

The Role Of Motor Rehabilitation And Sensory Education In Adapted Physical Activity For People With Cerebral Palsy

¹Alaa Abdullah Mohsin

Abstract

Cerebral palsy is a neurological disease that causes a physical defect that develops and leads to a physical disability during the stages of human development and this occurs in different parts of the body related to the performance of motor functions, hence the importance of motor rehabilitation, which contributes to strengthening the person's skill and increasing the level of motor and functional efficiency that gives the patient a kind of independence and self-reliance, as kinetic rehabilitation is one of the most important means of physical therapy, which is concerned with the body and the way to provoke its movements in order to maintain functional work and rehabilitate muscle tissue after injury, Movement therapy is one of the most effective natural treatments, especially if it is used in an organized, accurate and consistent manner with the dysfunction of the body, due to its reliance on the concepts and laws of kinesiology in building therapeutic systems to restore and renew the motor functions of all parts of the body, especially the dependence of the main part of rehabilitation on the performance of exercises Which aims to maintain flexibility and muscle strength, prevent joint and bone deformities, and sensory stimulation to reorganize the functions of motor neurons. In addition to the exercises associated with the process of muscle contraction is a specialist physiotherapist assesses the movement and balance the other hand, the specialist Alartfinu all exercises for training kinesthetic and recommend the training needed by the injured at each age stage and selection of

¹Ministry of Higher Education/ Iraq / alaafitness1@gmail.com

devices The assistance he needs, and both help the injured to adapt to his disability and give him sensory and motor experience. Physiotherapy helps him learn the best ways of movement and bodily balance, and then help the injured to stand and walk naturally or by using assistive prosthetic devices. It is known that strengthening muscles and reaching the normal range of motion for joints is the basis In this research, we will present a set of exercises and adapted motor exercises that help the person with cerebral palsy to reach a good level of motor flexibility.

Key words: *cerebral palsy - motor rehabilitation - sensory education - adapted physical activity -motor disability.*

Introduction

the practice of sports is linked to a consensual relationship with health of all kinds, whether psychological, mental or physical, because health, especially physical, has many positive effects on the individual's condition and adaptation, and for this purpose a plan has been developed to care for the category of physically disabled people, especially those with cerebral palsy where it became physical therapy is necessary and successful for this class state of the injured, especially if they are supported by an active athlete rehabilitation commensurate with the injured potential and the degree of disability, confirmed many of the studies that physical disabilities and motor with an impact on the psychological and social aspects of the individual patient and his family, which in turn have an important role in Alleviating the physical and health suffering of the disabled, and the more the family provides support and acceptance and makes sure that he joins the classes of motor rehabilitation and sensory education, the more he reaches a good level of independence and self-reliance, but if its role in care is absent here, the family may become an additional source of the source of his suffering, for this We found many studies that focus on the importance of parents' desire to help sufferers develop their motor side through some appropriate physical activities that facilitate their work. Social integration. In this context, Al-Khatib and Al-Hadidi stressed that "the early detection of cases of cerebral palsy, sensory-motor therapeutic intervention and early rehabilitation guarantee the best results in the field of independence of the patient." (Al-Khatib, 2003), and it is known that the delay in motor development in people with cerebral palsy is often accompanied by abnormal movement patterns and abnormal muscle

tension that are emphasized during the process of sensorimotor support and rehabilitation, which maintains balance and increases muscle strength.

We cannot talk about the educational aspect of a person with cerebral palsy without focusing on sensorimotor education and motor rehabilitation in the educational process, especially in the early years of his life, as motor re-education for this category focuses on strength and flexibility exercises, as well as developing motor performance represented in the skills Gross and fine movement, which is one of the important elements that help physical fitness, as all types of cerebral palsy are described as having an abnormal condition that affects muscle tonic, which means that "a person slips in his seat and cannot sit straight or affects his reflexive movements or motor development and coordination ". (Al-Zoghbi, 2003), and a patient with cerebral palsy can suffer from joint and bone deformities and pathological contracture, which means that "muscles and joints are in a permanent and tight position. walking on the edge of the toes, a deformities push the patient to walk in a way similar to the doll movement, which is common among people with cerebral palsy who are able to walk. (Qamish, 2007), however, we can move clumsily represent up to disabilities severe that make it impossible for motor coordination The level of practical application, in addition to all the above-mentioned physical and motor problems, the psychological state of this group deteriorates and their self-esteem is low, so purposeful physical activity can be a savior for this category of various deviations and facilitate the process of their conscious acceptance and integration into society. (Gaddafi, 1998)

Therefore, the work that these patients accomplish, no matter how simple they are, must be appreciated and not despised or belittled in order not to kill his self-confidence and encourage him to do them because it is the first pillar for developing the rest of the motor abilities, and from this standpoint it becomes clear to us that sports practice, adapted physical activities and even sensory-motor activities and exercises Simple can activate the motor function of this category of sufferers, improve their psychological state, and help them integrate into society. From this point of view, we came up with the following questions:

Can adapted physical activity and sensorimotor education contribute to the development of motor abilities in the category of people with cerebral palsy?

Does adapted physical activity contribute to reducing the degree of muscle tension for a person with cerebral palsy?

Does sensorimotor education and motor rehabilitation help in improving the psychological state of this group?

Research hypotheses: Conditioned physical activity and sensorimotor education contribute to the development of motor abilities in the category of people with cerebral palsy. Conditioned physical activity contributes to reducing the degree of muscle tension in a person with cerebral palsy. Sensory-motor education and motor rehabilitation contribute to improving the psychological state of this group.

The importance of the study: Emphasis on the importance of sensorimotor education in the development and development of fine and general movement in this category. Knowing the extent to which the adapted physical activity contributes to reducing the degree of muscle tension, counting the person with cerebral palsy, by suggesting a set of exercises and motor activities focused on walking, climbing, and motor exercises to stimulate the muscles of the hand and leg, Highlighting the importance of adapted physical activity in reducing the risk of motor disability, maintaining motor, mental and psychological development, and gaining physical fitness for this category of sufferers, To highlight the importance of adapted physical activity and sensorimotor education in reducing psychological problems for people with cerebral palsy.

Literature review

Determine terms:

Cerebral palsy (idiom): It is “a disorder that affects the brain early in the patient’s life, especially during the incomplete development of the cerebral cortex responsible for movement, which leads to a deficit in neuromuscular ability and a lack of voluntary muscle control or voluntary movements.” (Khatib, 2003), and the most important manifestations of the lack of consistency in Almhara t motor like to be Aladila movement is very fast t or slow or a mixture between them may be accompanied by cerebral palsy, sensory disorders and also verbal language disorders can be cerebral palsy causes problems and deformities kinetics prevent the injured from Carrying out motor activities and the causes of this disability are either hereditary or acquired. (Al-Zaraa, 2006)

Cerebral palsy (procedural): The researcher agrees with the definition of (Al-Khatib) and boasts as a procedural definition of the concept of cerebral palsy.

Research methodology and field procedures

First: Research Methodology: The researcher adopted the (case study) approach, which is concerned with studying individual, bilateral and collective phenomena and cases, as he focuses on diagnosing them through the information collected by the researcher and tracing their sources to obtain the facts that cause the case and reach results and treatments through his integrated study of the subject. the community research and appointed smell for a group of infected between the ages of (1 - 10 4 years old) people with cerebral palsy from gait type scissors and walking on the edge of the fingers and that's what makes them find it difficult to control the upper limbs as well as the bottom.

- Rehabilitation motor: a training or re - person training to help him attain a good level of functional motor efficiency, and improve the functions of motor and improve motor function and control involuntary of prevention of the occurrence of distortions Alaz m j of treatment and when they occur. (Al-Smadi, 1998), and motor rehabilitation for the cerebral palsy aims to integrate this category of young buds, modify the environment around them and help them achieve the highest degree of motor independence. (Al-Ghani M., 2000), motor rehabilitation, occupational therapy, psychological, sensory and motor therapy, educational study assistance and family assistance are achieved where all members of the study group undergo motor rehabilitation classes.
- Adapted physical activity: It is an active pedagogical method that plays a major role in the real care and social integration of the kinesically injured category through basic physical development, which is based on the development of motor, sensory, mental and psychological abilities and helps the injured to social integration by gaining independence and the ability to adapt. Physical conditioning enhances immunity from chronic diseases in the category of people with cerebral palsy. (Sulaiman, 2001), and the adapted physical activity aims to accompany the injured and help them to show their competence and their physical, psychological, kinesthetic and sensory abilities in order to develop and exploit through recreational physical activities and

sports activities, Rehabilitation and enjoyment of it, which increases his self-confidence and strengthens his motor side.

- Sensory kinetic education: It is an education that is carried out through physical movement and the senses, as it knows the patient what is related to himself and his body, and through it he develops his fitness, concepts and values at all levels of mental, physical, emotional and kinetic, and it is the closest concept to physical education.

The research community and its sample: The study population consisted of four cases (2 females) and (2 males) with cerebral palsy of the scissors gait type and walking on the tips of the fingers. Table No. 1):

Table No. 1

Research community and sample

NS	sex	Age	injury type	type of treatment
1	Male	10	Cerebral palsy, scissors gait	Physiotherapy / Sensory Kinesiology / Swimming
2	Male	8	Cerebral palsy, walking on tiptoes	Sensorimotor education / swimming / arthropod therapy (balance exercises)
3	feminine	10	Cerebral palsy, scissors gait	Physiotherapy (motor rehabilitation)
4	feminine	7	Cerebral palsy, walking on tiptoes	Physiotherapy/ arthropod therapy/ sensorimotor education

Program activities and tools used to achieve research goals: Referring to the literature of theoretical research on the subject of cerebral palsy and all the findings of previous studies, researchers and practitioners in the field, we designed a set of adapted activities to help the study group reach a certain level of motor flexibility, with the help of a specialist in motor rehabilitation as well as assistance Parents by repeating some easy exercises applied in the health rehabilitation hall and the physiotherapy hall at home.

- Activities for the development of fine motor skills: It is a set of exercises and motor skills that depend on the small voluntary muscles such as the fingers and toes :

1- Cutting activity: It is activities to stimulate the movement of the hands such as cutting straight lines, cutting curved lines, cutting lines that contain angles, cutting two pieces of cardboard to increase the thickness of the paper and thus increase the muscular strength of the fingers of the hand.

2- Activity The Paste: Here the paste forms a variety of different shapes and sizes on different surfaces, such as colored paper, wool, grain, such as (lentils, wheat and rice), small pieces of cloth.

3- Coloring activity: using large drawings and then gradient until we reach small drawings. Here, the patient must control the movement of the fingers in order to accurately color the drawing, as large, medium and small papers, various crayons, and water and earth colors were used.

4- Sorting exercises: They are simple exercises aimed at stimulating the fine movement of the hands by categorizing and sorting different shapes and parts of wooden and plastic toys and tools of different shapes, types and sizes, various grains and legumes, cotton glue, wool and other tools for developing sensory-motor skills, all of these exercises It helps to stimulate and strengthen the fine muscles of the person with cerebral palsy.

5- Exercises based on self-care and independence skills: These exercises are very simple and the mother can do them on her own, such as opening and closing the buttons of the shirt, tying and opening shoelaces, carrying things and collecting them in small boxes, and working with dough.

- Activities for the development of general movement skills:

1- Standing exercise: The aim is to alert the body to change positions and carry body weight on the feet by alerting and strengthening the muscles of the head, back and trunk, alerting the pelvic muscles and improving the movement of joints.

2- The flipping and head control exercise: It is a kinetic exercise that depends mainly on changing the motor positions of the patient and helps in increasing the flexibility of the body, reducing tension, increasing alertness and internal balance of the body, as well as increasing the control of the muscles of the trunk and pelvis.

3- Cat position exercise: or what is known as the exercise of standing on four sides. This exercise aims to reduce the general muscle tension of the body and increase stability and general balance

in addition to strengthening the back, trunk and neck muscles. This exercise also strengthens the muscles of the hands and increases their endurance.

4- Climbing exercise over the cylinder: It is an important and easy exercise to strengthen the neck and head muscles and improve access to things with the hands. To reach the following result (that the victim raises his head and looks at the toy and extends his hand and tries to get it).

- Various adapted movement exercises: walking, running and jumping exercises in case of lower extremity injuries, which are suggested exercises to be done with family members in an entertaining framework in organized ways and for a specific period of time not exceeding 20 minutes per day.

- Therapeutic exercises in warm water have many physiological effects as it helps to relax the muscles and increases the widening of the diameter of the blood vessels and thus increases food and oxygen for the different tissues of the body, thus improving their performance.

Discuss the results

After applying the aforementioned activities and exercises to the study sample for a period of time estimated at about (30) days, some difficult physical activities were applied by a specialist in psychomotor rehabilitation. As for the easy activities, they were applied by mothers after training on that. The following is a discussion of the research hypotheses: First hypothesis : Adapted physical activity and sensorimotor education contribute to the development of motor abilities in the category of people with cerebral palsy: Through the activities and exercises presented during the training and treatment sessions for the development of general and fine movement, it was found that motor abilities improved to varying degrees in the four cases, and this appeared through the following :

1- General and fine movement activities contributed to improving the motor skills of the injured, as they increased their ability to hold things correctly, which made it easier for them to do many skills and activities of daily life independently. The development was noticeable and good in the movement of the hands, especially in the case of holding the pen and paper, holding the book and turning the page And the use of some tools necessary in daily life, such as holding a spoon, eating and wearing clothes on their own.

2- Increasing the ability to sit and stand without supports or assistance, as well as performing some movements such as climbing and moving in the surrounding environment and playing with a bicycle with the help of the mother or another person, which was impossible in the two cases who suffer from cerebral palsy of the scissors gait type. The standing position, balance and movement necessary for walking, especially The two cases who suffer from cerebral palsy type of walking on tiptoes and have become more able to walk on their own without aids or the help of parents.

3- Increasing their ability to control the movement of the head, neck and trunk, which increased their ability to maintain a healthy and sound session.

The second hypothesis: contributes to physical activity adapted to reduce the degree of muscle tension when infected with cerebral palsy: noticed through the activities of physical air - conditioned applied it contributed to the reduction of the degree of muscular tension when infected with cerebral palsy emerged through:

1- A marked improvement in the relaxation of muscle tone which appeared clearly through the patient's ability to conducting an exercise without setting the cat to fall on his stomach after 6 servings of training.

2- Climbing exercises that were as exciting to the muscles of the hands where she helped the process of tensile and stick rope to increase flexibility of the arms and facilitate the positioning of special legs and that the cases were subject to the activity of walking non - subsidized devices compensatory every day where he began walking time duration of activity is estimated at 10 minutes at the start until we got in the last Walking up to 30 minutes every day, which made the injured get used to these exercises and increase their endurance. The members of the research sample were able to recover some of the required motor skills by relying on some prosthetic devices that help them face the challenges of daily life, especially meeting their necessary needs and going to school.

3- After performing swimming exercises in warm water, two cases of the study group members, especially those who were doing the same exercises, reported a strong improvement, the absence of numbness at the level of the feet, and a significant improvement in the control of the muscles of the back, feet and arms.

The third hypothesis: Sensory kinetic education and kinesthetic rehabilitation contribute to improving the psychological state of this group of sufferers. It turned out through the regular practice of the activities suggested that it contributed directly to the improvement of deviation cognitive abilities, emotional and psychological when infected and helped reduce the psychological tensions resulting from daily life where pressure has become the ability to:

1- Overcoming moments of frustration, being patient, increasing the desire for life and love of team play, which increased their ability to focus while performing motor exercises, especially for males.

2- Develop friendship and familiarity with their colleagues who have the same disorder because it brings them together group exercises and thus accept them for each other as well as their acceptance of others because he feels pleasure and therefore his idea of physical activities is an area for fun, play and happiness rather than a place for treatment and feeling pain and through those exercises and group activities they gained Different motor skills facilitated the process of communicating with others. Finally, we say that the objectives of this research have been achieved by reaching an improvement in motor performance in general, as well as the improvement in the psychological and emotional state in the four cases.

Thus, the cerebral palsy is a disability affecting human and hindered from living a normal way that makes physical therapy and re - education of sensory motor demand essential in their lives to make it easier for them to adapt and cope with this disability may use a specialist in re - qualification kinesthetic some skills simple may look and other look Funny, but in fact, it achieves great purposes, such as increasing and strengthening motor skills, which increases the patient's self-confidence. Therefore, attention to the psychological and educational aspect of this category is achieved by registering them in sports clubs that facilitate their mixing with their peers with the same disability and benefit from their experiences, as well as intensifying physical therapy and motor care classes. This is what appeared with the first case, which received regular physiotherapy classes, in addition to a variety of intense motor and physical activities that increased their muscular flexibility. On the other hand, there was great support from the family, especially the mother of the first case, who was persistent in practicing exercises and motor exercises With her daughter at home, which made her more fit and reached a very advanced

stage, which is walking without crutches and eating alone in addition to Sitting without supports on the chair, and this confirms that the programs for developing motor performance in cerebral palsy patients have a positive effect in increasing flexibility, balance, motor ability, and the length of the walking stride for cerebral palsy patients, as well as the presence of statistically significant differences between the pre and post measurements in the choices of motor activities for cerebral palsy patients in favor of Dimensional measurements in the following motor activities :

- The physical activity of walking.
- Motor activity from a prone position.
- Motor activity of mobility.
- Motor activity of climbing.
- Movement activities of the hands.

The researcher finds the need for a combination of medical treatment and activity sports rehabilitation, which is in line with the capabilities of the injured because they occur impact positively on the functions of members of the motor. Improvement was not limited to the motor and physical only side with members of the research group, but also appeared in social skills development and raise self - esteem and help the injured physically on the psychological and social harmony with others and help him accept hit him and make it more integrated into the social life appeared so especially evident when the fourth case and the case first, and this confirms the role of adapted sports activity in the social integration of the physically injured, as the researcher confirms that this activity increases the individual's acceptance of his disability and facilitates the process of social integration.

Conclusion

Practicing activities of physical and sports an important part in the rehabilitation and treatment of people with cerebral palsy and in sound their development after the disease to compensate for the injury in order to achieve maximum fitness with their remaining abilities and that physical therapy is an important base to improve walking and movement the way and work to lengthen muscles to limit the contraction where many of the experts stressed that the use of the infected cerebral palsy program a natural cure for life is something important to maintain muscle tone and

installation of the bone also helps rehabilitation motor to learn the best ways of movement and balance physical and then help the injured to stand normal walking or using the devices compensatory Assistance such as a crutch or a wheelchair, as well as training the hands to use them in eating and drinking.

What we found in the end is that the adapted physical activity and sensorimotor education play a significant role in reducing the risks of motor disability, and the more a group of studies improves and they succeed in doing a specific exercise, the more this increases their self-confidence, their self-esteem rises, and they gain a decent level of physical fitness.

References

- 1- Abdul Aziz Al-Sartawi and Jamil Al-Smadi. (1998). Physical and health disability. Dubai: Al Falah Library for Publishing and Distribution.
- 2- Abdul Rahman Syed Suleiman. (2001). Physical disabilities (concept, classifications, treatment methods). Egypt: Zahraa Al Sharq Library.
- 3- Ahmed Mohammed Al-Zoghbi. (2003). Special education for the gifted and the handicapped and ways to treat and guide them. Amman: Zahran House.
- 4- Jamal Khatib. (2003).
- 5- Khatib. (2003). Cerebral Palsy and Motor Disability - A Guide for Teachers and Parents. Jordan: Dar Al-Fikr.
- 6- Mahmoud Salah El-Din Abdel-Ghani. (2000). The effect of a proposed exercise program to rehabilitate the affected muscles in cases of paraplegia. Iraq: Dr. n.
- 7- Mustafa Nour al-Qamsh. (2007). Psychology of play for people with special needs. Jordan: Dr. n.
- 8- Nayef bin Abdul Zaraa. (2006). Rehabilitation of people with special needs. Jordan: Dar Al-Fikr for Publishing and Distribution.
- 9- Ramadan Muhammed Gaddafi. (1998). The psychology of disability. Libya: Arab Book House.
- 10- Salah El-Din Abdel-Ghani. (2000).