in the indicator of physical activity of people with stroke is 1.56%, the relative difference is 13.94%, the absolute difference in the increase in health and physical activity of people with cerebral palsy is 1.01%, the relative difference is 16.4%, and the effectiveness of the health level through a complex of special exercises for the causes of spinal curvature is 0.9%, the relative difference is 10.81%. (Reference No. 02-16/8178 of the Ministry of Sports of the Republic of Uzbekistan dated August 1, 2025).

Table 1

Comparative results of the statistical characteristics of the test results for determining the level of physical fitness of people with cerebral palsy in EG and CG at the beginning of the pedagogical study.

No	Control tests	Control group n =10		Experimental group n =10	
		X±σ	V%	X±σ	V %
1	Put small balls in a box (a total of 20 balls)	9,1±1.20	13,16	8,5±1.08	12,71
2	Ball throw (times)	5,8±0,79	13,60	5,1±0,74	14,47
3	Sitting (sec.)	10,8±1,23	11,38	11,3±1,25	11,08
4	Step (times)	6,5±0,97	14,95	4,1±0,74	16,00
5	Standing (sec.)	8,2±0,88	10,82	8,1±0,87	10,81
6	Handstand (number of times)	5,5±0,86	15,47	5,5±0,85	15,45
7	Crawling (times)	4,9±0,74	15,06	3,3±0,48	14,64

According to Table 1, the results of the "putting small balls in a box" test show that the average indicator in the experimental group was 8.5±1.08 times, while in the control group it was 9.1±1.20 times. In the "ball throwing" test, the average indicator in the experimental group was 5.1±0.74 times, while in the control group it was 5.8±0.79. From the obtained results, it can be seen that the indicators in the study and control groups practically do not differ from each other, which was determined by the method of mathematical statistics.

Table 2

Comparative statistical analysis of the pedagogical control test for subjects with stroke at the beginning of the study (n=10)

No	Types of tests	Experimental group		Control group	
		($\bar{X}$ ±σ)	V %	($\bar{X}$ ±σ)	V %
1	Raising and lowering the right hand (times)	8,2±1,14	13,85	8,8±1,23	13,97
2	Raising and lowering left arm (times)	6,6±0,97	14,64	7,4±0,97	13,06
3	Raising and lowering the leg with bent left knee (number of times)	23,1±2,42	10,50	23,1±2,18	9,45
4	Raising and lowering the leg with the right knee bent (times)	17,4±2,12	12,18	18,1±1,94	10,80
5	Maintaining static balance on one leg with eyes closed (sec.)	9,1±1,20	13,16	9,1±1,20	13,16
6	Maintaining static balance on one leg with eyes open (sec.)	12,1±1,73	14,29	12,3±1,42	11,53

According to Table 2, the average indicator for the "Raising and Lowering of the Right Hand" test in the experimental group was 8.2±1.14 times, and in the control group - 8.8±1.23 times. It was established that the average indicator in the "lifting and lowering of the left arm" in the experimental group was 6.6±0.97 times, and in the control group - 7.4±0.97 times. The next indicator, "lifting and lowering the leg with the left knee bent," averaged 23.1±2.42 seconds in the experimental group and 23.1±2.18 seconds in the control group. The obtained results indicate that the indicators in the study and control groups did not differ from each other.

Table 3

Comparative statistical analysis of changes in the level of indicators of participants with spinal disorders at the beginning of the pedagogical experiment

Types of tests		**($\bar{X}$ ±σ)**	**V %**
Control indicators were determined using a scoliometer and measured in degrees.	TG	8,14±0,94	11,56
	NG	7,92±0,94	11,81

This table provides information about the participants with spinal disorders. The number of students is 10, and the experimental group and the control group are the indicators at the beginning of the study. From the initial data of all students, we learned that they all belong to the 1st and 2nd degrees of spinal curvature. For reference, the first degree (1°-10°) and the second degree (11°-25°) are calculated. The indicators of the students of the experimental and control groups at the beginning of the study were practically the same. The number of students is also distributed equally. These indicators show that at the beginning of the pedagogical research, it was found that there was practically no difference between the research and control groups on the scoliometer device, and the results obtained expressed the similarity of the results of the participants of both groups, which allowed us to continue our research..

Conclusions. The research results showed that hippotherapy is an effective method for the physical development of people with disabilities. This method increases muscle activity, improves balance and coordination, which helps restore the body's overall functional state. Also, through hippotherapy, muscle elasticity and endurance increased, and an improvement in motor ability was observed. Hippotherapy not only improves physical health, but also has a positive effect on a person's psycho-emotional state. The results of the study showed that interaction with a horse increases the subjects' self-confidence, reduces depression and stress, and accelerates the process of social adaptation. Therefore, hippotherapy plays an important role in the process of social rehabilitation. During the study, hippotherapy proved to be an

effective method for these three types of disability. In particular, in children with scoliosis, the degree of spinal curvature decreased, in subjects with cerebral palsy, balance and coordination improved, and in subjects with stroke, functional restoration of movement was observed. The developed program of special exercises based on hippotherapy contributed to an increase in the level of general physical activity of the study participants. In the course of the study, the results of the experimental group were significantly higher compared to the control group, which confirms the effectiveness of the special rehabilitation program.

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