Can exercise improve cerebral palsy argumentative essay

Sociology, Community

Cerebral palsy or the medicinal name static encephalopathy is the group name used to explain a band of chronic movement disorders which affects body and muscle dexterity. These disorders are generally caused by injury to some areas of brain. The difficulty in movement can diverge from just visible to exceedingly severe.

Cerebral palsy is not a hereditary disorder and there exists no mechanism to predict the chances of baby to suffer from this condition. Cerebral palsy can’t be diagnosed at birth and is identified within the initial three years. Also, the conditions symptoms are unique for every individual and the people suffering from this disease have diverse symptoms. This disease takes its name from cerebral meaning brain and palsy which means poor muscle control and weakness of muscles. The Body parts necessary for making movements, that is, muscles, nerves, and spinal cord are functional, however, the brain, which sends the messages to body parts for movement is not able to transmit the message properly. The muscles affected either becomes loose or rigid, or the person may have coordination and balance problem or the loss of control over muscle.

Cerebral palsy generally occurs at some point in fetal development prior to, during, or soon after birth, or through infancy. Seventy percent of cases of this disease happen in the womb. Remaining cases happens due to problems in delivery or trauma post birth. As we have seen though its symptoms may alter over time, cerebral palsy is mainly not a progressive state, as brain damage does not deteriorate further. Nevertheless, secondary conditions connected with cerebral palsy, like rigidity of muscles changes with age and

deteriorate owing to the physical stress. With appropriate treatment, it is possible that this condition can improve or does not get worse.

Training and therapy and the new techniques like botox injections aids in improving the condition of the patients. Exercise therapies have the capability to significantly improve the attitude of the patient and provide them a huge sense of achievement. The exercise augments the quantity of oxygen transported to brain and can lighten stress. Swimming is known to be moderately helpful during cerebral palsy management, deriving most benefits in a warmer pool. Movements conducted in water are easier and more efficient for the muscles. Hippotherapy or the horseback riding is also beneficial for improving the condition and it involves trained physical and occupational therapists in management of patients with movement problems. The benefits are derived from the movement of horse. The exercise strategy is used as a component of integrated plan of treatment to attain functional results in cerebral palsy treatment.

It is evident from the cases that exercise improves the neuromuscular function in cerebral palsy condition, which consequently augments the total function in everyday activities and motor performance. As the person increases in age, the requirement for strength to perform activities of daily living (ADLs) without help also increases. People suffering from cerebral palsy have reported the decline in functional abilities with progressing age. The decline with age may include symptoms such as fatigue, pain, progressive musculoskeletal deformity and dysfunction and a decrease in functional ambulation. Exercise can play a crucial role in the prevention of

many secondary conditions and in the delay of functional decline associated with aging. Muscle weakness is frequent in people with cerebral palsy and it directly affects functional ability. Several studies have revealed the enhanced ambulation through resistance training.

People with cerebral palsy can benefit by incorporating the resistance training using several devices as demonstrated by research conducted by McCubbin and Shasby. They considered the impact of a resistance exercise on elbow extensor strength. The study was conducted with 30 children and youngsters with varying level of cerebral palsy and they all were aged between 10 and 20 years. The experimental children were coordinated on category and rigorousness of cerebral palsy by means of the categorization system provided by the National Association of Sport for Cerebral Palsy. The investigators deployed two dissimilar training procedures; recurring movement exercise which did not involve any struggle and isokinetic exercise. People in control collection sustained their customary therapy in particular schools and were found to be more efficient in terms of neuromotor funcationality. McCubbin and Shasby suggested additional research by combining people on additional variables like age, sex and others and collecting the data by repeating the movements thru time and torque, by altering the speed of isokinetic exercise on the different forms of cerebral palsy.

Holland and Steadward considered the effects of exercises of flexibility and resistance on seven influential athletes with condition of cerebral palsy. The research revealed the amplified strength in elbow extension and flexion of all

athletes. They also revealed quadricep/hamstring enhancement for the athletes who were able to walk, three in number. Flexibility exercise resulted in improvement of active and inactive range of motion, the active range showing an increased improvement. Fine motor assignments enhanced in six athletes out of seven. They illustrates that " athletes suffering from cerebral palsy can take part in severe strength training sessions without undergoing damaging effects in elasticity and spasticity."

King et al. conducted research to assess the viability of improving the way of walking in children with condition of cerebral palsy deploying the tricycle hip-extensor. Their first supposition was if the strength of hip extensor could be developed, resultantly gait would develop. After functioning with children for 10 weeks on this particularly modified tricycle, there was no apparent enhancement in strength still, the improvement in way of walking resulted due to continuous exercise. The especially created hip-extensor tricycle stimulated muscles of hip-extensor comparable to walking. The investigators recorded that exercising with a machine that causes a standing movement prototype same as walking actually enhances motor control in steps. Though the gait improved, there was no improvement in strength of hip extensor.

The capacity to perform physical work of adult individuals with cerebral palsy is considerable lower in comparison to normal individuals and studies suggest that people suffering from cerebral palsy need more muscle activity to perform tasks in comparison to people without any disability. Oxygen pulse, higher oxygen uptake and RER happen at a given workload for people with cerebral palsy. In association with increased energy consumption the

children with condition of cerebral palsy are usually smaller, have high body fat percentage, and are not as physically active as normal children. cardio-vascular exercise is reported to be beneficial for condition of cerebral palsy and the aerobic exercises augments the strength of lower-extremity, reduces energy required to ambulate, and enhances gross motor function for adolescents with spastic cerebral palsy.

Out of the pioneer researchers to evaluate the cardiovascular strength levels of people with cerebral palsy, one was the physiologist, the Ake Lundberg. The objective of his previous studies was to establish the maximum aerobic power of people with spastic or paroxysmal cerebral palsy. Lundberg calculated the aerobic control of five young men and nine children with spastic or paroxysmal diplegia. Five men without disabilities and nine children without disabilities became the control group. The level of disability varied from slight to severe. All experiments were conducted on a ergometer with bicycle which braked mechanically. Results demonstrated that “ the persons with condition of cerebral palsy had values lower for oxygen uptake, heart rate, blood lactate concentrations and ventilation in comparison to the people in control group. Physical capacity to work at per minute 170 beats was actually just half of the normal controls”.

A study conducted later, Lundberg researched longitudinally the capacity to perform physical work and aerobic control. The experiment was conducted with 19 children with condition of spastic diplegia and the results were compared with the results obtained by conducting the same experiment on a group of 12 normal children comprising the control group and were of the

similar sex and age”. The level of dysfunction varied from trivial to quite severe. Consumption of oxygen, heart rate, capacity for physical work at 170 heart rate, concentration of blood lactate and pulmonary ventilation were calculated during maximal and submaximal work on the bicycle ergometer twice or thrice in a year for a period of six years. Fitness level (wok capacity and VO2) were advanced for the group labeled as control in comparison to people with condition of cerebral palsy, and in six years there was no further increase in the gap. Quite interesting, the complete values for work capacity for physical work and aerobic power augmented in between 12 and 18 years in the groups.

When we consider the impact of the exercise on the mobility and movements of the persons suffering with cerebral palsy, it is concluded that the different forms of exercises are beneficial for improving the condition of cerebral palsy. Also, the exercises like fitness, resistance and cardiovascular not only improves the motor regulations of muscles but also delays the functional decline of muscles as the secondary condition. The rate of movement of persons with cerebral palsy is lower than the persons without deformity and their energy requirement is higher than the persons without deformity, still several researches conducted to test the effect of exercises on people with cerebral palsy has revealed positive results.

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