Daily motor activities and their influence on the development of preschool children

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Summary: Changes in contemporary social structure can influence child development. However, few studies have investigated this phenomenon. The aim of this study was to analyse the daily life of 38 children aged between four and six years, attending an educational institution full time, their interaction with the environment in recreational activities and the possibilities for development. Their daily life was shown to be poor in physical activities; the environment of the day care center is rigid in its routine and inflexible with regard to the appropriate activities for children. However, it was found that a ludic event can propitiate physical activities and enrich the environment.
Keywords: Preschool. Daily life activities. Child development.

1 INTRODUCTION

In recent decades, the structure observed in contemporary society has not been the most favorable for child development. As described by Carlos Neto (2000a), Schwartz

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(2003), Matsudo et al. (2002), among others, urbanization and post industrial development brought great harm to the children's context, since places like the streets, that once were "inhabited" by children's games, are now occupied exclusively by motor vehicles. This unrestrained urban growth, mostly without any architectural planning and structuring, resulted in only a few places reserved for leisure. According to Marcellino (2002), such social changes have become real barriers to the realization of the child's right to leisure and this may influence their development.

The age at which most children go to school has decreased since 1996 (LIMA; BHERING, 2006), due to socioeconomic and cultural transformation and to early childhood education policies. The day care centers were transformed into education institutions. Moreover, Law no. 11,274 (BRAZIL, 2006) increased elementary school to nine years, therefore placing six-year-old children in this educational context, without prior preparation of the schools, which changes the environment in which the child develops. Being in school has decreased the time of family life (many children are in school all day) and time with children of other age groups (most of the time children are in school with children who are about the same age).

Although the target of this type of education is complete child development (BRAZIL, 1996) and the National Curriculum Reference for Early Childhood Education (BRAZIL, 1998) clarify children's right to play, recognizing this action as a form of communication and interaction, children can remain in these institutions between nine and ten hours a day, with few opportunities to play (BATISTA, 1998). Furthermore, most studies related to children in the childhood learning environment favor aspects associated with nutrition and exposure to infections, responsible for much of the morbidities of life in community. Two of these studies are of Amorim and Rossetti (1999) and of Fisberg et al. (2004). Other studies regard the preparation of professionals who work with this portion of the population, such as Seguim and

Daffre (2003), Maranhão (2000) or Verissimo and Fonseca (2003).

The importance of using recreational activities as mediators between the informal knowledge of the child's cultural universe and the formal knowledge of school can be verified in the study by Freire and Goda (2008), who, by proposing a workshop on games, observed, for example, progress in the moral, social relations, motor, affective, and the aesthetic sensitivity fields. For the authors, these activities are appropriate for education, allowing the child to attend school while being a child and produce a space / context typical of childhood.

Romera et al. (2007) investigated the presence of the ludic element in public and private schools, paying attention to the applicability of these activities in the everyday life in school, its connection with the process of teaching-learning and the teachers' understanding about what a ludic activity is. The authors concluded that the teachers who work with early childhood education know what ludic is, recognize its importance to child development and the need the child has to experience it. But the application of intense and broad ludic activity is not yet found in most of the observed actions, which is justified, for example, by the excessive content to be developed in the classroom, which leads to lack of time for these activities.

Other studies observed how the environment / context of childhood educational institutions relates to child development. Barros et al. (2003) found that the use of toys and places where the child remains are unsuited for the age group; there is lack of pedagogical guidance and socialization outside the family. These authors concluded that the development of biologically healthy children can suffer negative influence from environmental risk factors.

De Marco (2006) observed child interaction with the environment in Physical Education classes and free activities and suggested that personal attributes can influence the

emotions shown. She proposed that positive attributes such as curiosity, interest and engagement in activities favor the emergence of feelings of joy, while negative personal attributes (impulsivity and lack of motivation) produce frustration in children.

This author also noted that the level of the child's motor skills can hinder his/her participation in a particular activity, causing feelings such as anger or sadness, but success in the activities brings feelings of joy and excitement. The classes that were observed were most often in the form of command, with the teacher making most of the decisions, which greatly restricted the possibility for the children to be creative in their motor responses and consequently in developing autonomy, as in times of free motor activities, kids showed little creativity and little autonomy.

Ramalho (1996), analyzing five- to six- year-old children in spontaneous activities during the preschool break, verified that this environment allowed few interpersonal relationships, with activities that meant little to the children and which did not favor the experience of various social roles. The findings of the socio-cultural context did not show dynamics, gradual adjustment or restructuring of the ambience by the child. But investigating the school break, the use of space and equipment and the interaction behavior between children, Fernandes (2006) concluded that the schoolyards, where there are incentives due to the diversity of materials and spaces, provided some interesting interactions among the children. These interactions had different characteristics from the interactions in the classroom, and the children could or not have contact with children of other age groups for the joint development of games.

Nascimento and Pellegrini (2004), also analyzing the school break of 4/5- and 6/7- year-old children, found that these moments are conducive to child development, providing opportunities for children to organize, create and reorganize spaces and activities, favoring social interactions. They

concluded that learning occurred because of established social interactions and moments of spontaneous exploration and discovery through their own actions.

Investigations such as the ones mentioned above, about the activities done by children in free and ludic environments, considered the characteristics of the physical structure and materials available for children to play. They also revealed the various contributions made to child development, but did not discuss whether the children had sufficient prior learning to independent play in free moments.

We can see that changes in the environment could be restricting the possibilities of the child to move, but there are few studies that examine the everyday life of children. It also appears that most of the children that are being taken to children's institutions do not have classes that provide movement experiences; or that these classes may be very controlled, not favoring the development of autonomy and creativity.

In their spare time, some children organize themselves, modify the environment and participate in games that may favor their development, while others do not, probably due to the lack of experiences, challenges, incentives, freedom, warmth, space and adequate materials.

This study aimed to examine the everyday life of children who remain full-time in an educational institution for children, as well as watch them in a playful environment. We observed the children after a period of intervention in Physical Education classes, in which learning of various games was encouraged and favored. We analyzed whether this context favors development.

2 METHODOLOGICAL ASPECTS

2.1 RESEARCH CHARACTERISTICS

This is a descriptive study, conducted in accordance with the assumptions of the Bioecological Theory of human development proposed by Bronfenbrenner (1992, 2005), to observe the interaction between the child and the context in which he/she operates, verifying personal characteristics, i.g., inclinations (curiosity, initiative, commitment to activities), resources (skills and abilities), behaviors (ability to receive attention, affection or arouse negative feelings, positive and negative leadership, difficulty in complying with rules) and context (activities that he/she performs, assuming social roles and interpersonal relationships in which he/she participates).

2.2 PLACE AND STUDY PARTICIPANTS

We observed 38 children between four and six years of age, male and female, attending a public institution of early childhood education, full time, on the outskirts of the city of Piracicaba-SP. The children's parents signed an informed consent form. The school had a park with a seesaw, a swing, a merry-go-round and a small hall and did not offer Physical Education classes. Most children came from families with limited financial resources and low education levels. The study was approved by the research ethics committee of a university, with approval letter nº 61/06, which granted permission to conduct the study.

2.3 MATERIAL AND METHOD

The school routine was developed by the school directors through a document which contained the schedules and the proposed activities for each day of the week.

For the analysis of the child's daily life, we collected information on activities outside the school; through a form to

evaluate the activities of daily life, adapted from Silva et al (2004) with questions regarding the activities of the previous day and the previous Sunday. The collection of data was held between Tuesday and Friday, individually, with each parent or caretaker. We performed a descriptive analysis of the data distribution.

The intervention in the children's routine came about through a program where a physical education teacher taught 29 lessons, each with a duration of 40 minutes, with two weekly classes for Kindergarten I and Kindergarten II A and B, separately. Children could learn various games with the following materials: sheets of colorful non woven fabric, colored balls, cardboard tubes, shuttlecocks and tires. The classes were recorded in a diary, according to Minayo (1996), which contained a description of the activities.

After these lessons, the children were randomly divided into four groups and participated in an event (mini circus) with four stations of activities and children of other age groups and schools. For this study, only one station was chosen, where the children were instructed to play freely with the materials, having space as the only restriction: the children should stay in only one part of the court (equivalent to ¼ of the total size of the court) until the end of the activities, which occurred after 15 minutes. The supplied materials were cardboard tubes, sheets of non woven fabric, balls and shuttlecocks arranged on the ground side by side.

The event was recorded with two mini DV digital cameras, NTSC (30 frames per second). The first camera was mounted on a 1.36m tall tripod and placed alongside the observation space (indoor sports court), 3m away from the activities. The second camera was movable, and we used the zoom feature to capture images randomly. These images were transferred to a computer with Pinacle Studio-Movie Box 9.4 software, for frame by frame viewing.

These images were analyzed according to the interpretative axes proposed by Bronfenbrenner (2005). The

recordings were written in a table containing the number of children, social interactions performed, activities, material and social roles taken on.

3 RESULTS AND DISCUSSION

3.1 THE CHILD'S EVERYDAY LIFE

Children arrive at school between 7a.m. and 8a.m. and they leave between 4p.m. and 5p.m. Upon arrival, the children have breakfast for 20min. Soon after they brush their teeth, which lasts 10 minutes. Then they participate in a conversation circle and directed activities, which last about 90min, then they head to the park to play for 40min. After this, children take a shower then have lunch. After the meal, they brush their teeth and go to sleep, which lasts about 135min. Upon waking, they drink milk and after that they listen to stories and songs. Then they have dinner, brush their teeth and await the arrival of their parents or guardians.

We note, therefore, a process that Pinto (2003) called childhood confinement, i.e., children remain locked in educational institutions where, unlike the steet space, it is the adult who organizes their time and space and who defines their activities and actions. Sleeping is required even if the child is not sleepy, as was observed by Santos (2006), for whom the practice of sleeping in the early childhood education institutions is a standardized activity that repeats historically constituted models, which do not respect individual differences regarding the length of sleep. The recreational opportunities are scarce in this institution, as have Romera et al. (2007) found in other institutions of early childhood education.

Regarding the child's daily life outside school, it was found that the child's average nocturnal sleep on weekdays was 9 hours and 48 minutes, with a minimum of 7 hours and 30 minutes and a maximum of 12 hours and 30 minutes. Thus,

adding the time the child spends in school with the time he/she sleeps outside school, we have an average of 19 hours and 23 minutes, which leaves only 4 hours and 37 minutes for other extracurricular activities.

Outside school, children spend about 106 minutes during the week and 120 minutes on the weekend doing physical activities: no child participates in school sports or other activities under the supervision of a Physical Education teacher. Most children spend on average 283 minutes during the week and 323 minutes over the weekend doing physically passive activities. Most of that time is used by most children to watch TV, both during the week and on Sundays. Table 1 shows the mean and median time spent on these activities.

Therefore, the average time spent on physical activities is smaller than that spent on physically passive activities, which shows that these children are wasting time and space to play actively, as has also been reported by other studies (CARLOS NETO 2000b; Gavarry et al. 2003; STABELINI NETO et al. 2004; TOIGO, 2007). Thus, although there are also opportunities to play during the weekend, the average time spent on these physical activities is still lower compared to the time spent on physically passive activities.

Given these results, there is still a great distance between what is considered necessary for child development, i.e., be physically active, with what is actually experienced by children in their daily routine inside or outside the educational institution (GAVARRY et al. 2003; SILVA, 2006). The child plays, has opportunities to move, but in time and space, these physical activities still occur in smaller proportions than physically passive activities, as was also demonstrated by the studies of Carlos Neto (2000a, 2001b); Gavarry et al. (2003); Stabelini Neto et al. (2004) and Toigo (2007).

The child needs to play, needs to move, but these moments are rare. In the institution, time to move and play is limited to 40 minutes in the park, where often the activities are directed according to the availability of equipment and room

rotation, causing the children to have to "wait" to play. In some cases, the children have to keep close by, under the eyes of the teacher, unable to run, loosen up and relax.

With the introduction of Physical Education classes, children have been given 40 minutes of physical activities twice a week, which is still not close to the amount of movement appropriate for this age group. Other times of motor activities could be offered to them in the institution. In these classes 15 different games and activities were conducted, as follows:

Catch the tail (12 lessons), Magic Carpet (12 lessons), "Lenço Atrás" (literally, handkerchief behind) (15 lessons), Run and Catch (9 classes), Statues (9 classes), Wake up Mr. Bear (15 lessons), Relay (12 lessons), Relay Race (12 lessons), Cat and Mouse (12 lessons), Horsey Race (12 lessons), Acrobatics (12 lessons), Handkerchief Race (12 lessons), "Cachorrinho e seu Osso" (literally, Puppy and its Bone (3 classes), Salada de Fruta (literally, Fruit Salad) (6 classes) and Snake (3 classes).

In the beginning of the program the children wanted to run around the room and were not eager to listen to the instructions; there were negative behaviors, such as impulsivity, lack of motivation, expressions of anger and aggression, which decreased with time. The children demonstrated learning social rules, increasing control of emotions, interpersonal relationships and increased gain of motor skills to perform the activities.

3.2 CHILD DEVELOPMENT

The activities in Physical Education classes provided interaction with the environment that fostered the development of children, which could also be observed when they moved to another location with different environmental demands. According to the theoretical assumption made, the observation

of development (BRONFENBRENNER, 2005) takes into account four factors:

Process (reciprocal and progressively more complex interactions between the person and the environment); Person (their dispositions, resources and demands); Context (environments that directly or indirectly influence the person) and Time. These factors allow the observation of behavioral changes.

During classes, changes in the interaction of children with the environment could be perceived, such as the appearance and strengthening of interpersonal relationships, which went from dyads or triads (relationship between two or three people) on an observational level to dyads or triads of joint participation. Manifestations of positive behavior such as the ability to receive attention and affection, positive leadership and disposition generators (curiosity, initiative, commitment to activities) were strengthened. These characteristics remained in the event, where interpersonal relationships and these behaviors and dispositions were maintained.

During the event, 12 observational dyads and 16 joint participation dyads, 4 joint participation and 4 observational triads were observed. Of these interactions, only two observational dyads were observed among children of this study and the children of another institution.

For Bronfenbrenner (1996), the joint participation dyad is constituted of two people who perceive themselves doing something together, not necessarily the same thing; on the contrary, the activities are different but complementary. When two people engage in a joint activity, it is possible to develop more differentiated and lasting feelings towards each other, such as reciprocity (the activities that one does influence the other, so they have to coordinate activities), balance of power and affection in relationships (they develop stronger feelings according to activity progressivity).

In the event, children played run and catch, explored the material freely, performing activities of locomotion and manipulation of one material or a combination of two materials, which gave them new meanings. They did a total of 30 different activities, some experienced in Physical Education classes and others not.

Some children distanced themselves from the space demarcated by a ribbon to explore other equipment on the site, creating different activities. One can note that with quite affordable materials, they developed many play possibilities. Furthermore, they exceeded the limits set by the station to go to other places that were attractive to their imagination.

Observing the relationship between activities and the social interactions established, it appears that the activities that led to more interactions were carried out with the ball and the tube. This may have occurred because these materials were previously known by the children, since they had played with them during Physical Education classes, offered before the event. The ease with which they handled the material stimulated the free expression to play with it and explore it with other children.

The number of interpersonal relationships of joint participation was greater than the number of observational relations. This may have occurred because in their free time, the children chose the activities, partners and materials, which made them enjoy the activities, increasing their involvement with them. Coelho (2007), observing the behavior of children during the practice of recreational motor activities, created by the children in response to problem-situations presented to them, found that children do self-organize, modify the environment and create their own activities.

The dominance of personal interrelationships with children of the same institution can be justified by the few opportunities the child has to play with other children. Even within the institution, the child has little contact with children outside her/his immediate circle (classroom). These results

corroborate the findings of Fernandes (2006) and Nascimento and Pellegrini (2004), who found that in playful moments in the playground and during recess, several interactions occur between children, and they self-organize, create and rearrange spaces and activities.

We also observed the experience of social roles, both during classes and in the event. These roles were: acrobat, football player, wrestler, sweeper, knight and painter. The opportunity to take on different roles helps the child to understand the social dynamics in which he/she operates, be it in a game in school, at home or in society in general. The child perceives and understands his/her position in relation to other people, as well as people's position in relation to him/her. Social roles directly influence interpersonal relationships established by the children, who, when taking on certain social roles, may present role related behavior, therefore changing the dynamics of the relationships established (KREBS, 2009)

4 FINAL CONSIDERATIONS

The reality experienced by the child in this institution is not the most satisfactory one, because, despite having her/his basic needs (food, hygiene and sleep) met, one of her/his basic needs is not being met at all, i.e., the need to play and move, since the institution offers only 40 minutes of daily physical activity, and on average, out of school, they can play for another 60 or 90 minutes. But is this enough? Certainly not! The child is not a child only 40 minutes a day, she/he is a full-time child, which means he/she is in movement the whole time.

The inclusion of Physical Education classes in their routine brought contributions to child development, allowing the experience of social roles, the formation of interpersonal relations, strengthening of positive behaviors and disposition generators, and the opportunity of developing skills that assist

in the process of creativity. But only 40 minutes twice a week is little and many institutions do not even offer that.

Through play and moving the child explores, discovers, learns, knows him/herself and the other, experiences different situations. Ultimately, through playful experiences, is the child fully a child. However, the reality that we found shows that, having their time planned, set, marked and organized by the adult, the child is smothered in what he/she has and is in his/her essence: movement. Playing transcends a legal right of the child: it is his/her main and most relevant activity.

But what can we do given that reality? One suggestion is that institutions of early childhood education offer more space and time for children to play; education focused on leisure and not just education through leisure should also be introduced; that more playful and free events be designed and planned in the organization of the institution or outside the institution and / or with other institutions, as it was verified that through these activities the child creates, recreates, explores, transforms and expands his/her relationships.

Another suggestion would be to respect individual differences in relation to sleep, by offering spaces and activities for children who do not want to sleep during the time of this routine stipulated by the institution. It would be interesting if children could opt for some activities performed in daily life, transforming moments of passive activities into practices that are physically active and so achieve the same educational goals set by adults.

Finally, it is also relevant to educate parents and / or guardians through lectures and workshops, showing the importance of these moments for child development, so that they can also help to create moments of playful activities for the children.

Atividades motoras cotidianas e suas influências no desenvolvimento de pré-escolares

Resumo: Mudanças na estrutura social contemporânea podem influenciar o desenvolvimento infantil. Porém, poucos estudos têm investigado este fenômeno. O objetivo deste estudo foi analisar o cotidiano infantil de 38 crianças entre quatro e seis anos, frequentadoras em tempo integral de uma instituição de ensino, a sua interação com o meio ambiente em atividades lúdicas e as possibilidades de desenvolvimento. O cotidiano mostrou-se pobre em atividades fisicamente ativas; o meio ambiente da creche, rígido em sua rotina e inflexível com as atividades próprias das crianças. Porém, constatou-se que um evento lúdico pode propiciar atividades fisicamente ativas e enriquecer o meio ambiente.

Palavras-chave: Pré-escolar. Atividades cotidianas. Desenvolvimento Infantil.

Actividades Diarias motor y su influencia en el desarrollo de los niños en edad preescolar

Resumen: Los cambios en la estructura social contemporánea puede influir en el desarrollo del niño. Sin embargo, pocos estudios han investigado este fenómeno. El objetivo de este estudio fue analizar la vida diaria de 38 niños, con edades entre cuatro y seis años, que frecuentan en tiempo completo una institución educativa, su interacción con el medio ambiente en las actividades recreativas y las posibilidades de desarrollo. Su vida cotidiana ha demostrado ser pobre en las Actividades físicas, el entorno de la guardería es rígido en su rutina e inflexible con respecto a las actividades apropiadas para los niños. Sin embargo, se concluió che el evento lúdico puede propiciar actividades y enriquecer el entorno físico.

Palabras clave: Preescolar. Actividades de la vida diaria. Desarrollo infantil.

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