



STANDARDS OF CENTILE SCALES OF MAIN INDICATORS OF PHYSICAL DEVELOPMENT OF PUPILS IN ANDIJAN AT THE AGE OF 12-16 YEARS

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A B S T R A C T	KEY WORDS
1919 Andijan schoolchildren aged 12-16 were examined. The main indicators of physical development (weight, body length, head and chest circumference) are described in a non-parametric centile (syn. percentile, percentile) method. It is shown that the value of their distribution in the population, their deviation towards increase and decrease is recommended to be used in assessing the physical development of children in the practice of a pediatrician.	Schoolchildren, characteristics, physical development, centile scales.

INTRODUCTION

One of the leading criteria for the health of children and adolescents is the level of physical development - PhD[1, 6, 11,]. To assess the PhD (weight, body length, etc.) of children and adolescents and compare them with statistical age and sex averages, two methods are mainly used - parametric (sigmal, regression) and nonparametric - centile [4, 5, 10]. The first of these methods is suitable for features with variation according to the law of normal distribution - Gauss-Laplace, i.e. when the distribution of the frequency of the sign in the direction of increase or decrease is symmetrical, with respect to the arithmetic mean (M). However, it is known that some PhD indicators (body weight, chest circumference, etc.) have a distribution with right-sided asymmetry [5, 9].

Therefore, when conducting multi-purpose, long-term (prospective) preventive studies among children and adolescents, it is advisable to use the method of centile (syn. percentiles, percentiles) scales to assess PhD, where right- and left-sided asymmetries in the distribution of the studied indicators are leveled. The developed regional standards for centile scales of indicators of the PhD of school-age children require updating due to the statute of limitations [7, 8].

The objective of this study was to develop new standards for centile scales of the main indicators of the physical development of Andijan schoolchildren aged 12-16 years.

Material and Research Methods

1919 students of V-IX grades (12-16 years old) of general educational institutions of Andijan were examined by the method of random numbers according to the Bradford table [4]. The ratio of boys - 960 (50.1%) and girls - 959 (49.9%) were comparable. Each age-sex group was equal in number (at least 200 children). The study of the main indicators (weight, body length, head and chest circumference) was carried out with an accuracy of ± 0.5 cm, ± 0.1 kg, using standard methods and generally accepted criteria for conducting research - functional health groups I-II and the absence of cases of acute diseases in last three weeks.

When developing centile scales of the main parameters of the PhD of schoolchildren, we used the recommendations of E.A. Gubler [4] and G.F. Lakin [5] on conducting non-parametric studies (initial sample of at least 10%, representativeness of the sample by number and age, etc.) . The actual material was processed using Microsoft office XP (2008).

Results of the Study and their Discussion

In our work, to characterize the centile scales of schoolchildren's PhD indicators, we used an extended version of the Stewart scale, which provides for the allocation of seven fixed centiles: 3rd, 10th, 25th, 50th, 75th, 90th and 97th. The gaps between them are called intercentile intervals or corridors, there are eight of them (Table 1-4). Thus, the first corridor includes the value of the attribute from 0 to 3 centiles, i.e. 3% of children are characteristic. The indicators included in this interval are estimated as very low, they are very rare in healthy children, and such a child is subject to a special examination [2, 3, 8]. The second corridor includes values from 3 to 7% of children. These figures are rated as low. These figures are rated as low. If there are other deviations in the state of health, such a child is subject to in-depth examination and medical and recreational measures. The third corridor includes indicators between the 10th and 25th centiles, which are characteristic of 15% of children of a given gender and age. The indicators are considered reduced and such a child is assessed as healthy, but in need of observation [2].

The fourth and fifth corridors include values from the 25th to the 75th centile, which are characteristic of 50% of healthy children, are considered and evaluated as average, and the 50th centile is the middle of the series or the median [2, 7]. The sixth corridor contains values above the average, this includes indicators from 75 to 90 centiles, 15% of children are typical. The seventh corridor includes indicators of 90-97 centiles, characteristic of 7% of children. Depending on the state of other systems and organs, children in this group need to be monitored.

The eighth corridor includes values above the 97th centile, characteristic of 3% of children and is assessed as very high. Such children need an in-depth examination, possibly treatment as well. Here the probability of pathological manifestations is rather high [2, 10].

It seems to us that the developed standards of the centile scales of the RF of children and adolescents of different ages and genders make it possible to determine the age patterns of their growth and development, to identify the impact on the health of exogenous and endogenous factors, taking into account which allows us to outline a range of regional preventive and therapeutic measures to correct violations. physical development of the younger generation.

CONCLUSIONS

1. The non-parametric (centile) method for assessing the physical development of children and adolescents is distinguished by its simplicity and ease of use, it strictly reflects the deviations of anthropometric data.
2. Data on indicators of physical development obtained by centile methods can be used both in single-stage and prospective studies of children and adolescents to create primary prevention programs to correct the nutrition and health of a growing organism.

Table 1 CENTILE CHARACTERISTIC OF BODY WEIGHT (KG) OF ANDIJAN PUPILS AGED 12-16

№	Age surveyed	Girls								Boys							
		Centile								Centile							
			3	10	25	50	75	90	97		3	10	25	50	75	90	97
		Centile corridors								Centile corridors							
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
1.	12 years		23,6	28,2	30,6	35,3	40,8	47,2	53,8		25,1	26,7	30,1	35,7	39,0	45,2	50,9
2.	13 years		27,2	31,6	35,7	40,8	46,1	49,9	57,2		28,2	30,9	33,8	38,4	43,5	49,7	54,9
3.	14 years		31,6	35,6	40,4	43,9	48,5	53,5	58,9		28,8	33,9	37,7	43,9	49,5	56,0	63,6
4.	15 years		35,6	38,6	42,2	47,1	52,6	57,8	63,6		35,4	39,2	43,6	49,0	54,2	59,3	65,9
5.	16 years		36,1	39,8	43,9	49,3	53,6	60,4	68,9		38,3	42,1	47,1	53,7	59,1	67,4	74,1

Table 2 CENTILE CHARACTERISTIC OF BODY LENGTH (CM) OF ANDIJAN PUPILS AGED 12-16 YEARS

№	Age surveyed	Girls								Boys							
		Centile								Centile							
			3	10	25	50	75	90	97		3	10	25	50	75	90	97
		Centile corridors								Centile corridors							
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
1.	12 years		130,2	136,5	141,7	147,3	153,2	158,3	162,4		130,6	135,2	138,9	143,8	148,9	153,7	159,0
2.	13 years		140,0	142,4	146,5	151,8	156,7	159,9	164,6		135,7	139,9	143,6	149,3	154,9	160,4	167,2
3.	14 years		145,0	147,1	150,9	155,4	159,5	163,7	169,4		140,0	143,9	149,6	156,9	164,8	168,7	172,1
4.	15 years		146,1	149,0	152,4	156,9	160,8	165,9	170,2		145,3	156,0	157,7	163,8	169,7	175,3	178,6
5.	16 years		146,4	150,8	154,2	158,4	163,7	167,9	171,3		152,0	156,9	163,1	168,9	173,4	177,7	182,7

Table 3 CENTILE CHARACTERISTIC OF HEAD CIRCUMFERENCE (CM) OF ANDIJAN PUPILS AGED 12-16 YEARS

№	Age surveyed	Girls								Boys							
		Centile								Centile							
		3	10	25	50	75	90	97		3	10	25	50	75	90	97	
		Centile corridors								Centile corridors							
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
1.	12 years		46,5	50,1	50,9	52,5	54,1	55,2	58,6		47,2	50,2	51,1	52,6	54,2	55,6	58,7
2.	13 years		47,8	50,4	51,3	53,1	54,9	56,3	59,0		50,0	50,5	51,4	52,9	54,5	57,4	59,2
3.	14 years		48,8	51,6	52,6	54,3	55,2	57,1	60,2		50,1	50,9	52,2	53,3	55,2	58,1	59,4
4.	15 years		50,1	52,4	53,6	55,2	56,9	58,2	60,5		50,4	51,4	53,8	54,7	56,2	58,5	59,6
5.	16 years		50,2	52,6	53,7	55,6	57,4	58,7	60,9		50,7	51,8	54,1	55,2	57,5	59,5	60,7

Table 4 CENTILE CHARACTERISTIC OF CHEST CIRCUMFERENCE (CM) OF ANDIJAN SCHOOLCHILDREN AGED 12-16 YEARS

№	Age surveyed	Girls								Boys							
		Centile								Centile							
		3	10	25	50	75	90	97		3	10	25	50	75	90	97	
		Centile corridors								Centile corridors							
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
1.	12 years		57,4	60,7	63,3	67,5	72,6	77,6	82,2		57,5	61,8	63,5	67,5	70,9	76,6	79,4
2.	13 years		60,2	62,9	66,7	70,9	75,1	78,9	83,3		60,4	62,8	66,3	69,9	73,6	77,4	81,4
3.	14 years		61,0	66,4	70,6	74,1	78,4	82,9	87,7		62,5	65,8	68,3	72,4	76,9	80,3	86,6
4.	15 years		66,1	69,9	72,5	76,7	81,3	84,9	89,5		63,9	67,8	71,9	76,2	80,1	85,6	89,8
5.	16 years		66,8	71,1	74,5	78,4	83,5	88,3	94,3		69,3	72,0	76,8	79,3	85,4	89,2	94,2

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