

INFLUENCE OF PHYSICAL TRAINING ON MORBIDITY RATE OF STUDENTS OF TASHKENT CITY

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There were evaluated the significance of physical training and the quality of nutrition for the morbidity of children and adolescents studied in public educational schools. The traditional system of physical training used in schools (control) is revealed to not capable to proper reduction of morbidity in children and adolescents by the end of the educational year. Reorganization of physical training and rationalization of nutrition of schoolchildren (basic school) have allowed reduce the morbidity level in the year to 34,2% mainly due to reduction in the incidence of diseases associated with the overall resistance of organism. Another problem is the question to reduce the frequency of diseases of bones and joints, for which found rising levels of morbidity, both in basic and control schools.

Keywords: morbidity, hygiene of children and adolescents

As Oreshkin (1990), Milner (1991), and Lubysheva (1992) noted, the value of physical training and sports for the full development of personality, health promotion and prevention of harmful habits (smoking, alcoholism, drug addiction) is not in doubt [4, 6, 8].

In the literature, there is evidence of the presence of expressed communication between health and physical activity as in adulthood, as both in childhood and adolescent periods of life [8, 9, 10, 11]. So, according to Burhanov et al. (2006) [1], the average level of healthy children studied in public schools is approximately 11%, while in schools of sports bias this index is at the level of 17-18%.

According to several studies conducted by Lyah et al. (1992), Kopylov (1997), Nasoldin et al. (2001), Pagava et al. (2006), health decline, the level of physical development of modern schoolchildren are accompanied by deterioration in their physical preparedness [3, 5, 7, 9].

The purpose of study was to evaluate the significance of physical training (PT) for morbidity in children and adolescents studied in public educational schools of Tashkent city.

Materials and methods of research

Investigations were carried out in two public educational schools of Tashkent city (№29 and №249). The

school №29 (basic), on the basis of our proposals has been reorganized for physical training and rationalization of nutrient of children. In the school №249 (control school), the system of physical training and nutrition were not changed.

We examined 1426 students in the basic school and 1416 students in the control one. In each of the schools from the observed number of children and adolescents there formed four age-gender groups: boys and girls of 11-14 and 15-18 years old. According to «Hygienic requirements for physical training, sports equipment and tools in educational institutions of the Republic of Uzbekistan», reorganization of PT concerns improving the forms and tools, as well as the principles of PT, improving medical monitoring and optimization of working conditions on PT [2].

Evaluation of the rationality of changes in nutrition and PT system in children and adolescents studied in these schools, suggested by us, conducted on basis of comparative analysis of one of the most important indicators of children and adolescents health – their morbidity under the conditions of the initial and the modified nutrition system and PT (in the period between 2007 and 2008). Morbidity was studied on the basis of ICD-10 on the admissions to the polyclinics.

Results of research and their discussion

Table illustrates the common level of morbidity in children of the studied groups, based on the admissions data before and after the reorganization of PT (in 2007 and in 2008).

Morbidity rate in schoolchildren on admissions data before and after the reorganization of PT per 1000 children

Age groups	Gender	Basic group		Control group	
		2007	2008	2007	2008
11-14 years old	Male	297,7	181,8	216,0	257,8
	Female	224,0	138,0	197,3	229,0
15-18 years old	Male	361,4	243,0	308,7	328,9
	Female	220,2	161,8	184,6	225,6

These data indicate that during the traditional construction of PT (School №29) in all four age-gender groups by the end of 2008 year increased admission of children to the primary health care institutions (PHCI): in boys of 11-14 years by 19,5%, 15-18 years – 16,1%, whereas in girls of 11-14 years by 6,5%, 15-18 years – 22,2%.

A different picture observed in the schools, in which there were implemented the recommended by us measures on improving nutrition and PT system: in all four groups in 2008, morbidity on admissions significantly decreased: in 11-14 year boys on 38,9%, 15-18 years – 32,8%, in 11-14 year girls – 38,4%, 15-18 years – 26,5%.

Illness patterns in schoolchildren in both schools based on admissions represented 15 classes of diseases (on ICD-10). Prior to the reorganization of PT, the structure, and therefore the morbidity rate on disease classes in two groups had no significant differences. This is well demonstrated in Figure which illustrates the comparative structure of the diseases and shows that in 2007 in both schools for boys of 11-14 years old the first five places in the structure of diseases take such diseases as: diseases of respiratory organs (Class

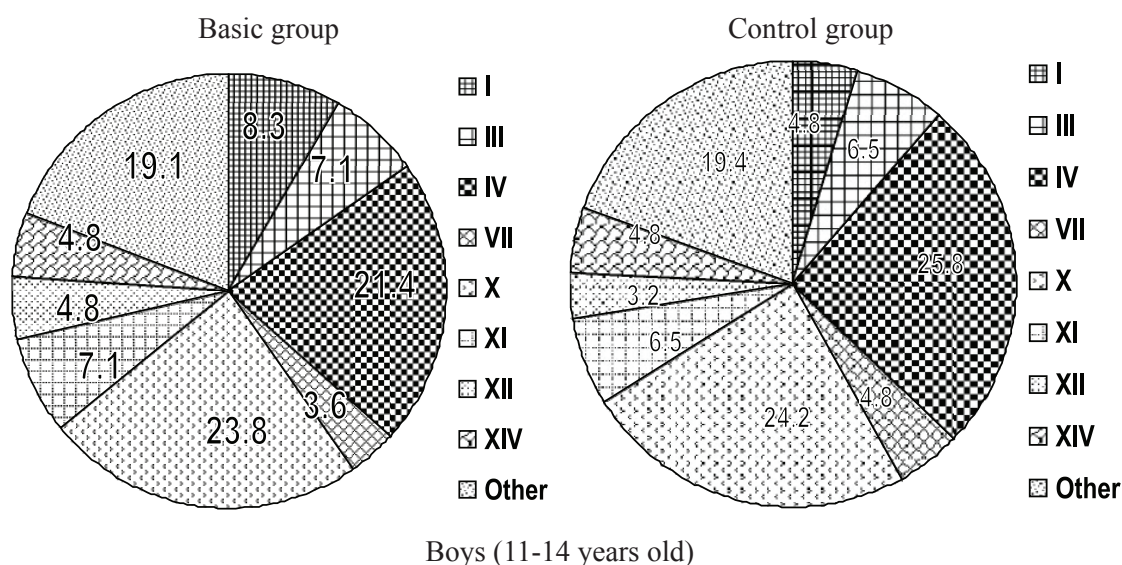
XI – 1st place), endocrine diseases and nutrition disorders (Class IV – 2nd place), infectious diseases (Class I – 3rd place), diseases of blood and hemopoietic organs and illnesses of digestive system (Class III and XI – 4th place), skin and subcutaneous tissue diseases and illnesses of genitourinary system (classes XII and XIV – 5th place).

Regardless the incidence of disease classes (per 1000 students), we revealed significant differences in this index for some classes of diseases in two groups for the period of 2007 and 2008 in all age-gender subgroups.

In 11-14 year boys of main group, the highest morbidity rate in 2007 was typical for respiratory, endocrine, infectious, and blood diseases (42,0; 42,0; 17,5 and 14%, respectively), and common morbidity rate was 297,7‰.

In control group, the highest level in this period was typical for endocrine, respiratory, digestive illnesses, diseases of blood and hemopoietic organs, skin and subcutaneous tissue diseases (62,7; 55,7; 13,9 and 13,9‰, respectively), and common morbidity rate was 257,8‰.

In 2008, common morbidity rate in boys of control group increased by 19,5%. In this connection, this rate increased for 11 of 15 classes of diseases.



Example of the structure of morbidity rate in schoolchildren of both groups (2007), %

The greatest increase in the morbidity was observed for behavior disorders and diseases of circulatory system (up to 2 times), and for skin and subcutaneous tissue diseases (increase on 98,6%).

In basic group, by the end of 2008 morbidity reduced on 38,9% due to 13 out of 15 classes of diseases. However, more significantly de-

creased the number of diseases of eye and its appendages (by 66,7%), behavior disorders, ear, digestive, skin and subcutaneous tissue, genitourinary system diseases (50%).

The situation was similar in the age group of 15-18 year boys: in basic group the total incidence at the end of the year has decreased by 32,8% due to 12 out of 15 classes of dis-

eases (mainly respiratory, skin and subcutaneous tissue, ear and mastoid diseases), whereas in control the common morbidity rate insignificantly increased (6,5%), but significantly increased levels of cardiovascular diseases (by 50,7%), trauma (32,7%), diseases of genitourinary system (25,4%) and ear diseases (20,2%), diseases of blood and hemopoietic organs (19,6%).

Described patterns of these changes in morbidity rate were confirmed in two age groups of schoolgirls. In the age group of 11-14 year, in 2008 indicated an increase in the incidence of admissions (by 16,1%), whereas in basic group this rate reduced by 38,4%. Reducing the incidence in this group is the most largely due to the decrease of digestive diseases (by 62,4%), diseases of the eyes, skin and subcutaneous tissue disorders (49%) and respiratory diseases (by 48,3%).

Girls of 15-18 years of basic group also positively responded to the conducted sanitary measures. However, these improvements were less significant than in the age group of 11-14 year: the level of common morbidity rate has decreased by 26,5% due to 10 out of 15 classes of diseases (most notably diseases of nervous system – on 49,0%, skin diseases – 44,3%, injuries and poisonings – by 39,8%).

In control group of girls at that age in 2008, incidence increased by 22,2% due to 12 out of 15 classes of diseases.

The characteristics of these changes in the morbidity of schoolchildren on admissions in basic and control groups suggests undeniable positively influence of nutrition and improvement of PT system on this indicator of the health of schoolchildren.

Along with this, in all age-gender groups detected issues on which should be paid attention during physical training – in boys and girls in 2008, both in basic and control groups increased the number of diseases of bone-joint system, muscles and connective tissue. We suggest that this can be conditioned by irrational choice of exercises or insufficiently developed technology of their usage.

Conclusions

1. The traditional system of physical training used in schools of Tashkent city does not improve the health of children and adolescents. This is, particularly, maintained by absence of positive dynamics (during the 2007-2008 years) in terms of morbidity on the admissions data. The above characteristics are present in all age-gender groups of studied schools.

2. The introduction of sanitary measures to rationalize nutrition and to reorganize physi-

cal training during the 2007-2008 academic years could significantly reduce the incidence of children and adolescents in comparison with the dynamics of indicators in the control group: the common morbidity rate in 2008 reduced by 34,2%, compared with 2007 year.

3. Reducing the incidence of students after the implementation of sanitary measures is mainly due to decrease in the incidence of eye, ear and mastoid diseases, respiratory, skin and subcutaneous tissue diseases, diseases of genitourinary, digestive system, and mental disorders. Most of these diseases are closely connected with the level of organism resistance. Hence, we can conclude that implemented sanitary measures have nonspecific effect on children and adolescents, increasing the resistance of their organism.

4. After the implementing sanitary measures in the school, an unexpected problem was revealed – the increase in diseases of class XIII (diseases of bones and joints). We suppose that this conditioned by the use of physical exercises, which do not take into account the intensive processes of formation of the skeleton at this age, that dictates the need for more careful selection of physical exercises.

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