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ФИЗИЧЕСКОЕ РАЗВИТИЕ МАЛЬЧИКОВ-СИРОТ МЛАДШЕГО ШКОЛЬНОГО ВОЗРАСТА С УМСТВЕННОЙ ОТСТАЛОСТЬЮ

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Умственная отсталость считается одной из самых распространенных патологий психического развития детей. Параметры физического развития активно используются в качестве информативных маркеров состояния здоровья, социально-гигиенических благополучия как в норме, так и при различных патологиях. При этом, детям-сиротам с умственной отсталостью в этом контексте уделяется недостаточно внимания.

Цель. Изучить параметры физического развития у мальчиков младшего школьного возраста с умственной отсталостью, воспитывающихся в специализированном детском доме.

Материалы и методы. Обследовано 34 мальчика (7-11 лет). Из них 20 детей с диагнозом умственная отсталость умеренной степени тяжести (F71), воспитывающиеся в специализированном детском доме для умственно отсталых детей (без попечения родителей). В контрольную группу вошли 14 интеллектуально здоровых мальчиков того же возраста, воспитывающихся в детском доме физиологического типа. Исследовались антропометрические параметры (длина тела, масса тела, окружность груди и головы, поперечный диаметр грудной клетки), индекс «стении», уровень физического развития, индекс Кетле II.

Результаты. Полученные данные свидетельствуют о резком снижении показателей, характеризующих параметры физического развития у мальчиков-сирот с умственной отсталостью по сравнению с интеллектуально здоровыми мальчиками–сиротами. Поскольку дети находятся в одинаковых социально-гигиенических условиях, выявленные особенности могут быть обусловлены сочетанным влиянием наличия отклонений в интеллектуальном развитии детей и воспитания в условиях дома-интерната.

Заключение. Полученные результаты определяют необходимость более пристального медико-гигиенического сопровождения детей-сирот с умственной отсталостью.

Ключевые слова: *дети; умственная отсталость; физическое развитие; сироты.*

PHYSICAL DEVELOPMENT OF PRIMARY SCHOOL-AGE ORPHAN BOYS WITH MENTAL RETARDATION

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Mental retardation is considered one of the most common pathologies of children's mental development. Parameters of physical development are actively used as informative markers of

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health status, social and hygienic well-being both in norm and in various pathologies. At the same time, not enough attention is given to orphans with intellectual disabilities in this context.

Aim. To study the parameters of physical development in primary school-age boys with mental retardation brought up in a specialized orphanage.

Materials and Methods. 34 Boys (7-11 years old) were examined. Of these, 20 children with a diagnosis of moderate mental retardation (F71) were brought up in a specialized children's home for mentally retarded children (without parental care). The control group included 14 intellectually healthy boys of the same age who were brought up in an orphanage of a physiological type. Anthropometric parameters (body length, body weight, chest and head circumference, cross-section diameter of the chest), 'sthenia' index, level of physical development, and Quetelet II index were studied.

Results. The data obtained indicate a sharp decrease in parameters that characterize physical development of orphan boys with mental retardation in comparison with intellectually healthy orphan boys. Since children were in the same social and hygienic conditions, the identified features may be due to the combined influence of the presence of deviations in the intellectual development of children and upbringing in a residential home.

Conclusion. The results obtained determine the need for closer medical and hygienic support for orphans with mental retardation.

Keywords*: children; mental retardation; physical development; orphans.*

Mental retardation is considered one of the most common pathologies of mental development of children [1]. Patients with mental retardation are characterized by reduction of cognitive, verbal, motor abilities, and also by deviations in functioning of different organ systems [2].

Parameters of physical development are actively used as informative markers of the state of health and of social-hygienic well-being both in norm and in different pathologies [3-5]. It was noted that alterations of the parameters of physical development, their interrelation with functional capacities of an organism may serve a marker of development of chronic diseases in children [6,7], and also a prognostic criterion for evaluation of the severity of a pathological condition [8]. Incompleteness of growth and of morphofunctional maturation of primary school-age children makes them extremely susceptible to the influence of negative external factors [9].

Several authors in their works noted deviation of parameters of physical development in children with mental retardation [10-12]. With this, insufficient attention is given in this context to children living in specialized children's homes.

Materials and Methods

A study of parameters of physical development in 20 boys of 7-11 years of age with a moderate degree (F71) of mental retardation living in a specialized orphanage was conducted. A control group included intellectually healthy boys of the same age living in an orphanage of a physiological type (n=14). The study was conducted by unified methods with use of standard instrument kit [13]. Anthropometric parameters (body length, body weight, chest and head circumference, cross-section diameter of the chest), 'sthenia' index, level of physical development and Quetelet II index were analyzed.

The studies were conducted in correspondence with ethic and legal standards stated in World Medical Association Declaration of Helsinki (2000, latest revision in October 2008, Seoul) and were approved by Committee on biomedical ethics of Research Institute of Medical Problems of North.

Statistical analysis was conducted using application software package Statistica 6.1. Statistical significance was determined for quantitative non-parametric characteristics using Mann-Whitney U-test ((the data were presented in the form of median (Me) and

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quartiles (125 and 75)), and for the qualitative characteristics – using χ-square. The level of statistical significance was $p<0.05$.

Results and Discussion

Analysis of anthropometric parameters showed their statistically significant reduction in orphan boys with mental retardation in comparison with healthy orphans (Table 1).

Analysis of 'sthenia' index that characterizes proportional development 'in width' showed predomination of mesomorphy (proportional development in comparison with other variants of 'sthenia' index) in both groups of the examined children (Table 2). However, if in the control group deviation from proportional development took the form of brachymorphia (predomination of growth in width), in orphan boys with mental retardation it was manifested by dolichomorphia (predomination of linear growth, Table 2).

In orphan boys with mental retardation physical development below medium level predominated in comparison with the control group (Table 2). It should be emphasized that in the group of boys with mental retardation no children with physical development above normal were identified (in the control group this parameter was recorded in 29% of children, Table 2).

We also examined Quetelet II index that characterizes the proportion between body mass and body length. In boys with mental retardation decreased Quetelet II index was recorded in comparison with the control group ($p=0.0057$, Figure 1).

Table 1

Anthropometric Parameters in Examined Groups of Children Living in Orphanage

Parameter	Control Group (n=14)	Children with Mental Retardation (n=20)	p
Body length, cm	136 (135;141)	124.5 (118;134)	0.00163
Body mass, kg	30.7 (29.3;37.9)	23 (20.4;26.4)	0.00013
CC, cm	64 (61;68)	60 (55.5;63.5)	0.03
TDC, cm	20 (19;21)	19 (18;20)	0.137
HC, cm	52.5 (52;53)	49.5 (48.8;20.3)	0.00005

Note: results are given in the form of Me (25;75); CC – chest circumference, TDC – transverse diameter of chest, HC – head circumference

Table 2

Distribution of Children Living in Orphanage according to 'Sthenia' Index and Level of Physical Development (%)

Parameter	Control Group (n=14)	Children with Mental Retardation (n=20)	p
'Sthenia' index			
Moderate dolichomorphia	–	17%	0.321
Mesomorphy	92%*	83%**	0.788
Brachymorphia	8%	–	0.898
Level of physical development			
Below medium	14%	55%	0.041
Medium	57%	45%	0.727
Above medium	29%	–	0.045

Note: * – statistically significant predomination of mesomorphy in the control group in comparison with brachymorphia ($p=0.000001$); ** – statistically significant predomination of mesomorphy in boys with mental retardation in comparison with moderate dolichomorphia ($p=0.000001$)

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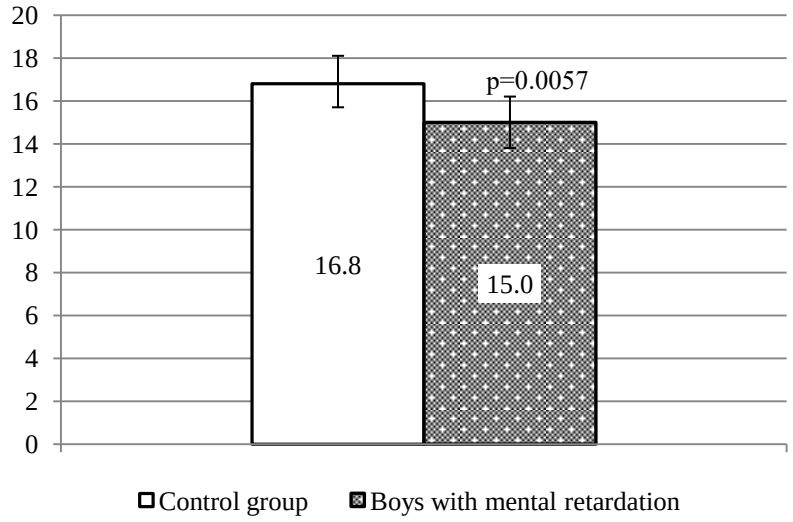

Fig. 1. Quetelet II index (conv. un.) in the compared groups

Thus, a considerable difference of parameters of physical development between orphan boys with mental retardation and intellectually healthy orphan children was found. Boys with mental retardation showed statistically significant reduction of anthropometric parameters and Quetelet II index as compared to the control group. Besides, in the group of boys with mental retardation, physical development below the medium level predominated both inside the group and in comparison with the control group.

Russian and international studies of the condition of physical development of mentally retarded children mostly concern children living in families. In these studies attention was often paid to disharmony both due to deficit of body mass and body length [10,14], and due to excessive body mass [11,12,15]. In some works no significant differences were revealed between mentally retarded and mentally healthy children in parameters of physical development [16,17]. To note, the works devoted to orphan children with mental retardation living in orphanages, are scarce. Thus, in the work of K.S. Tebenova el al. (2015) reduced parameters of physical development were reported (however, it should be said that this work concerned children with profound mental retardation). In view of a high incidence of mental retardation, serious social consequences of this pathology, and also the policy of the government directed to socialization and adaptation of children with mental retardation, further more complex studies of the state of health of children with mental retardation are required.

Conclusion

All the examined children were living in the same conditions of group homes regulated by the sanitary rules and norms for institutions for orphan children and children remained without parental care (СанПиН 2.4.3259-15).

Sharp deviations of parameters of physical development (retardation in all examined anthropometric parameters, a considerable percentage of children with physical development ‘below medium’ level) in orphan boys with mental retardation in comparison with healthy orphans, may be determined not only by the influence of the orphanage in itself, but by many-sided deprivation experienced by children in conditions of an orphanage, as well as by pathology of intellectual development.

The obtained results indicate the necessity for a more thorough medico-hygienic management of orphan with mental retardation.

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