

ASSESSMENT OF HEALTH INDICATORS FOR STUDENTS OF DIFFERENT TYPES OF EDUCATION

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Dynamic assessment of health status for students at the present stage is one of the most important problems confronting medicine. Over the past three decades, the health of the younger generation is deteriorating, as evidenced by official statistics, the results of preventive examinations and scientific research [1, 2, 6]. Assessment of the health status and physical development of the younger generation in dynamics allows to determine the effectiveness of the ongoing reforms, both the educational process and medical measures to preserve the health of children.

At present, the medical community is interested in the problems of the health status of children of school age, in connection with the increasing loads and deepening of the school curriculum. The content of school programs varies mainly in the direction of the intensification of education and increasing the volume of training loads [3].

In addition, in the conditions of active introduction of new type schools, it is necessary to evaluate their educational and educational process, since subjects that are not included in traditional educational programs are introduced into the daily schedule and timetable [9]. Important risk factors for the health of children in educational institutions of a new type is the formation of a state of chronic stress [4, 5], which contributes to the development of neurotic states, functional deviations and chronic diseases.

The purpose of our study was a comparative assessment of the health and physical development of schoolchildren of 11–12 years of general education schools and pupils of the Ataman Biryukov Cossack Cadet Corps.



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MATERIALS AND METHODS OF RESEARCH

Children of 6–7 classes of comprehensive schools and the Cossack Cadet Corps of the Astrakhan Region were examined. We assessed the level of physical development, the group of health, based on clinical examination and the conclusion of specialists. In total, 100 pupils of secondary schools (48 boys, 52 girls) and 83 students of the Cossack cadet corps aged 10.9–12.5 years were examined. The determination of the level of physical development, harmony, and somatotype was assessed according to the generally accepted method. Assessment of the main physical parameters (growth, weight, circumference of the chest) was carried out using a nonparametric (centile) method.

Differences in growth rate were characterized by the following somatotypes: microsomatic somatotype

— slowed-down rate of age development; macrosomatic — accelerated pace; mesosomatic — the average, was divided depending on the prevalence of one or another tempo on the meso-, micro- and mesomacrosomatotype.

Clinical evaluation of the state of health was carried out by traditional methods with the definition of nosology: copying of data from medical records (the history of the child's development, the child's medical card) with the verification of their results with the data of their own examination; Functional samples of cardiorespiratory system — mass-growth index of Quetelet, double product — Robinson index, Skibinsky index, Shapovalova index of power, Ruthier index.

RESULTS OF THE STUDY

When assessing the physical development of schoolchildren who attend 6–7 classes of comprehensive schools in Astrakhan, it was found that the average indicators (25–75 centile) of physical development (height, weight, circumference of the chest) were 67%, below average — 13%, above average — 20%. The physical development of the cadets of the Cossack corps was estimated as average in 84% of children, below average — 2.5%, above average — 13.5%.

When assessing the growth rates of students in general education schools, it was found that boys with a microsomatotype were 14.3%, a mesomicrocosmatotype — 51.4%, a mesomacrosomatotype — 14.3%, and a macrosomatotype — 20%. Girls have higher growth rates: 12.5% with a microsomatotype, 53.1% with a mesomicrocosmatotype, 18.8% with a mesomacrosomatotype and 15.6% with a macrosomatotype.

Among the pupils of the Cossack corps, children with a mesomacrosomatotype — 50.1%; with mesomicrocosmatotype — 34.3%. The share of macro- and microsomatotype accounts for 13.5 and 2.5% of children, respectively.

Analysis of the results of a comprehensive health assessment showed that the first group of health was established in 31%, the second group — 51%, the third group — 18% of schoolchildren. Among the girls of the first group of health met 3 times more often than among boys (36.5% vs. 12%). The second group of health among children of both sexes is established with a slight difference in frequency (girls — 52%, boys — 50%). The third group of health was more often determined in boys than in girls (25% vs. 11.5%).

Among the cadets of the Cossack corps the following distribution among health groups is observed: the first — 25%, the second — 69%, the third — 39%.

According to the results of the analysis of the medical examinations, it is established that the chronic

pathology of students in general education schools is represented by diseases of the musculoskeletal system, respiratory and digestive organs.

The analysis of morbidity allowed to establish that the first two places in the structure of diseases are occupied by pathology of the musculoskeletal system and respiratory organs.

The structure of morbidity among pupils of the Cossack corps differs by prevalence of respiratory diseases, second place is occupied by trauma, diseases of the musculoskeletal system occupy the last place.

To clarify the level of physical health, a complex consisting of five morphological and functional indicators was used: the mass-growth index of Quetelet, the double product — the Robinson index, the Skibinsky index, the Shapovalova index of power, the Ruthier index. The results are shown in Table 1.

Table 1.

Indicators	The number of pupils in secondary schools corresponding to the average indicators (%)		The number of cadets of the Cossack corps, corresponding to normal indicators (%)
	boys	girls	
The Quetelet index	58,3	65,3	72,8
The Robinson index	52,0	55,8	60,2
The Skibinsky index	45,8	59,6	62,8
Shapovalova Index	43,7	71,1	82,0
The Ruthier Index	54,1	63,4	69,8

Average indicators of the vital index were found in 47%, below the average 15% and high indicators - 38% of students in general education schools.

The indicators of the Cossack corps pupils are shifted to higher values: 49% of the cadets have average values of the vital index, 11% are below the average, and 40% — are high.

CONCLUSIONS

Based on the results of the study, a conclusion was made about the positive impact on the physical development of children of the education system of the Cossack Cadet Corps, which includes elements of athletic and combat training. The tendency of displacement of the pathology of the musculoskeletal system to the last place in the structure of the overall morbidity is evaluated positively. Preservation of

posture is the key to the harmonious development of the child's organism and the proper formation of the functioning of all organs and systems. Students with disorders of posture differ from healthy peers in the level and harmony of physical development [7, 8].

However, in the structure of morbidity there is an increase in the percentage of diseases of the nervous system, which may be due to the state of chronic stress among children whose learning conditions are associated with a change in their place of residence, separation from the family and an increased level of responsibility.

The obtained data testify to the need for further dynamic study of health indicators and physical development of children and teenagers studying in different education systems in order to select the optimal conditions for maintaining and strengthening the health of the younger generation.

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