Motor activity of children during stay in a preschool educational institution

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Abstract

Objective of the study was to identify the volume of motor activity of preschool children during their stay in a preschool educational institution.

Methods and structure of the study. To collect information on the number of motor acts of preschool children during the study, the method of shagometry was used. The number of locomotions was counted using a Yamax DW-200 Sh 25 pedometer manufactured by Yamasa Corp., Tokyo, Japan. The scientific research was carried out during the cold period of the year from November to March. A total of 234 children were tested.

Results and conclusions. With the help of shagometry, differences in motor activity were revealed between boys and girls 3-4 years old and 5-6 years old uring their free motor activity. It has been determined that the organization of motor activity during a walk is an important form of a child's physical activity, since it includes the largest number of locomotions performed by the child during he day. Therefore, it is necessary to develop programs for the physical education of preschool children, which will be aimed at the effective implementation of their motor activity during a walk, as well as the creation of a developing object-spatial environment for the territory of a walk for preschoolers using sports simulators nd equipment.

Keywords: *child, physical activity, development, motor skills, motor activity, pedometry.*

Introduction. The education, upbringing and development of preschool children involves complex processes of biological, physiological, psycho-emotional and socio-humanitarian changes in the child. Systematic classes in physical culture and sports are of great importance for the physical development, motor and functional readiness of preschoolers, and also influence the formation of a conscious attitude to motor activity [4].

The works of J. Milenko et al. (2021) noted that children aged 4–5 years spend 85% of their time daily in a sitting position and only 15% are engaged in moderate or intense physical activity [10].

The World Health Organization (2020) guidelines state that children aged 5 to 17 should engage in moderate to vigorous physical activity for at least 60 minutes per day. Such physical activity is optimal for the development of the functional systems of the child's body, as well as for the prevention of obesity [5].

According to studies by C. Tudor-Locke et al. (2004), to maintain the optimal state of health of the child's body, boys aged 5-7 years should perform about 15,000 steps, and girls of this age - about 12,000 steps [11]. In the works of J.S. Duncan, G. Schofield, E.K Duncan (2007) noted that in order to avoid overweight, preschool children need to perform 16 and 13 thousand steps per day for boys and girls, respectively [8].

It should be noted that in the works of L.A. Kurtz (2006) revealed deviations in motor functions that are demonstrated by preschool children who do not have intellectual disabilities. Such concepts as "clumsy child syndrome", developmental dyspraxia, implying problems in the implementation of coordination ac-

tions, are becoming relevant, provided that children do not have pronounced disorders of the intellectual sphere and muscle tone [9].

Active muscular activity, according to many researchers (N.A. Bernstein, R. Aston, etc.), is one of the main elements in the development of the functional systems of the child's body, in the formation of vital motor skills and abilities, and in the formation of a conscious need to perform physical exercises [1, 6].

In the works of N.A. Bernstein (1966), motor activity is considered as a factor in the development of the human nervous system, in particular, his psychomotor abilities, which include simple and complex sensorimotor reactions of the body. Thus, the relationship between motor activity and the development of the human nervous system is determined. In this regard, the process of physical development must be considered in close connection with cognitive and mental development, starting from preschool age. It should be noted that in the process of physical development of preschoolers it is necessary to pay attention not only to the development of physical qualities, but also to the development of psychomotor abilities [1].

In the studies of A.S. Denisova, Yu.M. Saveliev (2022) notes that the central nervous system in the process of human motor activity is stimulated by impulses from working muscles, which has a beneficial effect on its development. The level of development of the central nervous system depends on the complexity of performing a motor action, in particular, complex coordination exercises and exercises aimed at developing fine motor skills [2].

In the work of V.P. Dudeva (2020) established the relationship between the level of a child's motor fitness and the development of his speech apparatus, including the volume of vocabulary [3].

In the studies of P. Bonifacci, S. Contento (2008), the relationship between the components of general and fine motor skills of a preschool child was noted. Primary is the mastery of motor actions of large motor skills, and the mastery of elements of fine motor skills occurs secondarily. It should be noted that the motor actions of general motor skills have a positive effect on the formation of not only fine motor skills, but also on psychomotor development, in particular, on simple and complex sensorimotor reactions in children [7].

In this regard, the motor training of a preschooler is the most important element that considers the development of the child both from the side of physical development and invests in it the process of preparing for cognitive activity. This process draws parallels between the movements and cognitive abilities of the child.

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In the process of studying the motor activity of children during their stay in a preschool educational institution (PEI), pedometer indicators were analyzed when organizing free motor activity of preschoolers (on days when children do not have classes in physical education, art and aesthetic education, robotics, etc. .). The study was conducted from November to March with a four-hour interval in the morning and evening in

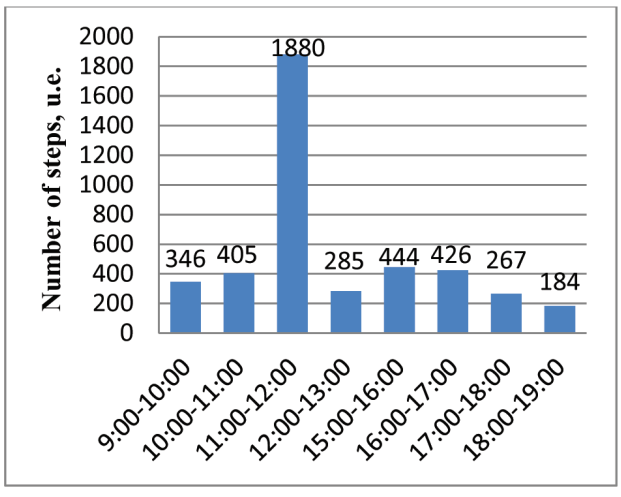

Figure 1. *The number of motor acts of girls aged 5-6 during their stay in kindergarten*

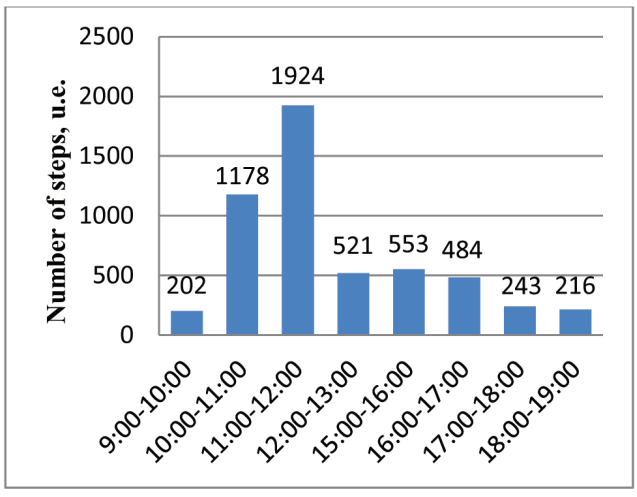

Figure 2. *The number of motor acts of 5-6 year old boys during their stay in kindergarten*

Table 1. *Motor activity of preschool children during their stay in preschool educational institution*

Indicators	Girls 5-6 years old	Boys 5-6 years old	Girls 3-4 years old	Boys 3-4 years old
	$\bar{X} \pm \sigma$	$\bar{X} \pm \sigma$	$\bar{X} \pm \sigma$	$\bar{X} \pm \sigma$
Number of locomotions, c.u.	4482±1036	6090±978	3960±963	4264±952
Distance traveled, km	2,22±0,54	3,18±0,87	2,08±0,57	2,14±0,61

accordance with the regime moments of certain age categories of children (from 9:00 to 13:00, from 15:00 to 19:00). The study analyzed data from a pedometer of 234 children (132 children 5-6 years old (70 girls, 62 boys), 102 children 3-4 years old (46 girls, 56 boys).

Results of the study and their discussion. As a result of the study, it was found that the number of steps performed by girls aged 5-6 years in the process of free motor activity during their stay in the kindergarten averaged 4482 steps, this figure is less than the average value of boys 5-6 years old - 6090 steps. Analyzing the average indicators of the number of locomotions in children aged 3-4, it can also be concluded that boys (4264 steps) are more active than girls (3960 steps) of this age (Table 1).

According to the results of the distance traveled by preschool children, it can be concluded that during their stay in the preschool educational institution with free motor activity, girls 5-6 years old covered an average of 2.22 km, while boys 5-6 years old overcame more than 3 km. Girls and boys of 3-4 years old walked a little more than 2 km (2.08 km and 2.14 km, respectively) (Figure 1, 2).

Conclusions. As a result of the study, it was determined that the organization of motor activity during a walk is an important form of a child's physical activity, since it includes the largest number of locomotions performed by a child during the day. Therefore, it is necessary to develop programs for the physical education of preschool children, which will be aimed at the effective implementation of their motor activity during a walk, as well as the creation of a developing object-spatial environment for the territory of a walk for preschoolers using sports simulators and equipment.

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