INNOVATIONS IN EDUCATION AND PHYSICAL DEVELOPMENT OF SCHOOL CHILDREN

Martynovich N.N. (a) *, Rusakov A.A. (b)
*Corresponding author

(a) Irkutsk State Medical University, Irkutsk, Russia
(b) Irkutsk State University, Irkutsk, Russia

Martynovich N.N., https://orcid.org/0000-0002-5428-602X
Rusakov A.A., https://orcid.org/0000-0002-6453-3928

Abstract

The school system is forced to change with the development of scientific and technological progress and information society and education. There is a decrease in the level of health and physical development of children with the introduction of innovations. The problem of health and physical development of children is currently relevant, especially in the transition from mass unified education to differentiated education.

The physical development of children in grades 1-3 of innovative and traditional schools of Irkutsk was studied in the research of the impact of innovations in education and physical development of school children. The study involved 495 children in traditional school at the age of 7-8 years 78 child and at the age of 8-9 years 74 children, in the innovative school at the age of 7-8 years 116 children and at the aged 8-9 years 231 children.

Physical development indicators such as height, body length and chest circumference, growth rates of anthropometric indicators in children were studied.

The research allowed us to conclude that the increased workload in the innovative school leads to a decrease in the growth of body length and weight and lag in the growth rate of anthropometric indicators compared with children enrolled in the programs of traditional schools. It is noted that innovations in education require further study of health and health of children, development of hygiene standards, methodological approaches to pediatric care and physical education of preschool children.

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Corresponding Author: Martynovich Natalya Nikolaevna, mn-07@bk.ru, +7914875861

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1. Introduction

In the education system, a person is from 3 to 24 years old and all this time he is under pressure, which some authors compare with adverse environmental factors (Kuchma, 2001).

It is known that the risk factors in the school period are continuous, systematic and long. Many authors noted that the influence of the school environment which affect the child daily throughout the period of training (Baranov, 2013) is usually accompanied by violations of mental, somatic, physical health (Stuneeva, 2000).

2. Problem Statement

Currently, the problem of health has become the most urgent. At the stage of implementation of the transition from mass unified education to differentiated education, the implemented educational programs are diverse and often do not correspond to the physiological, physical and mental capabilities of children. The physical development is of particular importance for children of primary school age, as it is the most sensitive factor at this age (Khorosheva, 2006).

The reform of the school system increases the impact of stressful factors on children, and the introduction of new technologies and forms of education, including innovative type lead to deterioration of the functional state of the body, reduce the performance of children, violation of physiological needs for sleep and rest (Baranov, 2015).

The comparison of these indicators in traditional and innovative schools will reveal trends in changing conditions in the context of changes in the education system. Some authors note that with the innovative system of education, the teaching load in schools increases by 1.5-2 times in one school week (Kuchma, 2015).

It is noted that among high school students of lyceums enrolled in innovative programs, disharmonious development is more often revealed, a tendency to slow down the growth rate, body weight deficit is 2 times more often than in traditional schools (Stepanova, 2013).

Researchers of hygiene of children and adolescents note that today the physical development of children and adolescents tends to decrease body circumferences, functional indicators, decrease in the rate of acceleration, lack of weight and length of the body, the backlog of biological development (Shchurov, 2011).

Increase the tension of the school of labour causes the growth of fatigue students. Innovative training load significantly weary students, thereby reducing the absorption of the material being studied and sometimes the disruption of adaptation. This problem is of particular importance in institutions of such new kind as the gymnasiums and the lyceums, which primarily use innovative educational programs (Rusakov, 2018).

3. Research Questions

We studied the impact of educational innovation on the physical development of children of primary school age in this research.

4. Purpose of the Study

The purpose of the research is to study the indicators of physical development of primary school students enrolled in schools of different types.

5. Research Methods

The younger students enrolled in the 1st and 3rd grades of primary traditional school and innovative school were under supervision.

The groups were formed by a continuous method, children with high social stigma, pronounced risk factors in ontogenesis, burdened with biological and social history were excluded from the study groups. Evaluation of the ontogenesis of children was conducted during the collection of anamnesis of life of the child, determine his ancestry at least 3 generations, information about the history of the development of the extracts, certificates. Genealogical factors were analyzed using a genealogical index which is defined as the total number of diseases in blood relatives.
of proband divided by the total number of blood relatives. Account of the genealogical history levels: low, moderate, high and severe (Stepanova, 2002).

The burden of biological history was defined risk factors in the antenatal, intrapartum, early neonatal, neonatal and postnatal periods (Stepanova, 2002).

The level of the social stigma was used to judge the problem of the intrauterine period (Stepanova, 2002).

We took into account the completeness of the family, the education and profession of parents, the age of parents, financial security of the family, the psychological microclimate in the family, the presence or absence in the family of bad habits and antisocial forms of behavior, housing and living conditions, sanitary and hygienic conditions of education of the child, regime and educational factor in the analysis of social history (Stepanova, 2002).

The formation of age groups of children was carried out according to their full calendar age. 495 children were selected after studying the risk factors in ontogenesis. 152 children were enrolled in a traditional school in a traditional school: 7-8 years -78 children and 8-9 years - 74 children. 347 children were trained in innovative school: 7-8 years - 116 children and 8-9 years - 231 children. The research presents the results of simultaneous studies, in this regard, the age groups are not identical.

Physical development of school children was determined by weight, height and chest circumference. Performance was evaluated through tables centile type (Kuchma, 2015).

Statistical processing of the results was carried out using the Statistica program. The arithmetic mean, standard deviation and mean error of the arithmetic mean were determined. The statistical significance of differences in quantitative traits was analyzed using Student t-test in the confidence interval of more than 95 %.

6. Findings

The assessment of children’s living in the family was assessed by parents who found sanitary and hygienic living conditions satisfactory in 95.07% of families for children of traditional schools and in 94.31% of innovative schools (Tkachuk, 2013).

The research showed that the children of the first year of study at the innovative school differed slightly from the children of traditional schools in physical development at admission. Thus, body mass indices in children of innovative school were higher than in traditional school and these values had statistically significant differences (p≤0.05). Growth rates at the same age in the innovative school were also statistically higher than in children of traditional school (p≤0.050). According to our assumption, this testified to a more favorable social situation of families who want to teach a child in an innovative type of school.

![Figure 01. The body weight, kg (p≤0,05).](image-url)
After the first year of the study, the body weight and growth rates were equal in both types of schools in children 8-9 years, which may indicate the adverse impact of innovative forms of education on the physical development of children.

![Figure 02. The body length, cm (p≤0,05).](image)

In the study of the indicators of the chest circumference, these trends were maintained, but statistically significant differences were not observed.

![Figure 03. The chest circumference, cm (p≥0,05).](image)

The physical development is a very sensitive indicator, especially for children of preschool age and primary school children. Therefore, any adverse impact on the child during this period, necessarily affects his physical development (Goncharov, 2009).
7. Conclusion

The findings suggest that school innovations have an adverse impact on the physical development of children due to their stressful effects.

References