The European Journal of Education and Applied Psychology 2023, No 4
ISSN 2310-5704

PREMIER Publishing
ppublishing.org

Section 8. Secondary school education

DOI:10.29013/EJEAP-23-4-142-146

VARIABILITY OF INDICATORS OF PHYSICAL FITNESS OF ADOLESCENT SCHOOLCHILDREN LIVING IN URBAN AND RURAL AREAS

Yusupova, M.A. [1]

[1] Teacher of the Department of theory and methods of gymnastics Uzbek State University of Physical Culture and Sports, Uzbekistan

Cite: *Yusupova, M.A. (2023). Variability of indicators of physical fitness of adolescent schoolchildren living in urban and rural areas. European Journal of Education and Applied Psychology 2023, No 4.* https://doi.org/10.29013/EJEAP-23-4-142-146

Abstract

Morphological research methods, as well as pedagogical testing methods, have been applied to conduct a comparative assessment of the variability of indicators of physical development and physical fitness of adolescent schoolchildren living in urban and rural areas. Differences in indicators of physical development and the level of physical fitness between schoolchildren living in rural and urban areas have been revealed. It has been established that living conditions, features of motor activity, the performance of many types of activities in conditions of hypokinesia, the nature of physical exertion affect not only body parameters, but also the level of physical fitness of schoolchildren.

Keywords: *hysical fitness of adolescent school children, hypokinesia, historically established living conditions, global recommendations on physical activity*

Introduction

The World Health Organization (WHO) has identified the prevention of obesity in children and adolescents as one of its key priorities in the 21st century; motor behavior plays a key role in this. In this regard, WHO has presented global recommendations on physical activity, sedentary lifestyle and behavior of children and adolescents. Initial data collected from 25 countries show that only 15% of preschoolers follow all three rules of daily movement. This exposes the remaining 85% who do not comply with all three recommendations to an increased risk of deteriorating health and developmental outcomes and potentially lower human capital development. For these reasons, it is important to collect international surveillance data in a timely manner using new developments of WHO global recommendations. This will allow us to obtain the first such international data on the prevention of obesity in children and adolescents and ensure that they reach their development potential. According to

V.A. Puzyrinin, S.V. Kaznacheeva, 2010 it is this approach in the educational process that determines the orientation of the entire system, which is potentially embedded in the subject "Physical culture". According to the author, the successful development of society can be carried out under the condition of fundamental education, democratization and humanization of all its foundations [8]. It is no secret that the formulation of physical education in educational institutions needs to be revised. This is confirmed by the data of a number of studies indicating an unsatisfactory state of health and physical condition of a significant part of modern schoolchildren.

In order to increase the effectiveness of physical fitness indicators in modern schoolchildren of Uzbekistan, the intergroup variability of morphological characteristics of the physique was studied, and on the basis of functional indicators, an assessment of the health status of schoolchildren aged 13, 14, 15.16 years was carried out. Low indicators were found in the majority of schoolchildren of the vital index associated with the activity of the respiratory system, according to the Robertson index (IR) reflecting the activity of the informative cardiovascular system, whose indicators were characterized by low or below average values. The deterioration in the state of health and low physical fitness of adolescent schoolchildren is associated with the following factors: unfavorable environmental conditions, especially in the Khorezm and Kashkadarya regions), irrational organization of the educational process in school institutions, low level of physical activity, since even two lessons per week of physical education lessons are insufficient for physical activity, limiting the possibility of conducting additional classes in schools to promote health and improve physical fitness and prevent colds. In this regard, we have developed an experimental program that outlines scientific and methodological support for the organization of health improvement, hardening, and improvement of physical fitness of adolescent schoolchildren living in various regions of the republic. The development of physical culture and sports among children and adolescents is a priority in the Republic of Uzbekistan and the urgent problem is not developing, but improving physical culture. This determines the need to develop modern information technologies based on the study of the health status of the younger generation. To improve health indicators, as well as increase the level of physical fitness, we have developed an experimental program of breathing exercises used during morning exercise every morning, as well as to develop the level of physical fitness in additional physical education classes. In solving this problem, an important role is played by the creation of a system for monitoring the health of children and adolescents in order to make timely decisions on preventive and wellness measures.

The degree of study of the problem

The analysis of scientific and methodological literature has revealed that constant dynamic observations — monitoring of the physical condition of the population is necessary for the prevention and promotion of health by means of physical culture, require methodological, organizational and information support. Considering that in pedagogical practice puberty is characterized psychologically by a change in the behavior of schoolchildren aged 14–16, it is of interest to assess somatic health and the formation of improvement of physical qualities — speed, strength, endurance, dexterity, coordination abilities, speed and strength qualities [3; 8; 7]. This proposed study is innovative, as it will allow updating the age and sex standards characteristic of schoolchildren living in various regions of Uzbekistan. To date, no uniform periodization has been established in the development of physical fitness, somatic, and functional functions for puberty schoolchildren. Until now, health is considered as a kind of stable state, when all morpho-functional systems clearly perform all functions in strict accordance with certain patterns, which allows them to be characterized by methods of mathematical statistics [4; 5; 6; 8; 9]. Thus, it is necessary to substantiate the criteria of general physical fitness (end-to-end tests) and control of current and long-term adaptation to training loads in adolescent schoolchildren living in various regional conditions.

The purpose of the study

The dynamics of changes in the indicators of physical fitness of schoolchildren aged

15–16 years under the influence of the effects of a training orientation living in urban and rural areas.

Methods and organization of research

46 schoolchildren aged 15–16 years old, living in urban and rural conditions, participated in this study. The indicators of physical fitness of schoolchildren studying at school No. 23 in Karshi and 25 schoolchildren living in rural areas — the village of Nekuz in Kashkadarya region (25 schoolchildren) were taken as the compared groups. To improve health indicators, as well as increase the level of physical fitness, we have developed an experimental program of breathing exercises used during morning exercise every morning, as well as additional physical education classes aimed at developing general physical qualities to increase the level of physical fitness. The following tests were used as tests evaluating physical qualities: the speed qualities were evaluated according to the test — running at 30 m; strength qualities — according to the tests, flexion and extension of the arms in the prone position and pulling up on the crossbar; Speed and strength qualities — long jump from a place (cm), triple jump; dexterity — rope climbing; The results were processed by methods of mathematical statistics.

Research results and discussion

At the first stage of the study, we identified the intergroup variability of morphological characteristics of urban schoolchildren aged 15–16 in Karshi and schoolchildren living in the village of Nekuz in Kashkadarya region. Differences in indicators of total body size have been established. If urban schoolchildren have a body length of 171.9±6.7 cm, body weight — 58.9±9.2 kg, chest circumference — 86.9±9.2 cm, then schoolchildren in the village of Nekuz have a body length of 170.5±8.16 cm, weight –56.9±9.05, and chest circumference –82.1±6.05cm, that is, according to physical development, there is a slight lag in body length by 1.4 cm, body weight is 2 kg, chest circumference is lower by 4.8 cm, that is, less than that of urban schoolchildren. It should be pointed out that about 5% of urban schoolchildren are engaged in sports sections, but for the rest of the students, physical activity is limited to physical education classes in accordance with the school curriculum.

Table 1. *Dynamics of changes in physical fitness of schoolchildren living in urban and rural areas (n=46)*

Tests and unit measurements	The initial stage		The validity of the differences			The final Stage		The validity of the differences		
	Karshi city school No. 23 n=21	village of Nukus school 44 n=25	Difference %	t	p	Karshi city	Village Nukus	Difference %	t	p
Triple jump (m)	7.09±0.26	6,98± 0,21	1,6	1.4	>0.05	6,98± 0,27	7.46± 0,36	6,9	4.53	<0.05
Long jump from a place	160.0±2.2	165,0± 2.2	3,1	3.82	<0.05	168,0± 2.4	172,0± 2.2	2,4	5.21	<0.05
Flexion and extension of the arms in the prone position	38,2±0,80	39.0± 0.9	2,1	2.82	<0.05	40,9± 0,90	42.4± 0,8	3.7	5.28	<0.05
Rope climbing	12,1±0,30	9.7± 0,20	19,8	2.24	<0.05	11,1± 0,31	10.0± 0,30	9,9	4.82	<0.05
Pull-up on the crossbar	17,50±0,70	17,80±0,7	1,7	1.7	>0.05	19.2± 0,70	19,3± 0,5	0.5	0.49	>0.05
Running 30m from a place	5.12±0,04	5,10±0,04	0,4	0.4	>0.05	4,93± 0,03	4,75± 0,04	3,7	5.27	<0.05

Intergroup pairwise differences were recorded for the compared urban and rural schoolchildren and in terms of physical fitness. During the experiment, rural schoolchildren from the village of Nekuz demonstrated higher results in terms of the level of development of physical qualities. Thus, statistically significant differences were found in the triple jump test. The increase in this test among urban schoolchildren was –1.6%, and among schoolchildren with.Non–university — 6.9%.(Table 1). "Long jump from a place" demonstrating the level of development of speed and strength qualities, rural schoolchildren showed a higher result compared to urban schoolchildren. The increase in the result on this test was –165.0± 2.2 cm for urban children, and the jump value was — 172.0± 2.2 cm for rural schoolchildren. In the test, the increase in the development of strength qualities among schoolchildren in Karshi was –2.1%, and among rural schoolchildren it reached — 3.7%, that is, the indicator is higher for strength capabilities among schoolchildren living in rural areas, although slightly. The quality of dexterity is demonstrated in the "rope climbing" test. For the compared groups, the values of this indicator turned out to be almost the same for schoolchildren living in Karshi, their result was — 10.0 ± 0.30 s, and for schoolchildren of the village of Nekuz, "rope climbing" the result was — 9.7 ± 0.20 s, that is, the difference is insignificant. In the "Pull-up on the crossbar" test, the difference in the value of strength qualities at the initial stage was 1.7% more than in urban schoolchildren. However, at the final stage of the experiment, the difference between urban and rural schoolchildren was 0.5% in favor of rural schoolchildren. The speed test was evaluated based on the results of running at 30 m. For this test, the result of the increase was higher in rural schoolchildren and amounted to –3.7%. Thus, some disproportion between the level of physical development and physical fitness of the compared groups of schoolchildren was revealed. Thus, according to the level of physical development, urban schoolchildren are characterized by increased body weight, higher height, and greater chest circumference compared to rural schoolchildren. However, according to the level of physical fitness in rural schoolchildren, the maximum number of statistically significant differences in the level of development of a number of physical qualities has been established, although according to some test indicators, minor differences were found between the compared groups — in the "pull-up on the crossbar" test.

Conclusion

It can be assumed that the established differences in the values of tests recorded for urban schoolchildren are related to the amount of time spent on work performed under conditions of hypokinesia, that is, with a low level of physical activity (working with computers, possibly the influence of increased calorie intake of food), and the level of physical activity is limited only by physical education classes. In rural areas, the lack of urban transport, it is this category of schoolchildren that is characterized by the maximum amount of time allocated to perform various types of physical activity, as well as special types of work typical of rural areas. Thus, historically established living conditions, peculiarities of motor activity, performing many types of activities in conditions of hypokinesia, the nature of physical exertion affect not only body parameters, but also the level of physical fitness of schoolchildren.

References

Decree of the President of the Republic of Uzbekistan dated January 24, 2020 "On measures for further improvement and popularization of physical culture and sports".

Ageevets V. U., Nikitin A. A., Makarov G. G. Folk games and national sports in the perspective of physical recreation of the population.St. Petersburg: Petrovsky Academy of Sciences and Arts. 2012.-20 s.

Alekseenko T. I. Age-related indicators of the functional state of the cardiorespiratory system of modern adolescents //. Theory and practice of physical culture education // No. 2, 2007. February. — P. 64–66.

Antsiferova O. A. The functional state of the respiratory system in children of secondary school age in the conditions of the European North of Russia: Candidate of Medical Sciences. Sciences /O. A. Antsiferova. Arkhangelsk, 1999. — 18 p.
Arshavsky I. A. Physiological mechanisms and patterns of individual development. M., Nauka, 1982, — 270 p.
Balsevich V. K. Ontokinesiology of man — M://Theory and practice of physical culture. 2000. — 275 p.
Baranov A. A. Physical development of children and adolescents of the Russian Federation: collection of materials. VI / Edited by A.A. Baranov, V.R. Kuchma. — M.: Pediatrician, 2013. — 192 p.
Puzynina V. A., Kaznacheeva S. V. Valeological approach in the management of the system of physical education of students of higher educational institutions. //Theory and practice of physical culture, 2010. — № 2. — P. 42–44.
Estrekova S. G. — Age-related features of the function of external respiration in school-age children of Kabardino-Balkaria. — M., 2001. — 187 p.

submitted 12.12.2023;
accepted for publication 22.12.2023;
published 28.12.2023

Contact: yusupovama@mail.ru