

Evaluation of ludic behavior in children with cerebral palsy and of their caretakers' perception

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ABSTRACT

For children, playing helps develop their abilities and in acquiring action and adaptation strategies. Depending on the diagnosis, on the associated or non-associated disturbances, the child with Cerebral Palsy may have difficulties in acquiring general abilities during his or her development, including playing. **Objective:** We sought to evaluate the ludic behavior of the child with Cerebral Palsy and to verify their caretakers' perceptions towards the ludic action of the child, so as to offer them occupational treatment later on. **Method:** The research was quantitative, qualitative, and transversal. For collecting data, the authors used: Initial Interview with parents and the child's ludic behavior Evaluation. **Results:** Through the interview we noticed that 90% of them became interested by the presence of other children, that the majority of the materials used by them during playing were those with audible stimuli (90%), and according to their styles of expression, the majority (31.5%) expressed themselves by gestures according to their need -25% by facial expressions. Following their interests, 42.5% of the children expressed themselves with words and 55% always showed attitudes towards playing. When evaluating the subject, we noticed that 69.1% showed an attitude in playing and only 64% presented some ability for playfulness. **Conclusion:** The study showed that the Initial Interview with Parents was fundamental in helping evaluate the Ludic Behavior. With this evaluation we could observe that their ludic ability is unlimited, but that it does not interfere in the interest or in the ludic attitude of the child. In that manner, playing is essential as a resource in Occupational Therapy for the rehabilitation of children with Cerebral Palsy.

Keywords: caregivers, cerebral palsy, child, play therapy

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INTRODUCTION

Playing is a complete activity that allows a child an environment that will be a source of stimuli favoring cognitive, social, and affective development along with abilities of self-care, problem solving, and sensory-motor functions, in addition to characteristics such as playfulness, imitation, spontaneity, integration, suspension of reality, and sequential progression.¹⁻⁴

By playing, the child has the opportunity to feel the pleasure that is of fundamental importance for playing to really happen and lead to discovering creativity and the expression of their feelings, positive as well as negative, which will contribute to his or her development.^{1,5,6}

For the child, playing is the way of discovering the world, helping to develop their abilities and to acquire strategies of action and adaptation.^{6,7}

The handicapped child presents some type of distinction from the others and can present not only cognitive, sensory, motor, and sensory consequences, but also in their emotional development and in social relationships. Therefore the child with a physical handicap can have difficulties in various activities, including playing, resulting from various factors such as: difficulties in getting to the toys, in handling them, in interpersonal relationships, and environmental conditions.^{1,7,8}

The act of playing is of immense importance to the child with a physical handicap, for this experience yields improved motor capacity by the handling of toys of different shapes, textures, sizes, and weights.^{6,8}

Chronic Non-Progressive Infant Encephalopathy (CNPIE), or Cerebral Palsy (CP), is a set of afflictions of the central nervous system that causes motor disturbances and which can occur prenatally, perinatally, or postnatally. Impairments can occur in cognition, perception, vision, hearing, or language, as well as convulsive crises. Cerebral lesions vary as to the area affected and the time and intensity of the lesion.⁹⁻¹²

Regarding muscle tone, Cerebral Palsy can be classified as athetotic (characterized by involuntary movements and variations in tonicity), ataxic (characterized by diminution of tonicity, lack of coordination of movements, and loss of balance), spastic (characterized by paralysis and increased tonicity), and mixed (mingling of spasticity with athetosis).^{9,13,14}

Regarding the topographical distribution of the injury, Cerebral Palsy can be: monoparetic (alteration of one member), hemiparetic (alteration of one side of the body), diparetic (the upper members less impaired than the lowers), and tetraparetic (all four members impaired).^{9,10,15}

Depending on the diagnosis and on any associated disturbances, a child with Cerebral Palsy can have difficulties in acquiring the general skills for his/her development. Playing therefore gives the child a chance to face new situations and thereby develop his individual skills.¹⁶

Occupational Therapy uses such activities as an instrument to broaden their social environment, bring autonomy, and improve the quality of life of people who for some reason have difficulties in social insertion and participation. It is of fundamental importance that the individual's activity has a meaning for him.¹⁷

Hence the activities used in the treatment of children with Cerebral Palsy can be carried out by playing, since this can be the means of motivating a child during the therapeutic process.^{3,6,8}

In this way playing is an important domain in the clinical practice of Occupational Therapy in the treatment of handicapped children, considering that it is the main occupation of infancy and permeates the entire daily routine. These professionals must focus on the skills and potentials of the child through the playing experience and seek environments free of social, physical, and cultural barriers.^{6,18}

The act of playing must be facilitated for the physically handicapped child in order that it might explore and externalize his/her feelings in this playful milieu. It is necessary to give them opportunities to participate in the games, facilitating contact with other children, adults, and objects, thereby favoring his/her development and growth.^{1,5,6}

The present work seeks to evaluate the playing behavior of children with Cerebral Palsy and verify the perception of their caregivers regarding the child's play activities to subsequently offer him/her occupational therapy treatment.

METHOD

Participants

Children with Cerebral Palsy in clinical monitoring at the Base Hospital of São José do Rio Preto, in São Paulo, Brazil.

Children younger than 2 or older than 12 years of age who were not connected with the Base Hospital were excluded from the study.

The patients were previously informed as to the purpose of the study and they were asked to sign two copies of the Terms of Free and Informed Consent, one of which they retained and the other of which stayed with the researcher.

Study dynamics

This was a transversal study, both qualitative and quantitative, evaluated and approved by the ethics committee (Protocol No. 3392/2010). The work was begun in August of 2010 and completed in December of the same year. Forty children were selected with an average age of 6.5 ± 3.0 years, of which 52.5% were male ($n = 21$) and 47.5% were female ($n = 19$); they have Cerebral palsy and are connected with the Base Hospital of São José do Rio Preto - SP.

The way to develop this research was to use two instruments: an initial structured interview using 8 questionnaires with the parents to get to know the child's playtime behavior at home. These questions included: the children's interests, their mode of communication, the toys they knew and used, some playtime characteristics, and their playmates, as well as their play attitude and the Evaluation of Play Behavior (ECL, *Évaluation du Comportement Ludique*). Through this evaluation we sought to understand the children via their playtime behavior, to look into what interests them in general and especially in playing, and to evaluate their abilities, their difficulties, and their play attitude, as well as to understand during the appointment their manner of expressing their needs and feelings. The evaluation was made by observing a child during the Occupational Therapy appointment with the objective of intervene on the play. The child's interests were scored as follows: 0 = indifferent; 1 = average interest; 2 = sharply interested; and n.o. = element not observed.⁶ All the patients that fit our inclusion criteria were invited to participate in the research and after accepting, signed two copies of the Terms of Free and Informed Consent.

First the initial interview was held with the child's guardian, which took an average of 30 minutes, and soon afterwards the child was evaluated by the individualized mediation of an occupational therapist. The evaluation with the child lasted an average of 50 minutes.

Statistical analysis

The results were presented in terms of average, standard deviation (SD), and percentage.

RESULTS

Of the 40 children who participated in the research, 35% (n = 14) presented Spastic Quadriplegic Cerebral Palsy, 27.5% (n = 11) presented Spastic Hemiplegia, 15% (n = 6) had Spastic Diplegia, and the remaining 22.5% (n = 9), was composed of flaccid Quadriplegia, athetotic Quadriplegia, and ataxic Quadriplegia. We confirmed that 50% of the children (n = 20) had enrolled in special schools, 25% (n = 10) went to regular schools, and 25% (n = 10) had no schooling.

We found that 57.5% of the children presented motor difficulties, 42.5% presented cognitive impairment, and 55% had language difficulties.

By means of the caregiver interviews we confirmed that the presence of other children was the element that most sparked the child's attention, and what least caught the attention was the auditory element, the sound of the voice (Table 1). According to the caregivers, the materials most used in playing were sound stimulations such as toys with children's songs. In addition, we confirmed that toys with different textures were the least-used materials during play time (Table 2).

According to the caregivers, 72.5% of the children like to be in new places, and only 20% repeat the same game to master it better (Table 3).

The research showed that, for their needs (physiological and for attention and safety), 31.5% of the children expressed themselves with gestures, followed by 28.5% with words/sentences, 14% with sounds, 13.25% with no form of expression, 7.5% with facial expressions, and 5% of the caregivers reported not knowing the forms the child used to express his needs. For their feelings, a majority (25%) of the children expressed themselves by facial expressions and the minority gave no expression at all (Figure 1).

The caregivers report that when a child is interested in some play, 42.5% express themselves by words and phrases, 27.5% by gestures, 20% by sounds, 7.5% by facial expressions, while only 2.5% do not express themselves.

The interviews revealed that when there are different textures (soft or rough) on the toys used, 35% make some gesture, 30%

Table 1. Elements that caught the subjects' attention

Elements	Total	
	n°	%
Visual		
- picture books	22	55
- vivid colors	20	50
Auditive		
- stories	13	32.5
- singing	25	62.5
- songs	35	87.5
- vocal sounds	8	20
Tactiles		
- physical contact	25	62.5
Social		
- presence of other children	36	90
- presence of a known adult	34	85
Others		
- characters	13	32.5
- comical situations	14	35
- presence of an animal	24	60
- specific activities (empty a closet, open doors, computer)	14	35

Table 2. Materials used in playing

Materials	Total	
	n°	%
- different textures	21	52.5
- sonic stimuli	36	90
- visual stimuli	34	85
- encouragement to imitate frequent situations	18	45
- stimuli to the imagination	22	55
- encouragement to move	27	67.5
- encouragement to interact with others	35	87.5

Table 3. Characteristics of games

Characteristics of playing	Total	
	N	%
- to repeat the same game to master it better	8	20
- to play with new toys	19	47.5
- to be in new places	29	72.5
- to play and explore places outside the house	14	35
- using a toy in a conventional way	20	50
- imagining new ways to use a toy	17	42.5
- to move around on their own power	22	55

make some facial sign, 17.5% make no sign, and 17.5% of the caregivers did not know how the children expressed themselves.

When the child was in contact with elements like sand, water, and grass, 56.5% expressed themselves by gestures, 30% made a facial

expression, 10.75% showed no expression, and only 1.5% of the caregivers did not know how they expressed themselves.

According to the parents, 55% of the children always showed attitudes for play and 11.25% had no attitude in the games (Figure 2).

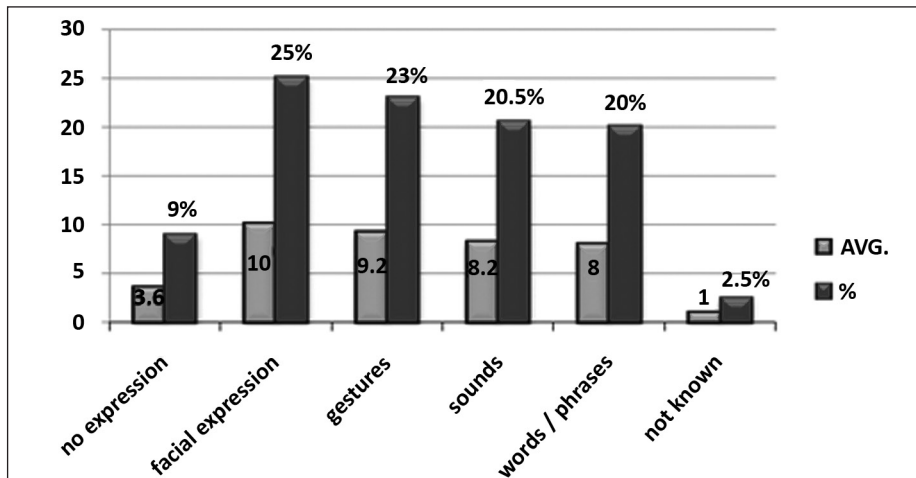


Figure 1. Ways the subjects expressed their feelings (pleasure, displeasure, sadness, anger, and fear)

By means of the Evaluation of Playful Behavior done with the children during the Occupational Therapy session, we obtained these resulting scores: the average for the children's general interest was 16.75 ± 3.9 from a possible total of 26; for playful interest, the average was 40.55 ± 12.7 of a possible 66; the playful capacity averaged 35.45 ± 18 from a total of 76; the playful attitude showed an average of 8.37 ± 2.5 from a possible of 12; and finally, from a total result of 32, that the average for the children expression was 15.6 ± 5 . The aspect here with the greatest relevance is the playful attitude while the least relevant was the playful capacity (Figure 3).

DISCUSSION

The initial interview with the caregivers showed us that the children were interested in physical contact and in the presence of other children and of adults. This result was compatible with a study by Ferland,⁶ who compared the play interests of 30 physically handicapped children with 20 normal children. According to the mothers, they were all interested in physical contact, and children with cerebral impairments were most interested in children of the same age to play with.⁶ Research shows the important role that social relationships play in the development of a handicapped child. Vygotsky

affirms that it is in cultural development that broader possibilities open to compensate for a handicap.¹⁸

The brain injury that a child with Cerebral Palsy has is not enough to explain the whole of his or her development, for a large part comes from opportunities that a social environment offers. Playing is an important resource for it allows the child to interact with others, which boosts his development.¹⁶

The Ferland⁶ studies showed that, according to the mothers, even with motor impairment children show an interest and readiness to play. That is compatible with the findings of this study, wherein the caregivers reported that over half the children (55%) were always ready to play.

The initial interview was fundamental in helping evaluate the playing behavior of each child. We observed the ways in which the children usually expressed their needs, their feelings, and their interests, aside from the way they reacted to some textures, which improved our understanding the behavior of each child and favored individualized attention.

The Evaluation of Play Behavior was done during an Occupational Therapy session in which proposed activities were selected according to each child's own characteristics. The child could choose between three types of games to play during the session. He or she was also free to suggest another game instead of it being chosen by the therapist, enabling the child to play more freely in addition to stimulating his/her autonomy by having the power to choose, although in many cases these children could not choose what to do.^{6,16,17}

Via the Evaluation of Play Behavior we observed that the Play Attitude was the most relevant item, followed by Playful Interest and Playful Capacity. This data concurs with the literature, which denotes that motor and cognitive difficulties do not significantly interfere with playful attitudes and interests; in other words, they are not factors that impede children with cerebral palsy from having the motivation and attitude to play.^{6,16,17}

CONCLUSION

The study demonstrated that the initial interview was fundamental in helping in the Evaluation of Play behavior of children with Cerebral Palsy. With this evaluation we can see that the capacity to play is limited, but that limitation does not interfere either in the

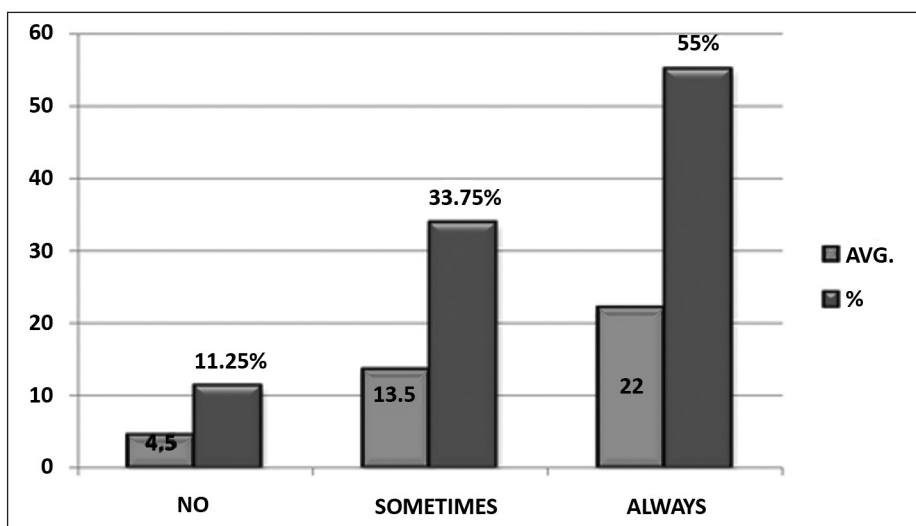


Figure 2. Attitudes towards games

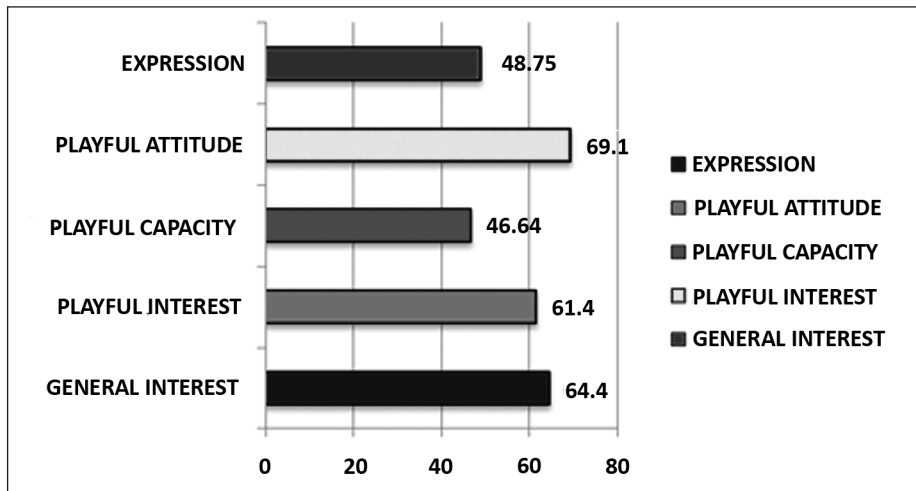


Figure 3. Evaluation of the playful behavior in the child with CP

child's interest or attitude towards playing.

Therefore for the Occupational Therapist, playing is indispensable with children with Cerebral Palsy, for it is an activity that awakens similar interests and attitudes in non-handicapped children.⁶ For each child evaluated, the occupational therapist will utilize playing with specific objects in accordance with personal characteristics, difficulties, and skills shown during the session.

Playing will have to be used as an intervention in reaching therapeutic objectives and to stimulate the overall development of each child. However, it is important to play with the child spontaneously so that he or she does not need to adapt to the therapeutic objectives. On the contrary, the therapist must adapt the therapeutic objectives to the game being played with the child.¹⁶

If the child plays the game imposed by the adult, it will not be done freely, and thus will be done without attitude.⁶ Playing spon-

aneously will have meaning for the child and will promote learning.¹⁸

We can also conclude that deeper studies are needed in this area, since this evaluation was done in only one clinic, and since there was no therapist-patient bond necessary to analyze some of the evaluation items, it could not be any deeper.

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