22 - THE INFLUENCE OF SWIMMING IN DEVELOPMENT OF MOTOR COORDINATION OF CHILDREN WITH DOWN SYNDROME

IGOR FILIPE DE SOUZA SILVA
HILTON MARTINS E SILVA
MESAQUE SILVA CORREIA
CENTRO DE ENSINO SUPERIOR DO AMAPÁ-CEAP, MACAPÁ, AMAPÁ, BRASIL
igor_filipe_1.12@hotmail.com

1-INTRODUCTION

Down Syndrome is a chromosomal abnormality that occurs due to a genetic accident, people who are affected by this syndrome have 47 chromosomes, with a normal human being is to have 46, these are divided into 23 pairs, this extra chromosome is present in the 21 pair, thereby Down syndrome is also known as trisomy 21. Children who have Down syndrome have delayed development compared to children considered normal for the anatomical pattern of society. In this same perspective Varela (2006, p. 19) clarifies that "Down syndrome is a genetic disorder that causes developmental delay, both the motor functions of the body, such as mental functions". The first to study and write about the characteristics of people with Down syndrome was Jhon Langdon Down in 1866, naming them Mongoloids, who showed that the similarity with the Mongolian people, already in 1958, Jérôme Lejeune discovered that the characteristics that these people held, were due to a genetic syndrome that occurred in 21 of the 23 pair that human beings have. With the discovery in honor of Jérôme Lejeune Jhon Langdon Down, named Down syndrome.

Children with Down syndrome often have certain characteristics both physical and mental, these being a single crease in the hand, small mouth, tongue projecting out from the mouth, short stature, small nose, flat feet, small hands and feet, large space between the big toe and second toe, weak immune system, heart problems, mild mental retardation, underdeveloped genitals, impaired balance, poor coordination, muscle hypotonia and ligamentous laxity.

The muscular hypotonia is a feature present in children with Down syndrome from birth, this hypotonia associated with compromised balance can affect the development process of coordinating these children, and their common present low level of coordination, but this can be reversed through deployment of physical activity in your life, thereby enabling improvements in their motor coordination. "The practice of physical activity performed steadily in a population with mental retardation, and specifically with Down syndrome leads to an improvement of the performance of motor coordination" (Varela, 2006, p. 80).

Swimming is one of the oldest physical activities of mankind, where the man was swimming with the goal of achieving the perfect body to maintain its ideals of beauty or have a physically strong body, thereby preparing soldiers for future battles fit. Today swimming is a very popular physical activity, so by being more present in the media thanks to his great results in the Olympic Games and Paralympic swimming is also well known for numerous benefits physical, social and mental that it enables her to practitioners, according to Silva (2006 p. 36). "Swimming develops coordination, aerobic fitness to decrease spasticity, and results in less fatigue than other activities." Thus it is the most suitable physical activity for children with a disability, especially for children with syndrome down.

> The swimming when facing people with Down syndrome has the benefits of improving physical fitness, psychomotor performance, social and psychological development. The skills developed in swimming motor repertoire can expand, enhance the opportunities for effective participation in a variety of activities, free time, improve security, and this can happen while the person is distracted in the aquatic environment. (Carvalho et al, 2008 p.144)

The swimming sport is indicated to assist in the development of children in general, but it can be very important for the motor skills development process of children with Down syndrome, because it is a physical activity that is conducted in aquatic swimming has characteristics which are of great service to children with Down Syndrome to practice. One of these features and more important for children with Down syndrome is the fluctuation, because it acts on the force of gravity enabling a reduction in body weight.

Children with Down syndrome because they have muscle hypotonia and ligamentous laxity, present limitations to physical activities that require much load on your joints and muscles. Swimming for a physical activity that shows the fluctuation as one of its features and fundamentals, not just by printing impact on the joints and muscles of children with Down syndrome who practice it, thus enabling these efetuem movements out of the water could injure their joints and muscles, thus being of great importance to enrich the coordination of them. Another aspect that is taken into account is the balance of these children who have committed the same, thus undermining their coordination, because the balance is essential to the process of development of motor skills of an individual. As the liquid medium has the ability to reduce body weight thereby making it easier for the child to remain in equilibrium, swimming allows a range of movements in the terrestrial environment it would be somewhat difficult or nearly impossible to accomplish because it would require a balance more accurate during its execution.

Even if being aware of the importance that swimming is in the process of development of motor skills of children with Down syndrome, is still some lack of research focused on this area. Thus, this study aims to critically dialogue about the influence of swimming in the development of motor skills of children with Down syndrome.

We hope that our notes help to expand studies on the topic, since research regarding the influence of swimming for the coordination of children with Down syndrome is not yet actually on the agenda of scientific studies developed in the area of physical activity.

2 - COORDINATIONS, BALANCE AND ADAPTED SWIMMING

According to Lima and Cavalari, (2010 p. 80) "Motor coordination is the brain's ability to balance the movement of the body, specifically the muscles and joints." People who have some kind of special need are physical or intellectual usually encounter difficulties in developing their motor skills, it is often because of having the same compromised their balance, and balance is of paramount importance for the realization of movements, since it allows the individual to have knowledge about your body, and Cavalari According to Lima (2010, p. 84) "balance is key to coordination." Without this balance movements were hardly achieved in harmony, thus creating difficulties at runtime, thereby causing a greater energy expenditure than they would be required to perform this movement.

Swimming is an activity performed by the aquatic environment, allows a series of moves that land would need a

considerable effort to be realized, it would require a lot of balance these children, this ease of movement of the float property that water has this buoyancy acts on the gravity lowering effect which it exerts on body weight. According to Silva (2006 p. 35th) "flotation reduces the gravitational force, and thus the success of the movements requires less effort and greater efficiency." This characteristic is that swimming has a great aid for babies and children who have disabilities to practice thus indicates up swimming as one of the most beneficial physical activities for children with a disability, thus reflecting on their motor . Tsutisumiet al (2004, p. 82) states that "swimming is one of the sports most appropriate for individuals with some type of disability, due to the benefits and facilities provided for the execution of movements with the body immersed in the water."

For all the benefits that swimming provides to its practitioners, the interest of people with special needs by doing the same growth has suffered, "With this, the sport is becoming more popular with each passing day as treatment for many people who have a disability. "(Carvalho et al, 2008 p.151). These same people with special needs who go in search of swimming as treatment may exceed the level of simple practitioners and become known as athletes, thus enabling greater visibility adapted for swimming, according Yatsuda (2010 p.5) "adapted swimming is one of the most practiced sports for people with disabilities" and that already observed in Paralímpiadas, where the number of athletes with special needs ranging to represent your country each edition is increased, and these are accumulating every edition Paralympic increasingly impressive results for their countries, outside the athletes who choose to participate in the Olympics competing at the same level athletes called normal.

3 - THE INFLUENCE OF SWIMMING IN DEVELOPMENT OF MOTOR COORDINATION OF CHILDREN WITH DOWN SYNDROME

Children with Down syndrome have delayed development of motor skills when compared to so-called normal children, the development of children with Down syndrome, is actually lower than that of children with normal development. (LEITE, 2007 p.85). But that does not mean that these children were to his life with his motor coordination stagnant at some level, we know that the delay is that they have much of the fact that they carry diseases that are characteristic of the syndrome itself, this delay can be reversed through physical activities. Given this highlight the importance that it has on the lives of children with Down syndrome, so it is advised that these are inserted at an earlier age in various physical activities, thus being able to provide benefits to their motor coordination. But the inclusion of children with Down Syndrome in physical activity should be encouraged, monitored and encouraged by their parents so that children feel greater confidence when starting a physical activity.

Silva and Ferreira stressed that "specific physical activities with children with Down syndrome show improved coordination throughout its length, reaching the physical." (2001, p. 69).

When thinking about physical activity focused on the development of motor skills of children with Down Syndrome swimming is the most appropriate because it gives a great benefit that it allows for the coordination of its practitioners, not being different for children with Down syndrome.

In a study by Saad (2003) which focused on investigating the development potential of people with Down syndrome. Found in one of the subjects of their sample a fine motor coordination, and this was practicing swimming - Paula received around de160 medals in swimming competitions. [...] Paula has perfection in movements, showing excellent coordination, diferençando itself from other competitors who use physical force. Saad (2003, p. 66th).

Swimming allows an improvement in the coordination of these children, because it is an activity that is performed in an aquatic environment, it shows on your property characteristics that influence the effect of gravity, and this fluctuation, this feature allows an ease of movement that on land would require some effort to be made. "The water activities due to relative buoyancy / gravity, allow children with disabilities to correct and adjust their movements, giving them time to react and understand how to use your body" (VIEIRA, 2009, p. 38). As is known child with Down syndrome, brings to follow their common physical characteristics of the syndrome, such as hypotonia, ligamentous laxity and low level equilibrium. These three pathologies associated with physical inactivity affect your coordination. Swimming has the benefit of coordinating the development process of these children by providing opportunities for movements during practice, because they are children who have ligamentous laxity and muscle hypotonia they have limitations in certain physical activities that require much of your joints and muscles thus activities that are carried out in water like swimming are the most recommended for not assaulting your joints, because when children are immersed in the water their bodies are getting lighter as the force that gravity exerts on the its weight is almost annulled, thus providing a range of movements that would hardly be achieved in soil. Silva (2006 p. 35) points out that "the opportunity and freedom of movement in the water effects that would never be achieved on earth." Besides this not harm the joints, it causes an improvement in muscular hypotonia, which is one of the main vilães in the development of motor coordination. According to Paula et al. (2005, p.146) swimming" promotes muscle development." So it can be said that this development provided by the swimming muscle, resulting in improvements in muscular hypotonia, can affect positively the development of motor skills of children with Down syndrome.

Attention should be paid to the balance of children with Down syndrome, since it is of paramount importance for the coordination of an individual, and children who have Down syndrome tend to have commitment to your balance, swimming comes again help, because the aquatic environment their bodies suffer a reduction in weight because of the fluctuation acting on the force exerted by gravity, thus movements that require a finer balance to be made in the terrestrial environment, would be easily achieved when this in the aquatic environment. This is generally used for babies with Down syndrome, who have delayed in their development stages when compared with normal infants, by this delay many begin to crawl and walk in a later period, so these are submitted to swimming practice, because it enables them to perform movements that they could not land. Eventually some of these movements can be transferred out of the pool. "So, nothing better than to offer a low-impact activity that facilitates static and dynamic balance as swimming" (PAULA et al, 2005, p. 146). Thus enabling improvements in motor development, highlighting its importance for coordination of children in general, but especially for children with Down Syndrome.

FINAL THOUGHTS:

Given the comments made during this study were supported properly infer that swimming positively influence the development of motor skills of children with Down syndrome, so that it provides numerous benefits for these children, so we indicate the practice swimming for children in general, but especially for children with Down syndrome, because the same practice would enable improvements in motor skills of these children.

With the study we can observe certain shortage of content designed for the theme presented, even though swimming one of the most beneficial activities for people with a disability. Thus we suggest that field studies be conducted in order to further deepen the benefits that swimming provides for the coordination of children with Down Syndrome so widespread increasingly practice the same in the educational and sports.

BIBLIOGRAPHIC REFERENCES:

CARVALHO, Camila Bueno et al. Interação das Pessoas com Síndrome de Down em Atividades na Água. Revista Mackenzie de Educação Física e Esporte. V. 7, n. 3, p.143-152, 2008.

LEITE, Bárbara Daniane Gusmão Lopes. Coordenação Motora de Crianças com Síndrome de Down. Revista Factu de Ciência. Unaí. Ano. 07 v. 13, p.71-88, ago/dez. 2007.

LIMA, Denise Aparecida; CAVALARI, Nilton. A Importância da Coordenação Motora e seus Rendimentos em Escolares. Caderno Multidisciplinar de Pós-Graduação da UCP. Pitanga, v.1, n.4, p.79-88, abr.2010.

PAULA, G.I; JUNIOR, E. N. S. P; FRETAS, P.S. A natação para o portador de síndrome de Down.Revista da Sobama, V.10, n.1, Suplemento, p. 146, Dezembro 2005.

SAAD, Suad Nader. Preparando o caminho da inclusão: dissolvendo mitos e preconceitos em relação à pessoa com Síndrome de Down. Rev. Bras. Ed. Esp. Marília, v.9, n.1, p.57-78, Jan/Jun. 2003.

SILVA, Diorges Ricardo; FERREIRA, Juliana Saraiva.Intervenções na Educação Física em Crianças com Síndrome de Down.Revista da Educação Física/UEM.Maringá, v. 12, n. 1, p. 69-76, 1. sem. 2001

SILVA, Maria Rosália Festas da. Efeitos da natação na coordenação motora:estudo de caso de um indivíduo com deficiência mental ligeira. 2006. Monografia (Graduação em Licenciatura em desporto e educação física) - Faculdade de desporto universidade do porto. Porto.

TSUTSUME, Olívia et al. Os Benefícios da Natação Adaptada em Indivíduos com Lesões Neurológicas. Revista Neurociências. São Paulo, v.12, n.2, p.82-86, ABR/JUN. 2004.

VARELA, Paulo Miguel Faria. Coordenação Motora em Indivíduos Portadores de Síndrome de Down praticantes e não praticantes de atividade física. 2006. Monografia (Graduação em Licenciatura em desporto e educação física) - Faculdade de desporto universidade do porto. Porto.

VIEIRA, Antonio José Gonçalves. Concepção, Planejamento, Realização e Avaliação de um Programa de Natação Adaptada numa População com Deficiência Intelectual com e sem Síndrome de Down. 2009. Dissertação (Mestrado em ACTIVIDADE FÍSICA ADAPTADA) - Faculdade de desporto universidade do porto. Porto.

YATSUDA, André Gonçalves. A natação adaptada como esporte de inclusão em um ambiente excludente. 2010. Dissertação (Mestrado em CIÊNCIA DA MOTRICIDADE HUMANA) - UNIVERSIDADE CASTELO BRANCO. Rio De Janeiro.

ADDRESS: Avenida Dos Guaranis, nº 52,
Bairro Beirol, Cep: 68902-160, Macapá, AP, Brasil.
E-MAIL: Igor_filipe_1.12@hotmail.com

THE INFLUENCE OF SWIMMING IN DEVELOPMENT OF MOTOR COORDINATION OF CHILDREN WITH DOWN SYNDROME

ABSTRACT

Swimming is one of mankind oldest physical activities, where the man wishing to maintain its ideals of beauty swim with the goal of achieving the perfection or even have a physically strong body, since it was used to prepare soldiers for future battles fit. Currently swimming is a very popular physical activity, being more present in the media thanks to its great results in the Paralympic and Olympic Games, swimming is also known for numerous physical, social and mental benefits that provides to people. For people with disabilities it helps develop motor coordination, aerobic condition and reduces spasticity, resulting in less fatigue than other physical activities. So, it is becoming one of the most appropriated activities for children with Down Syndrome. Thus, this study aims to critically dialogue about the influence of swimming in the development of motor skills of children with Down syndrome. To this end, we will maintain our notes in the literature. We hope that our notes help to expand studies on this topic, since research regarding the influence of swimming for the coordination of children with Down syndrome is not yet actual on the agenda of scientific studies developed in the area of education / activity physics.

KEY - WORDS: Motor Coordination; Down Syndrome; Swimming

L'INFLUENCE DE LA NATATION DANS LE PROCÈS DE DÉVELOPPEMENT DE LA COORDINATION MOTRICE DES ENFANTS AVEC LE SYNDROME DE DOWN

RÉSUMÉ

La natation est l'une des activités physiques les plus anciennes de l'humanité, ou l'homme avait pour objectif en nageant d'avoir un corps parfait pour extériorisé ses idées sur la beauté ou encore avoir un corps physiquement fort, depuis cela, la natation a été utilisé pour la préparation des soldats aptes pour des futures batailles. Actuellement la natation est une activité physique très populaire, cela grâce à leurs résultats des jeux Olimpiques et Paralimpiques qui sont beaucoup plus présent sur tous les moyens de comunicatiion, la natation est aussi très connue pour tous ses bienfaits physiques, sociaux et mantaux à tous ses pratiquant. En ce qui concerne les handicapés physiques elle aide à développer la coordenation motrice, la condition aérobique, reduit la spasticité, et cela à pour résultats beaucoup moins de fatigue que d'autres activités physiques. Pour toutes ces raisons la natation est devenue peu à peu l'activité physique la plus recomendé pour les enfants qui souffre du syndrome de Down. De cette forme, cette étude à pour objectif de dialoguer critiquement sur l'influence de la natation dans le processus de developpement de la coordénation motrice des enfants qui souffre du sindrome de Down. Donc, nous soutiendrons notre constatation par de la litérature spécialisé. Nous esperons que notre constatation contribue á l'extension d'études qui ont en rapport le même thème, une fois que, les recherches en rapport avec l'influence de la natation sur la coordénation motrice d'enfants qui souffre du syndrome de Down n'est pas encore entré dans le programme d'études cientifique dans le domaine de l'éducation/activité physique.

MOTS-CLEFS : coordenation motrice ; sindrome de down ; natation.

LA INFLUENCIA DE LA NATACIÓN EN EL DESARROLLO DE LA COORDINACIÓN MOTORA DE LOS NIÑOS CON SÍNDROME DE DOWN

RESUMEN

La natación es uno de los más antiguos de la actividad física de la humanidad, donde el hombre estaba nadando con el objetivo de lograr el cuerpo perfecto para mantener sus ideales de belleza o tener un cuerpo físicamente fuerte, ya que se utilizó para preparar a los soldados para las batallas futuras en forma . Actualmente la natación es una actividad física muy popular, así que al estar más presente en los medios gracias a sus excelentes resultados en los Juegos Olímpicos y Paralímpicos de natación también es bien conocido por los numerosos beneficios físicos, sociales y mentales que permiten a

sus practicantes. Con respecto a las personas con discapacidad que ayuda a desarrollar la coordinación motora, la condición aeróbica, reduce la espasticidad, lo que resulta en actividades físicas menos fatiga y otros. Por lo tanto, se está convirtiendo en una de las actividades más adecuadas para los niños con Síndrome de Down. Por lo tanto, este estudio tiene como objetivo el diálogo crítico acerca de la influencia de la natación en el desarrollo de la coordinacíon motora de los niños con síndrome de Down. Para ello, vamos a mantener nuestras notas en la literatura. Esperamos que nuestras notas ayudan a ampliar los estudios sobre el tema, ya que la investigación sobre la influencia de la natación de la coordinación de los niños con síndrome de Down no es aún realmente en la agenda de los estudios científicos desarrollados en el ámbito de la educación / actividad la física.

PALABRAS - CLAVE: Coordinación motora; Síndrome de Down; Natación.

A INFLUÊNCIA DA NATAÇÃO NO PROCESSO DE DESENVOLVIMENTO DA COORDENAÇÃO MOTORA DE CRIANÇAS COM SÍNDROME DE DOWN

RESUMO

A natação é uma das atividades físicas mais antigas da humanidade, onde o homem nadava com o objetivo de alcançar o corpo perfeito para manter seus ideais de beleza ou possuir um corpo fisicamente forte, desde então, era utilizada para preparação de soldados aptos para futuras batalhas. Atualmente a natação é uma atividade física muito popular, isso por estar mais presente nos meios de comunicação graças a seus grandes resultados nos jogos Olímpicos e Paralímpicos, a natação também é muito conhecida pelos inúmeros benefícios físicos, sociais e mentais que possibilita para seus praticantes. No que concerne aos sujeitos com deficiência ela ajuda a desenvolver a coordenação motora, a condição aeróbica, reduz a espasticidade, e resulta em menos fadiga que outras atividades físicas. Assim sendo, vem se constituindo em uma das atividades mais indicada para crianças com Síndrome de Down. Desta forma, o presente estudo tem como objetivo dialogar criticamente sobre a influência da natação no processo de desenvolvimento da coordenação motora de crianças com Síndrome de Down. Para tanto, sustentaremos nossos apontamentos na literatura especializada. Esperamos que nossos apontamentos contribuam para ampliação de estudos referentes a temática, uma vez que, pesquisas referentes a influência da natação para a coordenação motora de crianças com Síndrome de Down ainda não entrou de fato na pauta de estudos científicos desenvolvidos na área da Educação/atividade física.

PALAVRAS – CHAVE: Coordenação Motora; Síndrome de Down; Natação.