

Physical Development of Rural and Urban School Children and its Comparative Characteristics

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Abstract: The article deals with the importance of the physical development of rural and urban schoolchildren and its comparative characteristics.

Keywords: physical development, chest circumference, rural school, urban school, anthropometric parameters, weight of the body, standards, somatometric parameters.

Introduction

It is known that there are more than 10 thousand general secondary schools in our republic of Uzbekistan where more than 6 million students are trained. Particularly, more than 800,000 boys and girls study in 1200 schools in our Republic. More than 70% of the population lives in rural areas, and the majority of them are young people (R.U, Sog'lom turmush tarzi asoslari, 2005).

According to the UN Food and Agriculture Organization and the World Health Organization, more than 840 million in the world, one of the eight people said that one of them is not being eaten, and more than 30% of the world's population suffer from malnutrition, lack of essential micronutrients and vitamins. For these reasons, over 160 million children suffer from deficiency in physical and intellectual development (Karimov, 2014).

The intensity of metabolism in body of students and the intensity of the growth and development differ from adults organism. Under the influence of various external factors, the physical development of children and adolescents is based on the body's growth and development concepts. The level of physical development of the participants is closely linked to their heredity, resistance to external influences, and other factors. Adolescence stage is one of the most crucial period in human life (M.S, 1990) (O.A, 2006) (Christoffel K.K., 1998).

Usually, physical development implies the potential in quality and life expectancy for

the body. Physical development is a genetically determined pattern of ontogenesis. At the same time, as a phenotypic parameter – reflects the influence of exogenous factors (R.U, 2005). Physical development is a complex concept that reflects the anthropometric indices in the coefficients of somatometry, - old functional status data and the functional activity (O.A, 2006).

The term "physical development", on the one hand, refers to the process of formation and maturation of the child's body, on the other – the degree of maturation at each given period of time, i.e. has at least two meanings. Based on this, the physical development is understood as a set of morphological, functional properties and qualities, as well as the level of biological development (biological age) of the body, characterizing the process of maturation of the child at a certain stage of life.

Therefore, studying their physical development is one of the urgent tasks for physiology and medicine.

The main objective of our work is to study the physical development indicators of rural and urban school children (length of height, body mass and heart circumference) and their comparison with each other and existing standards.

The survey was conducted on 156 children aged 12-15, boys and girls studying at school №15 school in Karshi city and at Nishan district school №11.

Their physical development was studied using anthropometric methods (R.T., 1996). The results were compared to the existing standards (R.T., O'zbekiston maktab yoshidagi bolalar va o'smirlarning gavda kattaligini aniqlash ko'rsatkichlari, organizmni faoliyat holati va biologik rivojlanish darajasi standartlari, 1999).

The lifestyle of rural and urban schoolchildren differs from each other in different ways. Particularly living conditions, permanent residence, school conditions, conditions created for study, physical and mental health, physical activity, period of sexual orientation disability, parents and other family members' changing work places, regular contact with sports, the conditions created for children in the family and at school, attendance the school, the psychological and other factors affecting different levels favors are observed.

In addition, the economic and social capacities of families in rural and urban settings, the daily consumption basket and variety of products, the use of modern information and communication tools, sports equipment for sports and physical exercises in school, develop, mental and physical abilities.

Taking into account the above points, we have tried to compare the somatometric indicators of rural and urban school children. The average characteristic of the results is given in the table below.

Comparative characteristic antropometric indicators of rural and urban schoolchildren

Parameters	Residence	12 years	13 years	14 years	15 years
Boys					
Length of body, cm	Rural	142,0±3,7	150,0±1,2	155,2±3,9	163,7±2,7
	Urban	147,7±2,4	154,7±1,0	160,1±1,1	160,8±1,4
	Difference +/-	5,7	4,7	4,9	2,9
Weight of body, kg	Rural	39,6±0,8	40,2±1,1	43,8±1,3	53,6±1,2
	Urban	42,6±2,2	44,8±0,8	50,1±1,1	50,3±1,3
	Difference +/-	3,0	4,6	6,3	3,3
Surface of body area S, m²	Rural	1,216±0,04	1,303±0,02	1,391±0,04	1,573±0,03
	Urban	1,303±0,04	1,395±0,01	1,501±0,02	1,511±0,02
	Difference +/-	0,08	0,09	0,11	0,06
Chest circumferencecm	Rural	67,6±2,0	68,8±1,1	73,5±1,3	77,2±1,2
	Urban	73,6±1,8	72,8±0,6	77,7±0,9	75,7±1,1
	Difference +/-	6,0	4,0	4,2	1,5
Girls					
Length of body, cm	Rural	159,0±0,1	155,5±0,7	157,6±0,9	150,6±4,1
	Urban	152,4±1,7	156,0±0,8	157,0±1,2	160,2±1,7
	Difference +/-	6,6	0,5	0,6	9,6
Weight of body, kg	Rural	55,5±7,5	44,6±1,0	44,9±1,0	46,8±0,8
	Urban	46,0±2,1	47,6±0,8	49,9±1,1	53,0±1,3
	Difference +/-	9,5	3,0	5,0	6,2
Surface of body area S, m²	Rural	1,845±0,07	1,402±0,01	1,426±0,01	1,374±0,04
	Urban	1,384±0,03	1,436±0,01	1,470±0,01	1,532±0,02
	Difference +/-	0,4	0,03	0,04	0,1
Chest	Rural	82,0±2,0	75,5±0,9	81,3±1,0	82,4±1,1

circumference	Urban	71,7±1,1	77,3±0,7	79,4±1,0	80,8±1,5
cm	Difference +/-	10,3	1,8	1,9	1,6

As can be seen from the table, there are significant differences between the somatometric markers of the rural and urban school – the length of height, the body mass, the body surface, and the circle of the cranial heart. In particular, there is not a significant difference between the 12-year-olds and 14-15-year-old rural and urban schoolchildren.

There is a significant difference between 13 year old boys in length height. For instance, the average age of the rural population of this age school was 150,0±1,2 cm, while the urban school children had 154,7±1,0 cm, which is 4,7 cm more than in urban areas R (P<0,02).

There is no difference in body mass between 12 and 15 years, and there is a statistically significant difference in age 13-14 including. The average body weight of the 13-year-old rural schoolchildren is average 40,2±1,1 kg, and the average age at age 14 is 43,8±1,3 kg, meanwhile, urban average 4,6 and 6 respectively, less than 3 kg (P<0,01).

There is no difference between these indicators of the rural and urban schoolchildren on the surface of the body.

Similar to the length of the palate circle, however, there is a difference in the counts of 13-year-olds, which means that roundabout circle of rural schoolchildren is less than average 4,0 cm above city schoolchildren. Also, there is slight difference in the indicators of 12 and 14 year olds, and in the age of 15 there is not a significant difference.

Rural and urban schools can also be traced to the length of height, female body weight, body surface, and the circumference of chest . In particular, the difference in length of height of girls aged 12 and 15 years of age can be adjusted individually. Thus, the length of height of girls of the 13-year rural school is 6,6 cm in comparison with the urban population. It's possible to say that 15-year-old girls are 9,6 cm lower. There are no significant differences in these indicators of girls aged 13-14.

According to body mass index, it can be said that there is significant difference in 12-year-old rural and urban students, with a significant difference in the 13-years-olds, especially the 14-15-year-olds. In particular, the body mass of 13-year-old girls is 3,0 kg less than in urban areas and 5,0 and 6,2 kg respectively in the 14-15 age group. It's also possible to record lower body surface rates as 0,1-0,4 m² less in urban girls than in urban areas.

On the indicators of rural chest circumference only 12 years old school girls had a difference of 10.3 cm less than those in the city, while 13-15 years old did not have a significant difference.

From the above mentioned sources, some of the indicators of rural schoolchildren are less noticeable than that of city schoolchildren, and some of them are almost identical. Such a situation can be explained by the influence of living conditions, nutrition, economic and social opportunities of families, a slight increase in participation in sports and other factors.

Conclusions

1. The somatometric parameters of the schoolchildren of the rural school do not have the standards.
2. Somatometric parameters of 12-year-old girls who are studying rural school have been found to be 10-20% higher than standard ones.
3. Somatometric parameters of children aged 12-13 in urban schools have a slightly higher than the standard.
4. Compared to the somatometric parameters of rural and urban schoolchildren, it was found that 13-year-old rural schools were relatively low compared with the urban age of this age group.
5. The age of 12-year-old girls in the rural school, the body size and the circle of the cranium, (6,6 cm 0,4 m² and 10,3 cm accordingly), and body mass and surface temperatures of 14-15 years old (respectively 5,5 kg and 0,07 m²) less than urban-born schoolchildren.
6. The discrepancies between the physical development indexes of the rural and urban schoolchildren and the standards contradict the practice of interventions between schoolchildren and their correction.

Practical advice

1. Seasonal examination of somatometric parameters for schoolchildren.
2. Development of appropriate healthcare programs in collaboration with teachers and healthcare workers on the basis of the results.
3. Organize further improving the physical activity of schoolchildren and their access to sports.
4. Determine the proportion of school children in the regional context and develop standards for biological development.

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