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Descriptive Review

Phases of Typical and Atypical Child Development, Correlation in Cerebral Palsy

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Abstract: Motor development is known for its constant evolution, as it allows a baby to develop his motor skills and perform complex and coordinated movements. Such knowledge on the subject is extremely important for the physical therapist, so that he is able to deal with certain situations, which include pathological conditions and developmental delays, requiring intervention and rehabilitation, thus making implications for cerebral palsy (CP).

Keywords: Cerebral palsy, Motor skills disorders, Child development

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1. Introduction

Typical motor development is a continuous process of motor behavior, where evolution occurs throughout the life cycle. When this development occurs in the expected pattern, affecting motor behavior, it is considered an atypical development. The study of motor development is related to age, but we must remember the individuality of each individual in relation to movement abilities and skills [1].

CP is infantile encephalopathy, in the motor phase that manifests itself in the developmental phase of infantile encephalopathy (up to three years of age) [2].

The main factor that affects CP is the motor impairment where, consequently, the body biomechanics and the functional performance are physical [3].

In view of this, this study aimed to analyze the phases of typical and atypical child development; to promote the evolution of its treatment through the intervention and rehabilitation of the CP.

2. Materials and Methods

To achieve the objective proposed in this study, articles were selected from the Scielo and Pubmed databases using keywords such as: Cerebral palsy, childhood motor skills, development. We found 40 articles, which were found in English and Portuguese and 37 were excluded because initially they were evaluation methods and not physiotherapeutic rehabilitation.

Remaining 3 articles for review with Qualis A1 in the large evaluation area 23 or with an impact factor greater than 3.0.

3. Results

The research results were described in Table 1.

The child's development from the neuropsychosensory and motor point of view depends on the maturation process of the central nervous system (CNS), especially in the first year of life, they demonstrated that the maturation process is related to the degree of myelination, arborization and formation of synapses of the nerve cells in the CNS, which gradually inhibit primitive reflex activities, passing through a transition phase and, finally,

assuming voluntary command of these activities, which will only remain in pathological conditions in patients with brain injury. The maturation of the CNS allows, in addition to inhibiting the primitive reflex activity present in premature newborns (NB), the development of reactions of rectification, protection and balance (postural reflex activity), intellectual development and sensory functions in a harmonic and integrated [4].

Table 1. Summary From results obtained from articles selected.

Authors/Year	Participants	Age	methods	Results
Janssen L., Steenbergen B., 2011	13 children with PRAÇA and 24 children in development.	7 – 12 years old	The children had to pick up and carry a vertical cylinder to a lower shelf or for one shelf more high. THE result of these tests were used to confirm the hand preference that were relected by the participants.	The tests revealed that the height difference of grip in children with CP was significant for both at hands (hand favorite: M= 1.72 cm, t(23)=2.53, p=0.019; non-preferred hand M= 3.69 cm, t(23) =3.52, p=0.002), but not in children with PRAÇA unilateral (hand any less affected: M = 1.38, t(12)=1.51, p=0.16; hand more affected: M= 0.33, t(12) =0.25, p=0.81) These results suggest that the control children adapt their height from hold to the next target, in contrast with at children with PC.
Rosangela LM Vasconcelos et al.,2009	70 children / families	4 The 7.5 years old	Included in the study were all children within the age group proposal, with diagnosis confirmedof PC, the objectives of the study are identify the functional differences of children with CP with different levelsof motor dysfunction and correlate these differences with the domains of mobility, self-care and function Social.	The characteristics of the children evaluated are presented in Table 1. Of the 70 children, 46 (66.7%) were classified in the levels IV/V of GMFCS. The presence was observed of disturbances associated vision, speech and language disorders mental and convulsions in distribution fickleand heterogeneous at the various levels studied. Thosedisturbances were also evidenced, predominantly, us levels IV/V
Regina T. Harbor, Sarah AND. Berger., 2019	20 babies with delay in development and/or PRAÇA	8 The 34 months	Participated in one intervention withemphasis on problem solving motor base and an intervention focused on advancing skill motor through assistance to reach standards in movements ideas.	Participants in both groups obtained significant motor gains from the base, with no difference between the groups of intervention in measurement change scores of gross motor function. The participants of problem solving group showed earnings significant in the scores in resolutionearly problems for babies in relation to participants of group in standards in ideal moves. Overall, the participants increased the active touch of toys and increased The appearance simultaneous with The active touch.

At this level, motricity and tonus disorders are manifested by specific characteristics, such as lack of control over movements, adaptive changes in muscle length and, in some cases, can lead to bone deformities. This occurs in periods when the child has an accelerated pace of development, compromising the process of acquiring basic motor

milestones (rolling over, sitting, crawling, walking) and also in activities of daily living (bathing, eating, dressing) [5].

It is known that the main alteration present in children with cerebral palsy (CP) is motor impairment, which causes several changes resulting from encephalopathy, with consequent changes in body biomechanics. In addition, the child may present cognitive, sensory, visual and auditory disorders that are added to the motor alterations [3].

Typical motor development is the constantly evolving set of characteristics. From birth, the child undergoes profound changes, going from a condition of total dependence controlled only by reflex movements, to becoming an independent being with its own desires. These changes occur mainly in the motor, sensory and psychic areas. Atypical motor development has the persistence of primitive reflexes, insufficiency of balance reactions, hypotonia, hypertonia or fluctuation, presence of tonic reflexes, stereotyped movements, poor without selectivity,

4. Discussion

Authors should discuss the results and how they can be interpreted from the perspective of previous studies and of the working hypotheses. The findings and their implications should be discussed in the broadest context possible. Future research directions may also be highlighted.

5. Conclusions

This section is not mandatory but can be added to the manuscript if the discussion is unusually long or complex.

6. Patents

This section is not mandatory but may be added if there are patents resulting from the work reported in this manuscript.

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Data Availability Statement: In this section, please provide details regarding where data supporting reported results can be found, including links to publicly archived datasets analyzed or generated during the study.

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