

Regional Problems of Differentiated Physical Education of Preschool Children

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The article provides an analysis of scientific and methodological literature and pedagogical observations, which made it possible to assume that a rational organization and a reasonable methodology for conducting physical education and children's sports in the open air will create favorable opportunities for year-round classes with the bulk of children attending preschool educational institutions, which will allow to successfully combine the solution of health-improving, educational and educational tasks, to successfully complete the program on physical culture of children attending preschool educational institutions, taking into account regional climate factors especially in Central Asian region, which do not have specially equipped halls for conducting physical education classes.

Calculations of estimated gradations of the level of children's motor readiness are presented, with the aim of a differentiated approach to the methodology of their teaching motor actions based on a selective approach in the acquisition of educational groups in the system of preschool education.

Keywords: preschool age, regional factors, hyperthermia, physical inactivity, optimization, differentiation, physical development, motor fitness, sensitive age period, physical status, gradation

INTRODUCTION

Improving the quality of education is one of the most important problems not only for the Republic of Uzbekistan, but for the entire world community.

The solution to this problem is connected with the modernization of the content of education, innovative pedagogical technology in the organization of the educational process.

The analysis of available literature and pedagogical observations (7) allowed us to assume that a rational organization and a reasonable methodology for conducting physical education classes in the open air will create favorable opportunities for year-round classes with the majority of children attending preschool educational institutions in cities and towns especially in rural areas.

This will allow to successfully combine the solution of health-improving, educational and upbringing tasks, to successfully complete the program on physical culture for children attending preschool educational institutions, taking into account the regional climate factors of the Central Asian region, which do not have specially equipped halls for conducting physical education classes.

The specificity of the climatic conditions of the Central Asian region, which significantly affects the preservation of the health of the human population, is one of the most urgent problems of modern pedagogical science of physical education and children's sports. It is no coincidence that WHO constantly develops programs focused on protecting and strengthening health. Despite the increased role of the anthropogenic component in the complex influence of external conditions on the human body, the most important component remains the totality of natural climatic and geographical factors that determine the features of the development, functioning and adaptation of organs, body systems as a whole as a subject and object of this environment.

Climatic seasons of the year, distinguished by climatic features - non-specific environmental factors that affect the human body and differ in their intensity as high ambient temperature, atmospheric air pressure, relative air humidity, etc.

The most significant climatic factor in terms of ecological and physiological impact on the human body is air temperature. When the ambient temperature rises, protective-adaptive reactions occur.

Prolonged exposure of the body to high temperatures inherent in the region of residence of the studied contingent reduces the efficiency of heat conduction of the environment, reducing convection and evaporation from the body surface, which leads to maximum sweating. With profuse sweating, liquid and mineral salts are lost, which leads to a violation of metabolic processes in cells, partially compensated by increasing the intensity of metabolism, which requires more oxygen. This leads to an increase in breathing and an increase in the load on the cardiovascular system, and the additional heat released as a result can lead to overheating of the body – hyperthermia.

Monitoring studies of the vital activity of the organism revealed a hypothermic factor of a negative impact on the body of children and the expediency of bringing physical culture and sports events, taking into account the influence of regional climatic features of Fergana region, which belongs to a sharply continental type with the manifestation of arid signs.

According to the data of long-term indicators of the regional meteorological service for the period of experimental research, characteristic average annual values of the main climatic parameters for different climatic seasons were revealed. An analysis of the temperature conditions in the Fergana region revealed sharp fluctuations in temperature in January and May. The highest temperature regimes occur in mid-May and all summer until September. In other climatic season of the calendar year, the conditions are favorable for outdoor physical education classes and require well-maintained sports facilities.

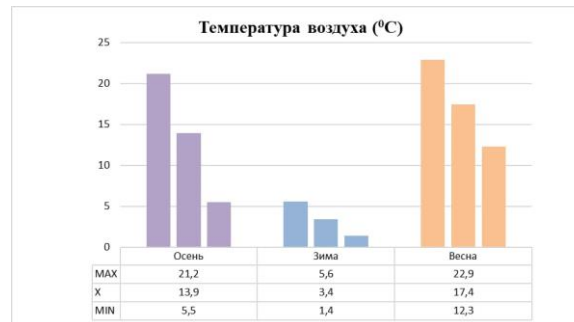
An analysis of the temperature conditions of the Fergana region revealed that the highest temperature regimes occur in mid-May and all summer until September.

In the rest of the climatic seasons of the calendar year, the conditions are favorable for outdoor physical education classes and require well-equipped sports facilities.(8)

Thermal tolerance when performing physical exercises in conditions when the air temperature exceeds 30 ° C, preschool children practically do not tolerate physical exercises performed even at a relatively low intensity of 40-50% of the maximum aerobic capacity.

Air Degree

FIGURE 1
AVERAGE TEMPERATURE OF AIR IN FERGANA DURING 2019-2020



The data obtained allowed us to conclude that the difference between the corresponding maximum and minimum values of the main parameters of various climatic seasons during the study period remains approximately constant on average, characterized by only minor changes in values.

In this way:

1. An analysis of observations of weather conditions in the territory of the Fergana region in various climatic seasons of the calendar year has reliably allowed us to assert the existence of a particular climatic season of the year of specific climatic conditions inherent in it, the main parameters of which are characterized by sufficient stability and constancy of manifestation.
2. A certain stability of the parameters of climatic seasons under the conditions of long-term observations creates positive prerequisites for solving the tasks set.
3. The stability of the weather conditions of different climatic seasons makes it possible to reliably predict and take into account their changes when planning the process of physical education of children in a senior preschool institution.
4. The predicted stability of climatic conditions provides the possibility of implementing in practice in the future new methodological approaches to planning the process of physical education of children of senior preschool age.

Under the conditions of the hypo dynamic factor, the need for children to move is a natural basic need and depends on genetic and social factors. What a group of authors pointed out in their studies (3,4,6,10) that great need for motor activity is observed in people with a strong nervous system and people of an athletic build, who have a greater predisposition to mastering motor skills, skills and qualities, motor activity however, in contrast to this factor, children with low motor activity need additional external stimulation in the form of encouragement, which, unfortunately, disappears with age.

This gives grounds for physical education teachers to take into account the factor of the sensitive age period for the development of children's motor skills.

It should be borne in mind that the sensitive age period is an increased plasticity, when the structure and function demonstrate their ability to modify variability in accordance with the specifics of external conditions.

Monitoring of literary sources on this issue revealed that in the life of children at certain stages of life, their time intervals of motor abilities were determined, which were called sensitive periods, based on physiological facts.

In the most favorable sensitive periods of life in children, they allow them to achieve more pronounced progress in improving some motor abilities. However, the timing of the onset of sensitive periods in relation to certain motor abilities remains the subject of heated debate to this day.

Each component of motor fitness can be characterized by various indicators that can demonstrate chronological changes.

In general, sensitive periods are determined by growth, maturation and natural changes in the development of the movement system.

In his research, Professor Guzhalovsky A.A. experimentally revealed that the most favorable period for the development of the motor quality of flexibility is the preschool age, when the high elasticity of tendons, ligaments and joints is a beneficial factor that positively affects this process. The most influential factors affecting sensitivity are increased body length and especially muscle mass, increased heart volume, total blood volume and higher hemoglobin concentration.(2)

Studying the effectiveness of training influences in the stimulated development of the physical potential Goncharova O.V. (1) in the textbook “Development of physical abilities in young athletes” expresses an opinion about the presence of age and individual characteristics in the development of children.

The diversity of the identified relationships confirms that the adaptive capabilities of the developing organism of children are due to the interaction of a complex set of functional systems with constantly changing conditions of the external and internal environment, which leads to the heterochronous development of the studied systems, depending on the adaptive capabilities at a certain stage of ontogenesis. The greatest sensitivity of age-related sensitivity to the development of motor abilities in children with the identification of new sensitive periods according to Lyakh V.I. (5), in all age periods, the highest rates of motor sensitivity are observed in preschoolers with higher mobility of excitation and inhibition at the same time, in comparison with “inert” ones.

The manifestation of speed-strength abilities in children is associated with the manifestation of ability and confirms the heterochrony and variability of age-related development. This gives grounds to note that there are not only age-related, but actually individual prerequisites for the formation of differences in abilities.

During the period of age sensitivity, external influences are based on mature functional systems, which include natural inclinations and reflect readiness for external influences.

An analysis of literary sources has established that preschool age is the most favorable period for the purposeful development of physical abilities in children. Experimental studies conducted on the contingent of the older age group of preschool institutions to identify the levels of motor fitness during the annual cycle of preparation for training in the system of preschool education on the basis of a battery of normative indicators borrowed from state standards for physical culture showed the identity of the dynamics of motor abilities when compared with children from other regions.

It was found that boys overcame a distance of 30 m in 6.6 ± 0.6 seconds on average, and by the end of the child’s stay in a preschool institution, the speed capabilities of children increased significantly to 6.4 ± 0.2 seconds (3.2%).

In the standing long jump, the results were 105.1 ± 26.7 cm. The complex of developed pedagogical measures made it possible to significantly improve the speed-strength indicators at the stage of their entry into the school system of education.

When assessing the strength abilities of children according to test tasks such as pulling up on the crossbar in the lying position, bending and extending the arms in the lying position, the results on average corresponded to 11.7 ± 2.3 times and 6.9 ± 1.9 times, while the positive dynamics of the increase in strength abilities was traced throughout the entire study period and amounted to an increase of 22.1% and 18.9%, respectively.

In throwing a tennis ball, as an indicator of the speed-strength capabilities of children, when comparing the results obtained with the data of literary sources, no significant differences were found and amounted to 14.1 ± 4.0 m in boys. It should be noted that during the period of age sensitivity, external influences are based on mature functional systems, which include natural inclinations and reflect readiness for external influences. It seems more correct to talk about favorable periods for the development of motor abilities, on the basis of existing inclinations, rather than age sensitivity.

The conducted pedagogical experiment aimed at monitoring the dynamics of changes in motor qualities in the annual cycle of teaching preschoolers made it possible to conclude that it is necessary:

- taking into account the individual characteristics of the physical development and physical fitness of children.

- optimal dosing of physical activity, taking into account the morpho-functional characteristics of a growing organism;
- regular implementation of medical and pedagogical control

Of particular relevance in the Republic of Uzbekistan is the education system for preschool children at the initial stage of their physical development.

Substantiation and introduction into practice of innovative pedagogical technologies aimed at developing evaluative gradations of the level of physical fitness of children aged 6-7 and, on this basis, differentiatedly carry out the pedagogical process of physical education in the system of preschool education.

Analysis of the results of pedagogical testing of physical fitness of children of senior school age, conducted by a group of researchers (Lyakh V.I., Khankeldiev Sh.Kh., Uraimov S.R.) made it possible to calculate the estimated gradations of the level of motor fitness of children, with the aim of a differentiated approach to teaching methods of the studied children to motor actions on this basis of a selective approach in the acquisition of educational groups in the system of preschool education.

The conducted experimental studies aimed at identifying the motor abilities of older preschool children, assessed by the average sum of all the studied parameters of test tasks, revealed that the high level of physical fitness of children 6-7 years old was evenly distributed over the years and ranged from 21.8% to 24.7%, with the largest percentage of children with a high level of physical fitness falls on the age of 7.

The average level of physical fitness of children aged 6 - 7 years old, according to the sum of average indicators, was evenly progressively distributed by age and varied from 59.7% to 65.8%. It should be noted that a significant increase in the indicators of the average level of physical fitness in children at the stage of preparation for training in the school education system was revealed. The analysis of experimental data on physical fitness revealed that in 5-year-old children with a low level of physical abilities, it ranged from 11.8% to 15.6% with a tendency to a significant decrease in performance indicators as age characteristics increase.

TABLE 1
GRADATION LEVEL OF PHYSICAL TRAINING OF PRESCHOOL CHILDREN

Age	Number of children/person	Tests on physical training																		
		Running 30m (sec)	Long jumping (cm)	Round running 4*10 (sec)	Push-ups (number)	Bending down (cm)	Running 300m (min)	Average results of testing %	B	C	H	B	C	H						
The level of physical training																				
5	18	13	64	32	32	57	11	32	43	19	35	59	6	12	62	26	24,7	59,7	15,6	
6	16	9	74	17	19	70	11	29	59	12	36	47	17	24	69	17	21,8	64,6	13,6	
Difference between 5-6 ages %		29,8	6,8	5,6	20,9	8,6	8,4	9,4	3,4	8,4	11,2	8,6	10,6	31,5	14,5	14,3	11,8	7,6	12,9	
7	12	14	78	8	21	7	7	23	64	13	46	33	21	23	68	9	8	22,4	65,8	11,8
Difference between 6-7 ages %		35,8	5,2	52,2	9,6	2,8	36,4	9,4	7,2	7,7	11,8	29,8	19,1	4,2	1,5	22,3	42,9	2,7	1,9	13,3
Difference between 7-9 ages %		7,2	11,5	55,6	12,5	11,2	51,7	28,2	11,0	15,4	30,5	23,3	9,6	34,3	13,3	33,4	33,4	9,4	9,3	24,4

Monitoring the results of pedagogical testing of motor qualities revealed that the bulk of children of senior school age, according to the sum of the average data of the studied parameters of physical fitness, have an average level of development with an unreliable multidirectional increase in motor capabilities. The annual dynamics of a gradual significant decrease by 7.6% of indicators with a low level of physical fitness was revealed, which indicates a significant improvement in motor abilities in preschool children.

It was revealed that the speed abilities of children 6-7 years old in 70% of cases have an average level of physical fitness, 17% of children have a low level and only 12% showed a high level of speed abilities. Similar results can be observed in the analysis of strength capabilities in children, where this factor, estimated by the indicators in the test of flexion and extension of the arms in a lying position (strength training) in boys of 7 years old, showed high level results of 36%, and a comparative analysis of the obtained data on motor strength training between 6 and 7 years old children, the difference was 11.2%.

In general, the analysis of the results of checking the motor fitness of children shows that the development of physical qualities in preschoolers is at an average and low level of their development, and only a small part of children ranging from 10% to 15% have a high level of motor fitness.

A comparative analysis of the results obtained for individual test tasks suggests that the lowest motor abilities were manifested in speed, in speed-strength motor qualities, and especially in general endurance, where over 90% of children showed an average and low level of physical abilities in all age groups. It should be stated that the most favorable, in comparison with the above-mentioned motor qualities, are indicators in the strength training of this age group of children.

TABLE 2
GRADATION LEVEL OF PHYSICAL TRAINING OF SENIOR PRESCHOOL AGED CHILDREN %

Age		Number of children/person		Tests on physical training																		
				Running 30m (sec)	Long jumping (cm)	Round running 4*10 (sec)	Push-ups (number)	Bending down (cm)	Running 300m (min)	Average results of testing %	B	C	H	B	C	H	B	C	H			
				The level of physical training																		
5	18	13	69	18	24	64	12	32	57	11	32	43	19	35	59	6	12	62	26	24,7	59,7	15,6
6	16	9	74	17	19	70	11	29	59	12	36	47	17	24	69	7	14	69	17	21,8	64,6	13,6
The difference between 5-6 ages %		29,8	6,8	5,6	20,9	8,6	8,4	9,4	3,4	8,4	11,2	8,6	10,6	31,5	14,5	14,3	14,3	10,2	14,7	11,8	7,6	12,9
7	12	14	78	8	21	72	7	23	64	13	46	33	21	23	68	9	8	79	13	22,4	65,8	11,8
The difference between 6-7 ages %		35,8	5,2	52,2	9,6	2,8	36,4	9,4	7,2,	7,7	11,8	29,8	19,1	4,2	1,5	22,3	42,9	12,7	23,7	2,7	1,9	13,3
The difference between 7-9 ages %		7,2	11,5	55,6	12,5	11,2	51,7	28,2	11,0	15,4	30,5	23,3	9,6	34,3	13,3	33,4	33,4	11,5	50	9,4	9,3	24,4

Summing up the results of the conducted studies of the physical status of children of senior preschool age, an uneven increase in physical fitness indicators in children of 6-7 years old was revealed.

Large increases in performance in the studied test tasks related to the manifestation of speed-strength abilities were most clearly manifested in the age period from 6 to 7 years, which, in our opinion, is associated with a rapid increase in coordination abilities in children in the prepubertal age period of their development.

Of scientific interest was the study of the dynamics of changes in individual indicators of physical fitness of children living in a region with a high ambient temperature.

An unreliable loss of body weight and a decrease in appetite were revealed, which is typical for the population living in the southern regions of the country with a high ambient temperature, which is associated with a decrease in energy consumption during physical exertion in the summer season.

The decrease in body weight in this case did not occur with an increase in body length, and therefore it cannot be explained by the activation of growth processes in this period.

Therefore, the increase in body weight is associated with an imbalance caused by the release of energy and its expenditure on general life processes and the ability of muscles to function.

Indicators of the physical condition of children change significantly during the year, when there is an average improvement in the absolute values of the results of children 6-7 years old in the period from September to January ($P < 0.01$).

The monitoring analysis of the results shows that the greatest increase in the physical condition of children of the older age group of preschool institutions from September to January and from January to May, with regular physical activity and relatively moderate ambient temperature, was the most optimal period of 6-7 ages.

In regions with a high ambient temperature, a lack of physical activity in the summer months was revealed and leads to a decrease in the growth of children's physical fitness.

This puts on the agenda the issue of the need to activate and rationalize the mode of motor training in conditions of hyperthermia in children aged 6-7 ages at the stage of preparation for training in the school education system.

CONCLUSION

1. The vital activity of the organism is influenced by the climatic factors of the region where children live and has not yet been fully studied, and has revealed the expediency of providing data on the regional climatic features of the Fergana region, which belongs to a sharply continental type with the manifestation of arid signs. Thermal tolerance when performing physical exercises in conditions when the air temperature exceeds 30°C , children of older preschool age practically do not tolerate physical exercises performed even at a relatively low intensity of 40-50% of the maximum aerobic capacity.
2. The monitoring analysis of the results of the pedagogical testing of the motor potential of senior preschool children revealed that the majority of children assessed by the sum of the average data of the studied parameters of physical fitness have an average level of development with an unreliable multidirectional increase in motor capabilities over the years of their education in the system of preschool institutions. The dynamics of a gradual significant decrease by 7.6% of indicators with a low level of physical fitness was revealed, which indicates a significant improvement in the motor abilities of preschool children at the stage of preparing them for training in the school education system.
3. The lack of physical activity in children in the summer months was revealed, which is associated with a limitation of physical activity, marked by the influence of external hyperthermia and leads to a decrease in the growth of their physical fitness, contributing to the activation and rationalization of the mode of physical activity of children 6-7 years old at the stage of preparation for training in school education system.

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