19 - MOTOR ACTIVITIES USED IN THE PASAGE TO SITTING POSITION FROM THE SUPINE POSITION IN CHILDREN FROM SIX TO TWELVE MONTHS

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INTRODUCTION

The development is a process of complex and interrelated changes which involved all aspects of growth and maturation of their organs and body systems. Each child has their pattern of development, since its inherent characteristics suffer the constant influence of a chain of transactions that are now between the child and his environment (BURNS; MACDONALD, 1999).

The movement begins in uterus and around of thirteen weeks, almost all joints in the body that serve to get the motion, are able to move (ECKERT, 1993). When the child is born, he has an innate set of reflexes. When we observe newborns, it seems that some of their movements are unidirectional and without purpose. Some other times babies are moving in a specific way when they receive a specific stimulus. .But those seemingly random movements have a significant bearing on the intentional movements that occur later. After the first few months of life, babies begin to reach milestones intentional motor benchmarks. By comparing the movements of a newborn with the same child at twelve months, the spontaneous movements and reflexes bring about complex, coordinated and voluntary activities. The baby does not acquire a complex skill in a while, he must learn to coordinate and control the many integral parts of their body (ASSUMPÇÃO,1994;HAYWOOD;GETCHELL,2004). The sequence in the posture development, called benchmark of motor development always follows the same order: first, the baby firm the neck, and then sits up, stands and walks. Cultural variations in the baby management alter the period in which these gains are achieved, but not its sequence (FUNAYANA, 1996).

Among the milestones of motor development, children's ability to stay and move to the sitting position provides more space for toddlers to vary their behavior by encouraging their cognitive development. This ability is achieved, as the muscles get toned and its progression is observed with a reduction of points of support, and then through the transition to the sitting position, without help from others. sensory information informs the relative position of body segments and internal and external forces, acting on body segments. All these sensory information is then used to estimate and anticipate the forces acting on the body and, combined with appropriate muscle activity, to produce or maintain the desired body position (Barela et al, 2001). When the child is six month, the postural control has improved so that children are able to sit upright for a few seconds (LEAL, 2003). In the initial phase of sitting developing ability to sit without support the infant relies with their hands, using them to compensate for postural adjustments still immature. Initially the child is tilted to the front on their hands, thereby ensuring a maximum stability on a broad base support. Later he can use his hands to save the lateral balance, where the contraction of muscles of the trunk and lower limbs appears inadequate to prevent the fall to the side (SHEPERD, 1995). During the third trimester, the baby becomes mobile, developed the ability to move around the environment. The impulse to move against gravity, he seems strengthened, so that the babies are able to drive themselves to sit when they are nine months (TECKLIN, 2002).

There is disagreement among authors with respect to the age children pass to the sitting position and how they are performed. This variation is an important aspect of motor behavior in the age of acquisition. However the physiotherapist needs to clear concepts and knowledge about child development, to assess the infant or the child in order to identify which are the individual characteristics of development in response to stimuli, environment and what really a motor delay in certain chronological age is.

Published studies about child psychomotor development are numerous, but there is a lack of material on how the passage to sitting position is and the used motor activities for this passage. This study aimed to investigate the age the passage and permanency to sitting position are performed by children from six to twelve months, noting that motor activities are used for this transfer and detecting the ages at which these changes happen.

MATERIAL AND METHODS

The sample population was comprised by 180 children from six to twelve months of live, both sexes who attended municipal, state and private daycare centers of Balneario Camboriú, Camboriú, and Itajaí during August 2005 to August 2006.

The criteria for exclusion were children who had some kind of injury that interferes with normal development neuropsychomotor and children who were born premature. Each institution received a letter to authorize the execution of this research, which was signed by the head of the nursery.

The way to get information was through direct observation of motor patterns and motor activities used by children to achieve sitting position, as well information recorded in an evaluation form developed by the researchers, and validated by 10 professionals with knowledge in the areas of children's development neuropsychomotor.

The children were divided into six subgroups of 30 children each, both sexes according to age, forming subgroups: G6 group (children between 6 months and 1 day to 7 months); G7 group (children of 7 months and 1 day to 8 months); G8 group (children of 8 months and 1 day to 9 months); G9 group (children of 9 months and 1 day to 10 months); G10 group (children of 10 months and 1 day to 11 months); G11 group (children of 11 months and 1 day to 12 months). In each child passage was directly observed 3 times, individually.

While observing the child was placed on a mat with the minimum possible clothes. Then observation was carried out and notes about how children get used to sit were taken. The child sat up in a voluntary form, from supine position, through games proposed by the researcher or spontaneously in response to stimuli in their environment.

The data were organized and stored in a back up file. This information was analyzed qualitatively and quantitatively, through the analysis method of frequency distribution in simple and cross charts.

RESULTS AND DISCUSSION

The sample for this study consisted of 180 children, 86 females and 94 males. Of these 144 remained seated without assistance and 36 not staying.

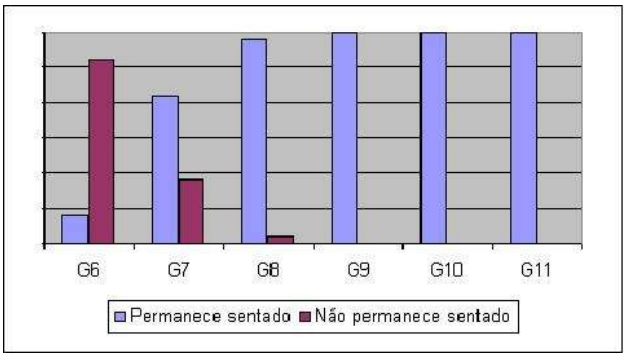


Figure 1 - Ability to remain seated in each age group.

Figure 1 shows the gradual acquisition of the ability to remain seated. In the G6 group only 4 of 30 children managed to remain seated without help (where the researcher found the use of the upper limbs to backward support), increasing to 21 children in the following age stratum, at which time there was the release of one, and sometimes from both upper limbs in backward support. And children nine months aged and more, all remained seated without support.

Barela (2000), the younger children have difficulty in balance, because even in a static position, the body is never completely still. The position of mass center oscillates from one side to another, back and forth, making it difficult to stay in the sitting position.

Regarding the transition to sitting position, from 180 children evaluated, 100 reached the sitting position without help, as in Figure 2.

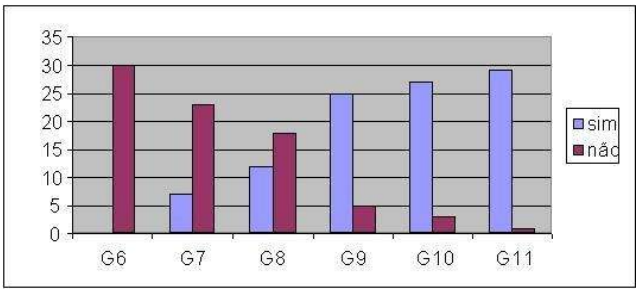


Figure 2 - Transition to sitting position in each age group.

Referring to the chronological age that occurs in the transition to the sitting position there is no unanimity in the view of scholars. For Knobloch, Pasamack (1990), and Harnack; Santana (1997), the transition to a sitting position occurs with seven months. For Coelho (1999), in agreement with Fleming (2004), the transition is made from eight months of age. There are even authors such as Wong (1999), who claim that only children with ten months reach sitting position alone.

The report points out that the first passage to the sitting position was executed by seven children from the G7 group, with a gradual increase in the following age groups. Of the children who have not achieved the sitting position, it was observed that these are included in all ages, however, in decreasing way in terms of age, no child of the G6 group reached the sitting position alone and only one of the G11 group had not this ability.

The most significant increase in children reaching sitting position from the G9 group occurs among other reasons, because of being from the fourth trimester that the reactions of balance and muscle strength are more developed, allowing children to explore the environment, perform refiner movements and greater complexity.

Referring to how each child reached the sitting position in 100 children who had this ability, we found 5 different types of passage: 1) supine-prone-puppy-sit, 2) supine-prone-cats-sit; 3) supine-prone-lateral decubitus-elbow support-sit; 4) supine-lateral decubitus- upper limbs support - sit; 5) supine-lateral decubitus- upper limb support-sit.

It is observed that children who performed the passages described as 1.2 and 3 used different variations of the prone position to reach sitting position. The other ones performed the passage by using the lateral decubitus position with the support of one or both upper limbs. No child from the sample performed the transfer from the supine position directly to the sitting position.

TABLE 1 passages from prone position and other passages.

Não realiza	Prono	Outras
80 44,44%	67 37,22%	33 18,34%

Table 1 shows in this study sample, there was a higher incidence of children using the prone position to reach sitting position in relation to other forms of transition.

According Davies (1996), in normal development, the active extension control of the trunk proceeds active flexion in much. A baby of three months in prone, is able to raise his head and your shoulders without his arms support. However, he is unable to flex his torso to sit when raises and his legs are not able to extend selectively.

For Bobath (1989), since eight months old the body rectification reaction acting on the body allows the baby lying in the supine position to roll to prone position and pass to the sitting position.

The figure below (Figure 2) shows the incidence of the prone position in each age stratum of the sample.

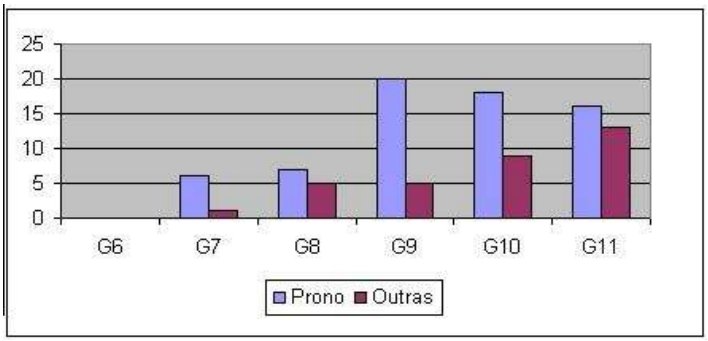


FIGURE 3 Passage by prone position in each age group

At the beginning of childhood, getting up from the ground is achieved by the action of rolling from the supine to the prone position, and then raise the body through a series of postures that may include transitional quadruped, plantigrade, squat, kneeling and semi - kneeling. As the abilities of straightening that develop during the various stages of childhood, the child acquires the ability to move from a body posture to another more advanced, while fighting the gravity force in the process.

Each new position represents a rise from the center of the body mass on a each time smaller base support, and therefore skills such as raise from the supine position to sit, or take a quadruped position from a prone position, are also actions of straightening (DUWARD; BAER; ROWE, 2001).

The report points out that the preference for passages that use the prone position are characteristic of younger children. For Funayama (1996), as the maturational process is going on, new experiences and opportunities will require more muscle prompt and movement synergism, allowing other types of passages to sitting position.

According to Figure 2, it is observed that however, passages for prone position occurs at different ages, with an intermediate position also used by children of more advanced Ages . For Lopes and Tudella (2004), the stimuli received by the child help to shape or strengthen responses in their behavioral repertoire. Therefore, even children of older age groups, can make use of more primitive passages, because their changes in behavior are influenced by environmental factors beyond the genetic ones.

CONCLUSION

In our study, we found wide variation in time and in the way of achieving the sitting position, some children perform it at earlier stage and others at later one.

The achieved sitting position was seen in children from 6 months, and after the 9 months all children remained sitting without support. The passage to sitting position was observed for the first time in seven months and a day aged children and it is still absent in some, 10 and 11 months aged children.

The passage to the sitting position used the prone position predominantly, and the older they got the more they abandoned ventral decubitus gradually, appearing passages that from the supine position evolutes to lateral decubitus in children who belong to an older age strata in greater frequency.

We conclude that the sequence in the development of motor skills tend always to obey the same order. Differences of time and motor skills used to remain seated and to achieve sitting position independently in children of the same chronological age in this sample reinforced the assumption that neuropsychomotor developments, is a result of the interaction of the task, the environment and the individual.

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MOTOR ACTIVITIES USED IN THE PASAGE TO SITTING POSITION FROM THE SUPINE POSITION IN CHILDREN FROM SIX TO TWELVE MONTHS

ABSTRACT:

The study of child development neuropsychomotor, enables health professionals greater understanding of the motor behavior in childhood giving subsidies to a correct assessment and intervention for children with delays in motor development. Among the milestones of motor development, the ability of children to stay and move to the sitting position provides more space for infants to vary their behavior by encouraging their cognitive development. This study objective was to verify different ways to pass to sitting position, from supine position in healthy children, between the sixth and twelfth months of life. The sample comprised 180 children who attended municipal, state and private daycare centers of Balneario Camboriú, Camboriú, and Itajaí. Information obtained through the observation of motor activities used by children to achieve sitting voluntarily, was recorded in an evaluation form which was developed and validated by researchers previously. As the results, the passage to sitting position was observed for the first time in children from seven months, thus the predominant passages were the ones which passes through prone position. Passages using the lateral position with the support of the two upper limbs or only one, were mostly in children of older age strata. Although there is a tendency in the way of achieving the sitting position, it was observed variations within the same stratum, it reinforced the assumption that in addition to the neurological maturation, environmental influences and stimuli influence the time that the motor acquisitions happened.

Key word: Motor development, chronological age, sitting position, physiotherapy.

LES ACTIVITÉS MOTEURS UTILISÉES DANS LE PASSAGE À LA POSITION ASSISE A PARTIR DE LA POSITION SUR LE DOS CHEZ LES ENFANTS DE SIX À DOUZE MOIS

Résumé:

L'étude du développement neuropsicomoteur de l'enfant, permet aux professionnels de la santé une plus grande compréhension au sujet du comportement moteur dans l'enfance ce qui donne des outils pour une évaluation correcte et l'intervention chez les enfants avec un retard dans le développement moteur. Parmi les marques du développement moteur, la capacité de l'enfant de rester et passer à la position assise, fournit à l'enfant un plus grand espace pour varier son comportement, en favorisant son développement cognitif. L'objectif de cette étude a été de vérifier des formes différentes de passage à la position assise, en partant de la position sur le dos chez les enfants en bonne santé, compris entre le sixième et douzième mois de vie. L'échantillon a été composé par 180 enfants qui ont fréquenté des garderies municipales, de l'état et privées des villes de Balneário Camboriú, Camboriú et Itajaí. Les informations obtenues à travers l'observation des activités moteurs utilisées par les enfants pour atteindre la position assise volontairement, ils ont été inscrits dans une fiche d'évaluation élaborée et validée précédemment par les chercheurs. D'après les résultats, le passage à la position assise a été observé par la première fois chez les enfants à partir de sept mois et les passages prédominants étaient ceux qui passent par l'enclin. Les Passages qui utilisaient le décubitus latéral avec support des deux membres supérieurs ou juste un, ils sont arrivés avec une plus grande fréquence chez les enfants des strates de l'âge plus avancées. Malgré avoir une tendance dans la forme d'atteindre la position assise, il a été observé des variations dans une même strate, Ce qui renforce la présupposition qui au-délà de la maturation neurologique, les influences de l'environnement et les motivations influencent dans le temps des acquisitions moteurs.

Mot-clef: développement moteur; âge chronologique; Position assise; kinésithérapie.

ACTIVIDADES MOTORAS UTILIZADAS EM EL PASAGE PARA LA POSICIÓN SENTADA A PARTIR DE LA POSICION SUPINA EM NIÑOS DE SEIS A DOCE MESES.

Resumen:

El estudio del desarrollo neurosicomotor infantil, permite a los profesionales de la salud un mayor entendimiento sobre el comportamiento motor en la infancia dando subsidios para una correcta evaluación e intervención en niños con retardo en el desarrollo motor. Entre los marcos de desarrollo motor la habilidad del nino de permanecer y pasar para la posición sentada proporciona al lactente mayor espacio para variar su comportamiento favoreciendo su desarrollo cognitivo. El objetivo de este estudio fue verificar diferentes formas de pasar para la posición sentada, partiendo de la posición supina en niños saludables comprendidas entre el sexto y el decimo segundo mes de vida. La muestra fue compuesta por 180 niños que frecuentaban guarderias municipales, estaduales y particulares de las ciudades de Balneário Camboriú, Camboriú, e Itajaí. Las observaciones obtenidas atraves de la observación de las actividades motoras utilizadas por los niños para alcanzar la posición sentada voluntariamente, fueron registradas en una ficha de evaluación elaborada y validada previamente por los investigadores. Conforme los resultados, el paso para la posición sentada fue observada por la primera vez en niños a partir de siete meses, siendo que los pasos predominantes fueron los que pasaban por la posición prona. Los pasos que utilizaban el decubito lateral con apoyo de los dos miembros superiores o apenas uno,tuvieron mayor frecuencia em los niños de estratos etarios mas avanzados. A pesar de haber una tendencia en la forma de alcanzar la posición sentada, se observo variaciones dentro de un mismo estrato, reforzandose lo presupuesto de que más alla de la madurez neurologica, influencias ambientales y estimulos influencian en el tiempo en que ocurren las adquisiciones motoras.

Palavras-clave: desarrollo motor, edad cronológica, posición sentada, fisioterapia