

Level of development of motor qualities of children of senior preschool age

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Purpose: determine the level of development of individual motor skills in children 5–6 years.

Material & Methods: study involved 52 pupils of a pre-school institution of 5–6 years old. Such research methods were used as theoretical analysis and synthesis of scientific and methodical literature, pedagogical testing and methods of mathematical statistics.

Results: presents a comparison of motor performance indicators in the age, sex aspects and with the corresponding rating scale.

Conclusion: in the sexual aspect, it was found that the boys show better results than the girls, with the exception of forward torsion from the sitting position and flexion of the foot, where the results are better for girls; Analyzing the level of development of individual physical qualities relative to age, it should be noted that the results of children improve with age; comparing the results with the standards, showed that the indicators correspond to the "average" level.

Keywords: physical qualities, preschool children, physical education.

Introduction

Complex socio-economic and environmental problems in modern Ukraine lead to a deterioration in the physical and mental condition of the majority of the population. Of particular concern is the fact of the decline in the level of health of children of preschool age. The results of annual medical examinations showed that over the past 15 years, the number of children with cardiovascular diseases, diseases of the musculoskeletal system and overweight has increased. In recent years, a significant increase in the number of children with reduced visual acuity and poor posture has been recorded. The importance of studying the health problems of preschool children is also in the fact that 75% of adult diseases are a consequence of living conditions in preschool and primary school years [6; 9].

In preschool age, the foundations of a person's physical and mental health are laid, the most intensive growth and development of the most important systems of the body and their functions is carried out. Preschool age, according to the authors [1; 3; 8], is a favorable period for the development of many physical qualities.

Physical education is the most effective factor in improving the health of children. However, the physical education system in Ukraine, one of the links of which is the pre-school physical education system, is in a crisis state and cannot always solve its main goal – health promotion..

Currently, quite intensive research is being conducted in the field of physical culture and sports [4; 7; 10; 11]. However, with regard to the problems of preschool physical education, they are definitely not enough compared with studies of other age groups. Thus, all of the above determines the relevance of the study.

Purpose of the study: to determine the level of development of individual motor qualities in children 5–6 years old.

Material and Methods of the research

The studies were conducted on the basis of a children's pre-school educational institution "Birch" in the city of Yagotin, Kiev region. They were attended by 52 pupils of 5–6 years old, of whom a group of girls of 5 years was formed, a group of children of 5 years and, accordingly, two groups of children of 6 years. All children who participated in the study were healthy and were supervised by medical staff of the preschool institution..

Such research methods were used as theoretical analysis and synthesis of scientific and methodological literature, pedagogical testing and methods of mathematical statistics. The level of development of the physical qualities of children 5–6 years old was assessed by performing the following exercises: bending the body forward from a sitting position; flexion of the foot; standing long jump; throwing a small ball at a distance; content of static balance and shuttle run 3x10 m.

Results of the research

The results of the level of development of motor skills of children 5-6 years old in the age aspect are presented in Table 1.

Considering the indicators of torso forward for children 5–6 years old in the age aspect, it should be noted that the data of girls and boys 6 years old is better than the results of children 5 years old. It is worth noting that the results of girls have the reliability of differences ($p < 0,01$), and the indicators of boys have no reliability of differences ($p > 0,05$).

Analyzing the results of exercise, flexion of the foot in the age aspect, it should be noted that the results in children 5 years

Table 1

Comparison of the level of development of the physical qualities of children 5–6 years age, $\bar{X} \pm m$

Age	n	Bending torso forward (cm)	Foot flexion (cm)	Standing long jump (cm)	Throwing a small ball at a distance (m)	Content of static balance (s)	Shuttle run 3x10 m (s)
Girls							
5 years	10	6,6±1,30	6,6±0,71	84,2±1,45	6,3±1,39	4,1±0,79	12,2±0,62
6 years	12	14,9±1,64	4,7±0,59	92,5±1,49	6,9±1,30	5,8±1,72	11,1±0,51
t st.		3,55	2,34	3,55	2,34	1,11	1,58
t cr.		2,09	2,09	2,09	2,09	2,09	2,09
p		<0,01	>0,05	<0,01	>0,05	>0,05	>0,05
Boys							
5 years	15	5,7±0,83	5,7±0,49	88,2±1,15	7,2±1,51	9,7±1,38	11,1±0,49
6 years	15	7,6±1,08	5,5±0,48	105,0±0,90	8,5±1,16	15,6±0,90	11,3±0,58
t st.		1,42	0,20	0,53	1,68	3,60	0,06
t cr.		2,05	2,05	2,05	2,05	2,05	2,05
p		>0,05	>0,05	>0,05	>0,05	<0,01	>0,05

of age are worse than the results of the same exercise in children 6 years old (the results of children do not have any significant differences ($p > 0,05$), and the indicators of girls, on the contrary, they are reliable ($p < 0,05$)).

Comparing the performance indicators of the standing long jump in children of senior preschool age, it should be noted that the results of girls and boys of 5 years old are worse than the results of six-year-old children (the results of children do not have significant differences ($p > 0,05$), and girls differ significantly ($p < 0,01$)).

When comparing the results of an exercise of throwing a small ball over a distance in children 5–6 years old, it is clear that the results of preschool children 6 years old are better than five-year-old children (the results of children have significance of differences ($p < 0,01$), and there are no differences in indicators of girls ($p > 0,05$)).

Analysis of the results of the exercise, the content of static balance in the age aspect showed that girls and boys of five years of age have worse results than children of 6 years. At the same time, in the results of girls, there is no certainty of differences ($p > 0,05$), and the indicators of the guys have a reliable character of differences ($p < 0,01$).

Analyzing the indicators of the 3x10 m shuttle run, it is worth noting that girls and boys of 5 years perform the exercise better than children of 6 years (the results of boys and girls do not have any differences ($p < 0,05$)).

Table 2 presents the indicators of the level of development of the physical qualities of children 5–6 years of age in the sexual aspect.

Comparison of indicators of torso forward in the sexual aspect showed that girls of 5–6 years old perform this exercise better than guys of the same age. At the same time, indicators of children of 5 years of age do not have any significant differences ($p > 0,05$), and data of six-year-old children are reliable

($p < 0,001$).

Comparing the indicators of foot flexion in children of the above age, it is worth noting that girls of 5 years perform this exercise worse than guys. It should be noted that in children of 6 years old, the indicators are better in girls. At the same time, the significance of differences between the indicators is absent ($p > 0,05$).

Comparing the indicators of the standing long jump in the sexual aspect, it should be noted that the results of children 5–6 years old are better than the results of girls of the same age. It should be noted that in children of 6 years of age there is no significant difference ($p > 0,05$), and the results of children of 5 years of age are reliable ($p < 0,001$).

Analyzing these exercises of throwing a small ball to a distance in the sexual aspect, we note that girls of 5–6 years old perform it much worse than guys. It should be noted that the indicators have significant differences ($p < 0,001$).

Analysis of the content of static equilibrium showed that girls of 5–6 years old have worse indicators than guys of this age. Note that the results of children 5–6 years old differ significantly ($p < 0,001$).

Comparison of the results of the 3x10 m shuttle race of children of preschool age in the sexual aspect showed that at the age of five children do this exercise better, and at the age of six it is girls. However, it should be noted that there is no significant difference in indicators ($p > 0,05$).

When comparing the indices of exercise, torso forward in children 5–6 years of age with normative estimates presented by T. A. Tarasova [9], it was found that the results correspond to the "average" level (3 points), with the exception of the data of 6-year-old girls, perform the exercise at the "high" level (5 points).

Comparing the results of flexion of the foot with the evaluation

Table 2

Comparison of the level of development of the physical qualities of children 5–6 years in the sexual aspect, $\bar{X} \pm m$

Age	n	Bending torso forward (cm)	Foot flexion (cm)	Standing long jump (cm)	Throwing a small ball at a distance (m)	Content of static balance (s)	Shuttle run 3x10 m (s)
5 years							
boys	10	6,6±1,30	6,6±0,71	84,2±1,45	6,3±1,40	4,1±0,80	12,2±0,62
girls	15	5,7±0,83	5,7±0,48	88,2±1,15	7,2±1,51	9,7±1,38	11,1±0,49
t st.		0,61	1,11	4,31	6,29	3,52	1,36
t cr.		2,08	2,08	2,08	2,08	2,08	2,08
p		>0,05	>0,05	<0,001	<0,001	<0,001	>0,05
6 years							
boys	12	14,9±1,64	4,7±0,59	92,5±1,48	6,9±1,83	5,8±1,72	11,1±0,51
girls	15	7,6±1,08	5,5±0,48	105,0±0,90	8,5±1,16	15,6±0,89	11,3±0,58
t st.		3,70	1,11	0,83	4,84	5,08	0,16
t cr.		2,10	2,10	2,10	2,10	2,10	2,10
p		<0,001	>0,05	>0,05	<0,001	<0,01	>0,05

criteria proposed by L. P. Sergienko [7], it was established that children of 5 years perform an exercise with "4" points, and six-year-old children with "5" points.

Comparing these exercises with a standing long jump with the norms presented by T. A. Tarasova [9], it was found that children aged 5–6 years perform the exercise at the "average" level ("3" points).

Comparison of the results of the control exercise of throwing a small ball over a distance with the corresponding norms showed that children 5–6 years old have an "average" level (3 points).

Comparing the indicators of static balance content with the norms presented by T. A. Tarasova [9], it was determined that children of 5 years old perform this exercise at the "average" level ("3" points). The following results are observed in six-year-old children: boys have "high" level ("5" points), girls have "medium" level ("3" points).

Comparison of indicators of shuttle running 3x10 m with the corresponding norms [2] in children 5–6 years old showed that children perform the exercise at the level "below average" ("2" point).

Thus, the results of the study showed that in the process of physical education with the studied contingent more attention should be paid to the development of coordination and speed-strength abilities.

Conclusions / Discussion

Analysis of the level of development of physical qualities of

children 5–6 years of age in the age aspect found that the results are better in children of 6 years. The exception is the 3x10 m shuttle race in 5-year-old boys, who have better results than 6-year-olds. It should be noted that the differences are mostly unreliable ($p > 0,05$).

Comparison of indicators of the level of development of physical qualities in the sexual aspect showed that in exercises the inclination of the body forward from the sitting position and flexion of the foot results are better for girls. Exercises long jump from a place, throwing a small ball at a distance, the content of static equilibrium and the shuttle run 3x10 m are better done by the guys. An exception is the shuttle run data of 3x10 m 6-year-old boys, who have worse results than girls. At the same time, the significance of differences is observed in terms of forward bending of the trunk, flexion of the foot and shuttle running 3x10 m in five-year-old children ($p < 0,001$). In children of 6 years old, the significance of differences is observed between the indices of exercises, flexion of the foot, a long jump from a place and a shuttle run of 3x10 m ($p < 0,01–0,001$).

Comparison of the data of physical qualities with the presented norms revealed that the indicators of children 5–6 years correspond to the "average" level (3 points).

The results of the conducted research allow to recommend to instructors on physical education of preschool institutions to spend more time on exercises directed on development of coordination and speed-power abilities.

Prospects for further research may be to determine the dynamics of the level of development of motor skills under the influence of innovative means of physical education.

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