

106 - EVALUATION ABOUT NEUROMOTOR PROFILE OF CHILDREN WITH QUADRIPLEGIC CEREBRAL PALSY.

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1. INTRODUCTION

The cerebral palsy (CP) is one of the most common neurological diseases, that is consequence of an injury that affects the central nervous system in the structural and functional maturation stage, occurred in the pre, peri and post – natal. and their possible sources cited in the literature are: Genetic, intrauterine infection, low birth weight, perinatal hypoxia and ischemia, in which several risk factors interact suggesting that cerebral palsy is a multifactorial involvement of the brain and can find no specific cause (MANCINI et al., PATO et al., 2002).

Bobath (1990) defines cerebral palsy as a lesion in the immature brain, affecting movement and posture. is classified as cerebral palsy to muscle tone and topography of the lesion.

Fonseca e Lima (2004, p.45) consider Cerebral Palsy a chronic encephalopathy of the childhood non-progressive or neuromotor dysfunction resulting from injuries sustained in a developing brain, leading to disturbances of motility, tone and posture, may or may not have cognitive impairment. These lesions occur in various stages of maturation, occurring prior to 3 years. Note is a global concern in relation to cerebral palsy by both the incidence and severity of it, since in recent decades the prevalence rate of moderate and severe cases range from 1.5 to 2.5 per 1,000 live births in developed countries. In under-developed countries the incidence of this neurological disorder is higher than in developed countries, observing the rate of 7 to 1,000 people. In Brazil, the data estimate approximately 30,000 to 40,000 new cases per year (Mancini et al, 2002).

Among the classifications used, the most widely accepted is that published in 1956 by the Committee of the American Academy of Cerebral Palsy, which takes into account the types of motor dysfunction present and the topography of the damage and are divided into: spastic (hemiplegia, diplegia, quadriplegia), dyskinetic (extrapyramidal or choreoathetosis), ataxic, hypotonic and mixed. Considered the most serious among cerebral palsy, cerebral palsy quadriplegic, affected 9 to 43% of patients (PIVESANA, 2002).

In the Quadriplegia the child usually develops severe spasticity in the arms and legs that can be associated with an axial hypotonia and neck, being unable to rectify the head, keeping your balance in any position or use his arms and hands in a functional way.

The quadriplegic child of this group can't express himself through speech, gestures or movements and, eventually, it tends to protect the postural changes assuming a passive position (MERRIT, 1998).

According to Bobath (1990), the quadriplegia involve the entire muscle and joint functioning of the body, in severe cases, difficult the control and the motor act, how to manage and support the head and neck. A condition achieved in the first months of life, crucial to reach new stages of neuromotor development (Le Boulch, 2001). This postural control provides a guidance and balance the body and head, the maintenance of the center of mass at the base of support (Frankel, 2003). The Postural control is obtained through of the motor control through of commands of the central nervous system set by the vestibular system and Cerebellar the lower motor neurons, controlling and organizing numerous muscles and joints in functional and coordinated movements aimed at the fulfillment of a task or supply (Ekman, 2008).

From the previously presented, the objective this study was to evaluate the profile on the neuromotor development of children, both sexes, from 3 to 5 years of age with cerebral palsy (CP), during the performance of the motor task.

2. METHODOLOGY

2.1 Type and method of study

In this study we used the method of assessment context, which established a descriptive study of neuromotor profile in children with cerebral palsy.

The universe of this research consisted of a census group, composed of 11 children aged 3 to 5 years old, with cerebral palsy, who perform at the Center for Equotherapy and Rehabilitation of Military Village - Rio de Janeiro (CERVIM-RJ).

2.3 Research ethics

This research project was submitted to the Committee Ethics in Research involving Human Beings of the University Castelo Branco (UCB/RJ) and approved under protocol nº 0185/2008 UCB/VREPGPE/COMEP/PROCIMH.

The data collection took place according to the resolution 196/96. So it was originally requested permission from parents or guardians for the study was developed through an informed consent form which is attached a letter of clarification explaining the nature study.

EVALUATION PROCEDURES

To ensure achievement of this study, the scale of Gross Motor Function Classification System (GMFCS) for the purpose of this study will be used only the dimensions A (Pour and Roll) and B (Sitting), due to the severity of the motor skills of these children.

The A Item is composed of 17 items numbered of 1 to 17, allowing a minimum score of 0 points and a maximum of 51 points, or 0% to 100%, each item contains four options from 0 to 3 in which 0 - not start, 1 - start, 2 - partially complete, 3 - complete fully the commands of the items.

The B Item is composed of 20 items there were 18 to 37. Each item can be scored from 0 to 3, which correspond respectively to ponder: Where 0 - does not start, 1 - start, 2-complete part, 3 - complete fully the commands of the items. For the score of the A and B was carried out the sum of the items thus obtaining a total score of each dimension. The high scores for the A and B are respectively 51 and 60 points.

Thus, for each child, a percentage score is calculated for each dimension, from the scores of individual children divided by the maximum score times 100% better visualized by the formula $A = \text{size (total pontos/51)} \times 100$ and $B = \text{size (total pontos/60)} \times 100$. A total score, ie the total score is obtained by adding the percentage score for each dimension divided by 2, due

to the use of only 2 items.

3. PRESENTATION AND DISCUSSION OF RESULTS

The children assessed in this study had a score ranging between 9.8 and 86.27 points, with a mean of 33.55 and a standard deviation of 1.9 and a coefficient of variation 68.95%, the group shows that despite a large variance between minimum and maximum can be considered uniform as shown in Figure 1.

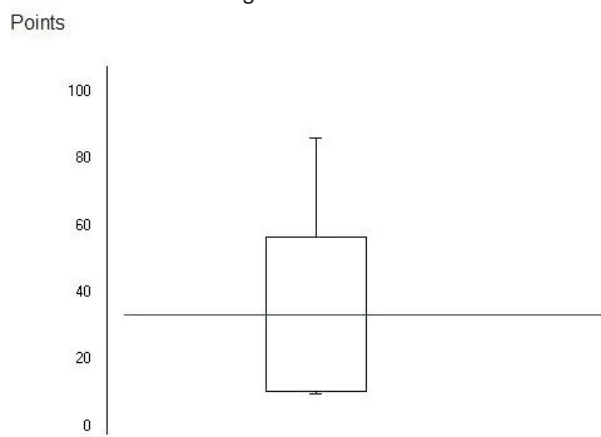


FIGURE 1: Maximum and Minimum of the evaluated .

The gray line represents the average population

The results obtained with their respective means, standard deviation and sum of each item was found that children fared better in items 1A, 2A, 6A, 7A, 10A, 11A, 14A, 15A, 21B and 22B.

In items 1A, 2A, 6A and 7A raises the child in supine, head midline and test the ability of the child's head spin with symmetrical ends and bring the hands in the midline following objects and trying to reach them .

Motor skills acquired by babies at around 5 to 6 months of age, when the cervical tonic reflexes finish. The degree of difficulty is low, it requires a little head control.

In items 10A and 11A, it tests the ability of cervical length and cervical extension only associated with armrest. Positions that require a bit more head control which items 1A, 2A, 6A and 7A ,but achieved due to the pattern in spastic extension of these children.

In the items 21B and 22B, it tests the head control maintained for periods of 3 and 10 seconds the children achieved good results showing the initiation of a head control, but they lack the symmetry during the test and after extending his head could not follow objects in a functional way.

It was observed that from the item 15A activities are tested in the sitting position, which demands beyond the control of head greater motor control and a greater synergy of the extensor and flexor muscles of the trunk, and activities of more complex motor observed the results with low achievers, with the exception of items 21B and 22B (21A sitting on the floor with support in the chest by the therapist, lifts head upright, keeps for 3 seconds on 22B repeats the item with the time 10 seconds, failing to score from the item 28B, where the implementation of these items requires a large motor control, these children do not have, because of the seriousness of its consequences.

POSTURAL CONTROL

Postural control provides guidance and balance. The orientation is the adjustment of the body and head to an upright position and the balance is the ability to maintain the center of mass at the base of support. Postural control is obtained by central commands to lower motor neurons (Cook and Woollacott, 2003).

CONCLUSION

To ensure achievement of this study, the scale of Gross Motor Function Classification System (GMFCS) for the purpose of this study will be used only the dimensions A (Pour and Roll) and B (Sitting), due to the severity of the motor skills of these children.

From this study it is concluded that the profile of neuromotor children 5 to 8 years old with cerebral palsy is a deficit in terms of degree of injury they have.

Through this method of assessment, therapists can identify neuromuscular needs of each child individually and through specific methods and techniques mastered by them and develop an effective treatment for each child. It is then the importance of a context for the planning of future intervention because it is intended to provide useful information to decide about an alternative to be used, the goals associated with the deficiencies found and the goals associated with solution of the problems encountered, can then trace a more effective treatment for these children and the therapists in this integrated process of rehabilitation can work with these children from an evaluation process more detailed as the GMFM, which gives us indicating what stage of evolution neuromotor children are undergoing treatment.

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EVALUATION ABOUT NEUROMOTOR PROFILE OF CHILDREN WITH QUADRIPLEGIC CEREBRAL PALSY.

ABSTRACT:

The objective of this study was to evaluate the neuromotor development profile of 11 children of both gender from 3 to 5 years with cerebral palsy (CP), during a motor task. To ensure achievement of this study was used, the Gross Motor Function Classification System (GMFCS) in dimensions A (Lay and Roll) and B (Sitting). The children assessed in this study had a score ranging between 9.8 and 86.27 points, with a mean of 33.55 and a standard deviation of 1.9 and a coefficient of variation 68.95%. It can be concluded that the neuromotor profile of children 5 to 8 years old with cerebral palsy is deficient in relation to changes in the neurophysiologic mechanisms responsible for motor control.

KEYWORDS: Evaluation, Children, Cerebral Palsy.

EVALUATION SUR LE PROFIL NEUROMOTEURS DES ENFANTS AVEC PARALYSIE CÉRÉBRALE QUADRIPLEGE.

Resumé: Le but de cette étude a été d'évaluer le profil neuromoteur de 11 enfants des deux sexes, âgés de 3 à 5 ans, victimes de paralysie cérébrale (PC), au cours d'une activité motrice. Pour assurer la réalisation de cette étude, on a utilisé l'échelle de Gross Motor Function Classification System (GMFCS), dans ses dimensions A (S'allonger et Rouler) et B (S'asseoir). Les enfants étudiés ont présenté un résultat variant de 9,8 à 86,27 points, avec une moyenne de 33,55 et un écart-type de 1,9 et un coefficient de variation de 68,95%. On peut conclure que le profil neuromoteur des enfants âgés de 5 à 8 ans, victimes d'une paralysie cérébrale est déficitaire en fonction des altérations des mécanismes neurophysiologiques responsables du contrôle moteur.

MOTS-CLÉS : Evaluation, Enfants, Paralysie Cérébrale.

UNA EVALUACIÓN SOBRE PERFIL NEUROMOTOR DE LOS NIÑOS CON PARÁLISIS CEREBRAL TETRAPLEJIA.

RESUMEN:

El objetivo de este estudio fue evaluar el perfil del desarrollo neuromotor de 11 niños de ambos sexos de 3 a 5 años con parálisis cerebral (PC), durante una tarea motora. Para garantizar el logro de este estudio se utilizó la función de motor bruto Sistema de Clasificación (GMFCS) en las dimensiones A (Lay and Roll) y B (sesión). Los niños evaluados en este estudio tenían una puntuación entre 9,8 y 86,27 puntos, con un promedio de 33,55 y una desviación estándar de 1,9 y un coeficiente de variación de 68,95%. Se pudo concluir que el perfil neuromotor de los niños entre 5 y 8 años con parálisis cerebral es deficiente en función de los cambios que afectan los mecanismos neurofisiológicos responsables por el control motor.

PALABRAS-CLAVE: Evaluación, Infancia, parálisis cerebral

UMA AVALIAÇÃO ACERCA DO PERFIL NEUROMOTOR DE CRIANÇAS COM PARALISIA CEREBRAL QUADRIPLEGICAS.

RESUMO:

O objetivo deste estudo foi de avaliar o perfil acerca do desenvolvimento neuromotor de 11 crianças de ambos os sexos, de 3 a 5 anos de idade, com paralisia cerebral (PC), durante a realização de uma tarefa motora. Para assegurar consecução deste estudo foi utilizada a escala de Gross motor Function Classification System (GMFCS), nas dimensões A (Deitar e Rolar) e B (Sentar). As crianças avaliadas neste estudo apresentaram um resultado variando entre 9,8 e 86,27 pontos, com média em 33,55 e um desvio padrão de 1,9 e um coeficiente de variação em 68,95%. Pode-se concluir que o perfil neuromotor de crianças de 5 a 8 anos de idade com paralisia cerebral é deficiente em função das alterações dos mecanismos neurofisiológicos responsáveis pelo controle motor.

PALAVRAS-CHAVE: Avaliação, Crianças, Paralisia Cerebral.

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