

AN OUTLINE OF THE ISSUE OF THE NEED FOR PHYSICAL ACTIVITY AMONG PRESCHOOL CHILDREN – AS EXEMPLIFIED BY BIAŁA PODLASKA AREA

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Abstract

Introduction. Respecting a child's need for physical activity is an extremely important factor that determines proper development of preschool children. To meet this demand children need approximately 6 hours (boys) or 5 hours and 15 minutes of activity (girls) [1]. However, for many years we have seen serious neglect in terms of meeting children's need for physical activity and for staying outdoors. The aim of this study was to define to what extent the older preschool children's need for physical activity and staying outdoors was satisfied. **Material and methods.** An interview with parents and an observation technique were employed in the study. The obtained data were used to draw up an activity card that included activities undertaken by a child in a period of 24 hours. An assessment of physical activity consisted of highlighting movement activities on the card and noting their duration (in minutes). A proper classification was developed to determine to what degree the examined children's need for physical activity and staying outdoors was fulfilled. **Results and conclusions.** Movement activities organised in a kindergarten are the basic form of physical activity of preschool children. It is the only form of physical activity for children whose needs are not fully met (slightly more than half of the children). Children with sufficient physical activity (every third child is exposed to the activity defined as satisfactory, while every tenth child's needs are fulfilled to a very good degree) undertake extra (spontaneous) activities such as outdoor games and plays as well as activities selected by adults. The research revealed that it is necessary to increase the duration of daily physical activities at home and at a kindergarten and to hold outdoor games and plays more frequently.

Key words: need for physical activity, preschool age, physical activity forms, daily balance of physical activity

Introduction

Preschool age is a period of intensive intellectual and social development of a child and the time of increasing physical fitness known as the golden period of motor abilities [2, 3, 4]. Respecting the need for physical activity is an extremely important factor that influences proper development of preschool children. It significantly determines their all-round development, thus stimulating body and mind functions [4, 5, 6, 7, 8].

It is hard to define precisely how much time per day a child needs to fulfil the need for physical activity and staying outdoors. Experts from the world organisations defined a minimal daily norm of physical activity for children and youth in order to maintain health, i.e. World Health Organisation (WHO) recommends at least 60 minutes of physical activity including both moderate activity (MVPA – *Moderate-to-Vigorous Physical Activity*) and more intensive activity (VPA – *Vigorous Physical Activity*) to children and youth aged 5 to 17; the National Association for Sport and Physical Education (NASPE) – 120 minutes of structured and unstructured physical activity to children aged 3 to 5; the Active Healthy Kids Canada (AHKC) recommends 60 minutes of moderate activity (MVPA) to children aged 5 to 11 [9, 10, 11, 12, 13, 14].

Kucera undertook research to define children's need for

activity in optimal conditions with the use of a hidden camera method, i.e. he analysed spontaneous physical activity of children in natural surroundings where conditions for various forms of activity were created without the limiting presence and influence of adults [1]. The research revealed that preschool children need approximately 6 hours (boys) or 5 hours and 15 minutes of activity (girls). Intensive activity included all the actions which made children's heart rate increase by 50% compared to the heart rate at rest.

According to hygienic norms of basic elements of children and youth's daily routine, it is assumed that 3 hours of activity daily is a minimum amount [15, 16]. Moreover, a child should spend 2-3 hours in the open and green area [15, 17].

In Poland serious neglect in the field of physical education of children has been observed for many years [18, 19, 20]. The observations by Gruszczyk-Kolczyńska and Zielińska revealed that the number of parents who do not respect their children's need for physical activity and staying outdoors has been increasing alarmingly. The authors that the unfavourable tendencies in family and preschool education have led to this situation. These unfavourable tendencies among supervisors include the fact that they do not create opportunities for children to use their energy and do not care to take children outdoors [21, 22].

In order to care about children's health and their physical fitness and to encourage their participation in plays and sports games, the Ministry of National Education introduced a guideline in the curriculum to devote at least a fifth (in the case of younger children a fourth) of the time spent in preschool to activities in a garden, sports field or a park where games, plays, sports activities etc. should be organised for them [23]. This guideline regulates the responsibility of preschools for ensuring physical development and pro-health education of children.

In the light of caring about the health of young generations, the aim of the research was to define to what extent the older preschool children's need for physical activity and staying outdoors was satisfied. The following research questions were asked:

1. What forms of physical activity are organised at home and at preschool in order to satisfy older preschool children's need for physical activity and staying outdoors?
2. How much time is devoted to these forms of activity at home and at preschool?
3. What are the individual differences in the extent to which the examined children's need for physical activity and staying outdoors is fulfilled?

Material and methods

The research was conducted in the urban environment. It included 30 parents of 5-6-year-old children attending one of the state preschools in Biała Podlaska. The data concerning the subjects are included in table 1.

Table 1. Characteristics of the examined parents with regard to the age and gender of a child

Population					
		Parent			Total
		mother	father	grandmother	
Gender	girl	13	4	0	17
	boy	10	2	1	13
Total		23	6	1	30
Age	5-year-olds	11	4	0	15
	6-year-olds	12	2	1	15
Total		23	6	1	30

The presented research objective falls within the field of diagnostic research. A diagnostic poll method was applied. Children's physical activity was assessed on the basis of data collected in the interviews with parents and observations of preschool classes. The results obtained in this manner were used to draw up an activity card (map) including activities taken up by a child during a weekday and their duration. Creating a daily balance of physical activity meant highlighting movement activities on the card and noting their duration on the day of research (in minutes).

While estimating the time devoted to fulfilling the need for physical activity and staying outdoors, a day of the week when the research was conducted (Wednesday) was taken into account.

The aim of the interview with parents was to collect answers concerning:

- activities undertaken by a child within one day,
- duration of particular activities.

Interviews were performed individually and conducted according to parents' availability to talk. In order to obtain reliable

data during the interview with a parent, it was assumed that the information exchange would take a form of a casual talk. Due to the aim of the research, it was a hidden formal interview. The subjects were informed of the fact that they were interviewed but they were not informed what the topic was, in order not to allow the social role of the researcher to influence their opinions which might differ from their personal opinions [24].

Observation technique was used to register data (on the activity card) concerning activities taken up by children in preschool, especially these activities which fulfil the need for physical activity and staying outdoors. Direct, standardised observation was applied in the research [24].

In order to define individual differences in fulfilling the need for physical activity and staying outdoors, time devoted to physical activity both at home and in preschool was estimated for every preschool child. To define the extent to which the need for physical activity and staying outdoors was fulfilled, three groups of children were selected:

1. children whose need for physical activity and staying outdoors is fulfilled to a very good extent (more than 5 hours of activity daily, including 2 hours spent outdoors),
2. children whose need for physical activity and staying outdoors is fulfilled to a sufficient extent (3 to 5 hours of activity daily, including at least 1 hour spent outdoors),
3. children whose need for physical activity and staying outdoors is not fulfilled (less than 3 hours of physical activity daily).

Assuming that according to hygienic norms for basic elements of daily routine of children and youth, the need for physical activity among preschool children is satisfied with minimum 3 hours daily (approximate norm) of diverse physical activity [15], it was concluded that the need for physical activity is not fulfilled below this norm. In turn, the needs of these children who spend actively minimum 5 hours daily, are fulfilled to a very good extent. Moreover, a child should spend 2-3 hours a day outdoors [15, 17]. The author assumed that 2-3 hours outdoors fulfil this need to a very good extent, while one hour to a sufficient extent. The research was conducted at the beginning of March, observations were performed between 8 a.m. and 4 p.m., while interviews were carried out between 4 p.m. and 4.30 p.m. (after preschool classes).

Results

A daily balance of physical activity includes forms of activity undertaken by children within one day in preschool classes and at home (tab. 2).

During preschool classes on the day of the observation, 2 hours and 5 minutes were devoted to physical activities. During this period children participated in morning gymnastics, sports games outdoors and indoors, and rhythmic classes (tab. 2).

Table 2. Daily balance of a child's physical activity (on the basis of parents' declarations and preschool class observations)

ORGANISERS	HOURS	FORMS OF PHYSICAL ACTIVITY	TIME DEVOTED TO ACTIVITY	PERCENTAGE OF CHILDREN PARTICIPATING IN PARTICULAR FORMS OF PHYSICAL ACTIVITY (N=30)
				n
Preschool	8.00-8.10 a.m.	Morning gymnastics	10 minutes	30
	9.00-10.30 a.m. 12.00-12.30 p.m. 1.10-1.50 p.m.	Physical plays indoors	30 minutes	30
	10.30-11.30 a.m.	Physical games and plays outdoors	60 minutes	30
	1.50-2.15 p.m.	Rhythmics	25 minutes	30
	3.00-3.45 p.m.	Swimming	45 minutes	4
Home	7.45-8.00 a.m.	Walking/cycling to preschool	5-20 minutes	7
	3.00-4.00 p.m.	Walking/cycling back from preschool	5-20 minutes	8
	3.00-7.00 p.m.	Afternoon walk	30-60 minutes	5
		Spontaneous plays outdoors (running, cycling, ball games)	1-3 hours	8
		Spontaneous plays in the outdoor play area	1-2 hours	8
	6.00-7.30 p.m.	Basketball (with a parent)	1.5 hours	1
	7.00-7.10 p.m.	Evening gymnastics	10 minutes	1

Morning gymnastics lasted 10 minutes from 8.00 a.m. to 8.10 a.m. During the day 30 minutes in total were devoted to physical plays. They included five plays with singing, while other types of plays (orientation and order, running, on all fours, jumping, throwing, keeping balance, rolling and climbing) were not taken into account. Time between 10.30 and 11.30 was spent outdoors performing physical games and plays (in winter and spring time children go outdoors only once a day for 60 minutes). On the day of the observation this time was devoted to plays in the outdoor play area. At the end of the day at preschool (between 13.50 and 14.15) children participated in rhythmics classes (25 minutes).

As for spontaneous plays of children, they did not fulfil the need for physical activity. The teacher sidetracked children's attention from physical activity and suggested static plays (usually sitting children at the tables) claiming that in the room there was no space for running. The teacher's behaviour is to a certain extent justified by her concern about the children's safety.

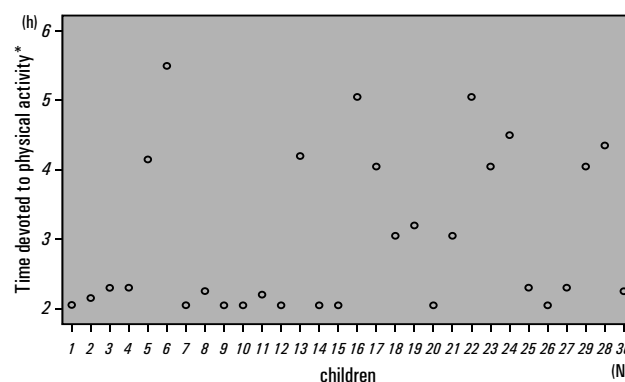
Moreover, the preschool organises 45-minute long swimming classes once a week (on Wednesday). These classes are attended only by those children whose parents gave their consent. Compared to rhythmics classes, which are attended by all children, there are fewer participants (only four children).

At home children take up such forms of physical activity as walking, games and plays outdoors, basketball or evening gymnastics.

As parents declared, walking is the basic form of activity organised by them and undertaken together with a child (directed activity). All the examined parents live in the vicinity of the preschool (within 3 kilometres) but only one in four children is taken to preschool on foot in the morning (every second 6-year-old, i.e. 6 girls and 1 boy). On the way back from preschool also only one in four children walks (only 6-year-olds), where half of this group includes children who use this form of activity only on the way back home. Walking to and from preschool lasts around 10-20 minutes on average. Moreover, every sixth child (only 6-year-olds) goes for longer walks in the afternoon.

Other forms, also connected with fulfilling the need for physical activity and staying outdoors, include mainly free activities in the outdoor play areas (every fourth preschool child, every seventh 5-year-old and every second 6-year-old) or free plays outdoors such as running, cycling or ball games (also one in four children, only 6-year-olds). Moreover, one 5-year-old boy participates minimum once a week in basketball training sessions organised for teenagers by his father who is a coach and a physical education teacher. The training lasts for 1.5 hours and the boy spends this time passing a ball or running on gymnastic mattresses. The only example of physical activity organised at home is evening gymnastics taken up by the father with his son 3 times a week for 10 minutes (tab. 2).

Preschool children differ concerning the extent to which their need for physical activity and staying outdoors is fulfilled (fig. 1). According to the collected research material, it may be indicated that children whose need for physical activity and staying outdoors is not fulfilled, and who participate in physical plays only in preschool, constitute over half of the examined group (the majority of 5-year-olds and every third 6-year-old; more girls than boys) (fig. 2). These are children living in blocks of flats and they usually spend their afternoons playing in their room (artistic activities, playing with siblings or neighbours, board games – 1 hour 30 minutes on average, or watching TV and playing computer games – 1 hour on average). One in three preschool children has the needs for physical activity and staying outdoors fulfilled to a sufficient extent, i.e. they participate in activities organised by a preschool and by parents at home (every seventh 5-year-old, every second 6-year-old, the same number of girls and boys) (fig. 2). Apart from activities in preschool, the need for physical activity and staying outdoors is fulfilled by running, playing in outdoor play areas, cycling, ball games and playing in the housing estate play areas. Every third preschool child has the need for physical activity and staying outdoors fulfilled to a very good extent (one 6-year-old girl and two boys – a 5- and 6-year-old).



* Total at home and in preschool.

Figure 1. Individual differences concerning the duration of physical activity and time spent actively outdoors

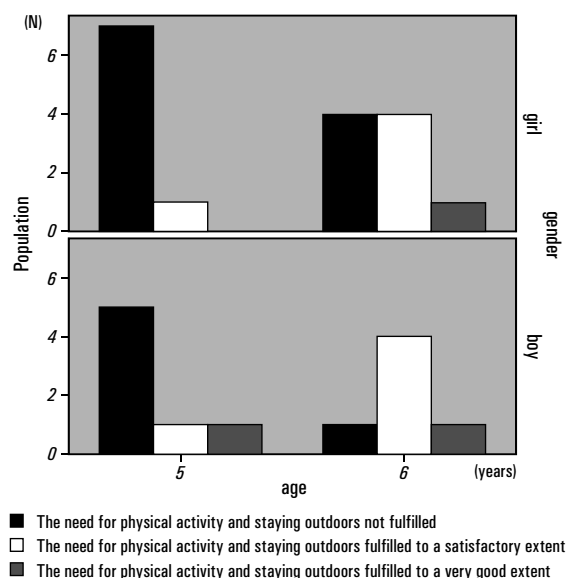


Figure 2. The extent to which the need for physical activity and staying outdoors is fulfilled

Discussion

The research concerning daily routine of 6-year-old children conducted in the 1990s revealed that over half of the examined 6-year-olds fulfilled their daily need for physical activity, including staying outdoors [25]. Basic activities taken up by a child during the day fell within the norm for a 6-year-old [26].

The presented results reveal that the problem of not fulfilling the natural need for physical activity in children currently occurs fairly often. Physical activity of preschool children is low and is mainly constituted of physical plays organised in preschool (for over half of the children it is the only way to fulfil this need) and spontaneous physical activity (playing in the outdoor play areas, running, cycling, ball games, games and plays in the housing estate play areas). Parents rarely take up physical activity with a child. Only one in six parents admits that they take up directed activity (i.e. walking). As Król-Zielińska and Zieliński noted, such forms are undertaken more often on holidays (more free time available) [19]. The results were confirmed by the research by Parnicka concerning observations of spontaneous behaviour of mothers in recreational areas. The participation of mothers in plays with children and their role in the process of initiation to recreation was slight, and they were to a certain extent indifferent to their children's need for physical movement [27]. In numerous cases a child fulfils the need for physical activity in an individual manner, spontaneously or accompanied by siblings or peers, which is confirmed by drawings presenting children playing alone with their toys without the participation of parents [28].

On the basis of the analysis of the daily balance of physical activity it was noted that children whose need for physical activity and staying outdoors is not fulfilled spend time mostly playing in the room (artistic work, playing with siblings or neighbours, board games), watching TV, playing computer games. The research by Król-Zielińska and Zieliński (also carried out in winter) confirmed these results. Their analysis revealed that preschool children spend the majority of time at home (mainly on weekdays) usually sitting in front of a computer or TV [19]. The research carried out by Chatys, concerning favourite activities of children, revealed that they usually choose such activities as computer and television games, car-

toons, board games and simple housework [28]. Unfortunately, none of these forms of activity have anything in common with physical activity. One of the reasons for low physical activity of children and youth is the development of new information and communication technologies, including mobile phones, computers and the Internet. Using these technologies is connected with sitting still for many hours, and due to their attractiveness, they compete with physical activities [29].

The problem of low physical activity of preschool children is also visible abroad. American studies (with the use of pedometer) revealed that only 8% of children make 13981 steps daily (which means only 60 minutes of moderate physical activity), while the recommended number of steps is 16500 [30]. Other studies (European, American, Canadian ones), with the use of accelerometer, revealed that preschool children make even fewer steps, i.e. only $7\,529 \pm 1\,539$, which constitutes 46% of the recommended number. These children took up various forms of physical activity for 219.7 ± 31.9 minutes on average; however, their intensity was low [31, 32, 33, 34].

While analysing the problem of educating children, the preferences of families should be taken into consideration. It may be assumed that in different regions of Poland the processes of fulfilling the need for physical activity may differ, which is proved by the research conducted in Warsaw, where Trzcińska et al. assessed physical activity of 6-year-olds positively [35]. Moreover, these children have a different range of experiences. Therefore, the results formulated in this work cannot be generalised. They present the situation of children growing up in Biała Podlaska and attending classes in one particular preschool group. However, the research revealed that it is necessary to determine the actual state concerning fulfilling the older preschool children's need for physical activity and staying outdoors. Such information will make it possible to draw and prioritise conclusions concerning the corrective measures in the field of physical and health education of children. It is very significant especially concerning the healthcare of young citizens.

Conclusions

1. Physical activities organised in preschool such as gymnastics, outdoor and indoor games and plays, rhythmic classes as well as spontaneous physical activity at home such as playing in outdoors play areas, running, cycling, ball games and plays and games in the housing estate play areas constitute basic forms of physical activity among preschool children. For over half of the children activities organised at preschool are the only way to fulfil the need for physical activity and staying outdoors. However, directed forms of activity organised by parents for children, which could serve as examples of physical education in families, are taken up too seldom.
2. Over half of the children do not have their need for physical activity fulfilled (more often girls and 5-year-olds). The remaining children from the group have their needs fulfilled – every third preschool child to a sufficient extent and only every tenth child to a very good extent. A child's physical education in this period of life influences further physical development. However, the neglect in this period cannot be made up in further years of life.
3. There exists the need to increase the number of hours devoted to physical activity at home and in preschool and to organise more plays outdoors. Unfavourable tendencies in family education should inspire parents and teachers to work more intensively to fulfil the need for physical activity in a way beneficial for the psychomotor development of children.

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