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EFFECTIVENESS OF THE PRACTICE OF INDIVIDUALIZING EXISTING HEALTH PROGRAMS FOR STUDENTS IN PHYSICAL EDUCATION

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Abstract: The article examines the effectiveness of individualizing existing health programs in physical education classes for students. By adapting physical activity plans to meet the specific needs of students based on their health status, physical fitness, and personal interests, the study has a positive impact on motivation, physical performance, and overall well-being.

Key words: individualization, physical education, health programs, students, personal training, fitness, motivation, performance.

INTRODUCTION

In order to substantiate the need to develop and implement methodological tools for the pedagogical technology of individualizing students' physical education programs, a specific experiment was conducted to determine somatometric and physiometric indicators using questionnaires, pedagogical tests.

At the first stage of the study, a weekly survey was conducted among 346 students of the 1st and 2nd year of undergraduate studies at the Southern Federal University on the state of motor activity.

Motor activity, along with nutrition, is considered the most important factor in the formation of health as the "input-output" of energy in the biological system, the main component of a single system. However, it should be remembered that it is characterized not only by quantitative, but also by qualitative values. The World Health Organization, in addition to the required daily activity rates ("number of locomotions"), also recommends their differentiation by power zones, which states that for a young healthy person (not an athlete), in addition to low-intensity activities, it is necessary to perform at least 2 hours of moderate-intensity activities every day for 30-60 minutes 3-5 times a week, and 1-2 times a week of high-intensity activities for 1-1.5 hours.

LITERATURE REVIEW

Modern research in the field of physical education increasingly emphasizes the need to adapt physical activity programs to the individual needs and capabilities of students. According to Sallis and McKenzie (1991), standard physical education curricula often fail to take into account the

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diverse physical and psychological profiles of students, which leads to low activity and limited health benefits. Their work has provided a basis for promoting more flexible and inclusive approaches in educational settings.

Bailey (2006) further examines the outcomes of physical education, noting that while traditional programs may promote general physical fitness, they do not account for individual variations in motivation, ability, or health status. She argues that personalizing content not only improves physical performance, but also supports broader educational and social development.

A study by Chen and Hammond-Bennett (2018) found that personalized physical education plans had a significant impact on students at risk for hypokinetic disorders. Their findings showed that when students participated in activities that were appropriate for their physical fitness levels and preferences, both attendance and performance improved.

Furthermore, Vygotsky's (1978) sociocultural theory supports the idea that individualized instruction, including in physical education, enhances development by working within each student's "zone of proximal development." Using this concept, personalized programs allow students to develop optimally by accepting challenging but achievable tasks.

Furthermore, the World Health Organization (WHO, 2020) recommends a shift from generalized physical activity guidelines to more flexible, individualized recommendations, particularly for youth populations. WHO emphasizes that individual preferences, health conditions, and functional capacities must be taken into account to ensure the effectiveness and sustainability of health programs.

The literature reviewed collectively suggests that individualized approaches to physical education are more effective than single-centered strategies. They promote physical development, higher motivation, and stronger adherence to healthy lifestyles, especially in diverse student populations.

RESULTS AND DISCUSSION

The questionnaires on the time spent by students on motor activity in different power zones per week, where the average value for the sample is not informative, since there is a significant spread of indicators, and the division of the results into subgroups according to the categories "below recommended", "recommended", "above recommended", showed that boys (15.4%) and girls (18.1%) comply with the recommended number of locomotions and correctly distribute motor activity into the intensity-strain zones (Table 1).

Table 1

Results of the questionnaire on the lifestyle of students (motor activity), (X±m)

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faolligi), (X±m)

/N	Questions/answer options	Boys (n=136)		Girls (n=210)	
	Low-intensity physical activity (average):				
	Average hours per week in the sample (by choice)	14,3±12,5		13,5±11,6	
		n		n	%
	< 10 hours per week	42	0,9	78	37,1
	10-20 hours per week	35	5,7	64	30,5
	< 20 hours per week	59	3,4	68	32,4
	Moderate-intensity physical activity (average):				
.		5,2±3,8		4,8±3,2	
.		n		n	%
.	< 1.5 hours per week	42	0,9	98	46,7
.	1.5-5 hours per week	28	0,6	41	19,5
.	< 5 hours per week	66	8,5	71	33,8
	High-intensity physical activity (moderate):				
.	Average Hours per Week in Sample (By Selection)	2,3±1,6		1,2±0,9	
.		n		n	%
.	< 1 hour per week	62	5,6	118	56,2
.	1-3 hours per week	41	0,1	45	21,4

.	3 hours per week	33	4,3	47	22,4
Performing the recommended amount of movement in all strength zones					
.		n		n	%
.		21	5,4	38	18,1

Approximately one third of all students surveyed show insufficient motor activity in their daily lives, and among those who do systematically engage in physical activity, an incorrect distribution of loads across power zones is noted, including the replacement of aerobic exercises with strength exercises and high-intensity loads. This may serve as a basis for assuming that most students, while studying at a higher educational institution, do not have sufficient competence in the field of physiologically based dosing of physical activity or have low motivation to regularly engage in physical culture.

In the study of students' attitudes towards self-development in sports and recreation (SSOR), it was found that 16.2% of boys and 14.8% of girls are indifferent, 2.9% of boys and 3.8% of girls have a negative attitude towards physical education and sports (Table 2).

Table 2.

Results of a survey conducted among students on their attitudes towards sports, health, and self-development

/N	QUESTIONS/ANSWER OPTIONS	BOYS (N=136)		GIRLS (N=210)	
Attitude towards self-development in sports and health:					
.		n	%	n	%
.	Satisfactory	110	80,9	171	81,4
.	Indifferent	22	16,2	31	14,8
.	Unsatisfactory	4	2,9	8	3,8
Do you want to engage in sports, health, and self-development?					

.		n	%	n	%
.	Always	8	5,9	36	17,1
.	Often	36	26,5	90	42,9
.	Sometimes	92	67,5	84	40,0
	Satisfaction with sports and fitness activities:				
.		n	%	n	%
.	Completely satisfied	48	35,3	75	35,7
.	Somewhat satisfied	71	52,2	103	49,1
.	Not satisfied	17	12,5	32	15,2
	How much do you independently engage in sports, health, and self-development per week?				
.		n	%	n	%
.	1-2 times	76	55,9	126	60,0
.	3-4 times	33	24,3	38	18,1
.	Not busy	27	19,8	46	21,9
	How is your physical condition?				
.		n	%	n	%
.	Good	48	35,3	53	25,2
	Satisfactory	5	4	1	5

.		6	1,2	12	3,3
.	Unsatisfactory	32	23,5	45	21,4
	Assessing knowledge about the effects of physical activity on functional status and health:				
.		n	%	n	%
.	"Excellent"	20	14,7	40	19,0
.	"Good"	74	54,4	106	50,5
.	"Satisfactory"	34	25,0	47	22,4
.	"Unsatisfactory"	8	5,9	17	8,1
	How you feel after your sports and fitness training:				
.		n	%	n	%
.	Bad	12	8,8	23	11,0
.	Good	95	69,9	149	71,0
.	Excellent	29	21,3	38	18,0
	The main reasons affecting your condition (feeling) are:				
.		n	%	n	%
.	Low level of functional capabilities	31	22,8	46	21,9
.	Low level of health status	63	46,3	80	38,1
.	Low level of physical fitness	42	30,9	84	40,0

The greatest interest in sports and health, self-development arises from:					
.		n	%	n	%
.	Sports achievements	13	9,6	24	11,4
.	The impact of physical training on health	74	54,4	108	51,4
.	The relationship between health status and educational success	49	36,0	78	37,1
Does sports and health, self-development strengthen health?					
.		n	%	n	%
.	Agree	129	94,8	185	88,1
.	Hard to say	5	3,7	18	8,6
.	Disagree	2	1,5	7	3,3
Which form of acquiring health knowledge do you think is most important for you?					
.		n	%	n	%
.	Self-development	62	45,6	87	41,4
.	Health lecture	31	22,8	73	34,8
.	Watching wellness programs	43	31,6	50	23,8

When asked about their willingness to engage in physical activity, only 5.9% of boys and 17.1% of girls answered “always”. 67.5% of boys are ready to exercise “sometimes”, while a third of boys and girls are completely satisfied with their sports and health activities, 12.5% of boys and 15.2% of girls are not at all satisfied. 19.8% of boys and 21.9% of girls do not independently

engage in any type of physical activity, but only 24.3% of boys and 18.1% of girls engage in them regularly. 23.5% of boys and 21.4% of girls consider their physical condition unsatisfactory, and 8.8% and 11%, respectively, assess the negative impact of physical education classes on their functional state and health, while 46.3% of boys consider the main reason for their poor health to be a low level of general health, and 40% of girls consider it to be a low level of physical fitness. 54.4% of young men and 51.4% of young women express great interest in sports and health-improving activities, the impact of physical exercise on health, and the majority of young men and women who participated in the survey agree that sports and health-improving activities can strengthen health and subjectively assess the level of knowledge about the functional state and health effects of physical exercise as "good", while at the same time being considered the main form of acquiring knowledge about health culture (45.6% of young men and 41.4% of young women, respectively).

When assessing students' responses to the basic principles of proper nutrition, it was found that only 9.5% of boys and 26.2% of girls adhere to the correct ratio of calories for nutrition, and about 15% of boys and girls try to replenish the energy consumed, taking into account the direction of the applied loads, which indicates a low level of competence in the issues of the compatibility of nutrition with certain physical exercises (Table 3).

Table 3

Results of a survey on students' lifestyle (diet)

/N	QUESTIONS/ANSWER OPTIONS	BOYS (N=136)		GIRLS (N=210)	
	Maintaining calorie intake:				
.		n	%	n	%
.	Yes	13	9,5	55	26,2
.	Sometimes	64	47,1	84	40,0
.	No	59	43,4	71	33,8
	Compatibility of consumed products with training loads:				
.		n	%	n	%

.	Yes	8	5,9	11	5,2
.	Sometimes	13	9,6	24	11,4
.	No	115	84,5	175	83,3

The questionnaire on subjective assessment of students' health according to the Voytenko methodology showed an average score of 11.7 points for boys and 12.8 points for girls (Table 4).

Table 4

Results of subjective self-assessment of students' health, (X±m)

/N	**INDICATORS**	**BOYS (N=136)**		**GIRLS (N=210)**	
.	Scores	11,7±2,8		12,8±3,1	
.	Subjective self-assessment of health	n	%	n	%
.	Good	77	56,6	75	35,7
.	Satisfactory	44	32,4	113	53,8
.	Bad	12	8,8	17	8,1
.	Very bad	3	2,2	5	2,4

As can be seen from the table, the majority of young men (56.6%) who participated in the survey subjectively assessed their health as “good”, while the majority of girls (53.8%) assessed it as “satisfactory”. 2.2% of young men (3 people) and 2.4% of girls (5 people) assessed their health as “very bad”.

Thus, the results of the study show that most students have specific behavioral risk factors for the development of the disease. It was revealed that the low level of interest of students in various types of physical education and health-improving activities, the lack of special knowledge

and skills of students in self-organization of individual lessons, dissatisfaction with the content of the educational process in physical education.

At the second stage of the study, somatometric and physiometric indicators of physical education and sports students were determined, which is an important component of pedagogical management and feedback for correcting the scheme of physical education depending on individual characteristics, in particular, somatotype (Table 5).

Table 5

Results of somometric studies, (X±m)

C /N	INDICATORS	BOYS (N=136)		GIRLS (N=210)	
1	Height, cm	178,6±11,3		167,5±8,5	
2	Weight, kg	74,6±7,2		57,4±5,3	
3	BMI (chest circumference), cm	96,4±7,8		88,5±7,2	
4	BMI (body mass index), kg/m2	22,15±3,68		20,84±3,46	
5	BMI, level	n	%	n	%
6	Normal	98	72,1	114	54,5
7	Underweight	21	15,4	53	25,2
8	Overweight	16	11,8	41	19,4
9	Obesity-Fatty	1	0,7	2	0,9
1	Piñé index, level	n	%	n	%
1	High	3	2,2	4	1,9
1	Above average	62	45,6	146	69,5
1	Average	48	35,3	26	12,4
1	Below average	15	11,0	22	10,5
1	Low	8	5	12	5,

			,9		7

The study found that 15.4% of boys and 25.2% of girls tested were underweight, 11.8% of boys and 19.4% of girls were overweight, and 0.7% and 0.9% were obese.

At the same time, in the majority of those examined (in the majority), the Pinye's index of "body structure strength" is described as "above average" and "average". The importance of somatometric characteristics is important for individualizing physical education and health programs.

Table 6

Results of the study of indicators of the functional state of the cardiovascular system, (X±m)

/N	**INDICATORS**	**BOYS (N=136)**		**GIRLS (N=210)**	
	Heart Rate 1, beats/minute.	74,7±4,8		77,5±4,3	
	Heart Rate 2, beats/minute.	126,5±6,3		123,5±6,6	
	Heart Rate 3, beats/minute.	97,8±5,8		96,8±5,7	
	Rufye Index, relative unit	8,2±2,3		9,1±2,5	
	Rufye Index, degree	n	%	n	%
	High	5	3,7	11	5,2
	Higher than average	76	55,9	42	20,0
	Average	25	18,3	84	40,0
	Below average	16	11,8	52	24,8
	Low	14	10,3	21	10,0
	BP(arterial pressure)	119,6±7,6		111,5±7,5	
	BPsx	72,8±4,5		70,5±4,3	
	BPdx	128,5±12,3		125,0±11	

				,2	
	BPsyu	72,3±8,8		69,5±8,4	
	BPor	90,2±7,4		88,5±7,7	
	Reaction of AB to physical exertion	n	%	n	%
	Normatotonic	76	55,9	151	71,9
	Hypertonic	31	22,8	26	12,4
	Hypotonic	11	8,1	18	8,6
	Dystonic	18	13,2	15	7,1

For the screening examination of the main physiometric indicators, the characteristics of the functional state of the cardiovascular and respiratory systems of students, as well as integral indicators of the functional state of the body, were studied. The results of the study of the indicators of the functional state of the cardiovascular system are presented in Table 6.

In most of the examined, the heart rate at rest did not go beyond the age norms.

The response of the HRQoL, reflecting the level of physical labor activity, to physical load and the speed of its recovery was characterized by regular changes. In most of the boys participating in the survey, the level of the Rufye index was determined as “above average” (55.9%), and in girls - as “average” (40%). Girls were distinguished by a lower level of physical labor activity than boys.

When studying the indicators of arterial pressure (BP) at rest and after exercise, it was found that 22.8% of boys and 12.4% of girls were hypertensive, 8.1% of boys and 8.6% of girls were hypotonic, and 13.2% and 7.1%, respectively, had dystonic reactions to dosed physical exertion, which indicates the presence of a malfunction of the cardiovascular system and regulatory mechanisms of students. Abnormal and non-normalized BP reactions to exercise require individual solutions in the selection and sequence of physical exertion in physical training and health-improving activities.

The studied indicators of the functional state of the respiratory system reflect the general aerobic capacity (Barbell test), as well as the body's reserve capabilities in conditions of hypoxia (Genchi test). With regular physical education and sports and increasing the general physical

fitness of the body, these indicators improve. The level of breath holding during breathing in most of the examined young men was “above average” (55.1%), and in girls it was “average” (45.7%), the time was 62.2 and 49.5 seconds, respectively (Table 7).

Table 7

Results of the study of indicators of the functional state of the respiratory system, (X±m)

/N	INDICATORS	BOYS (N=136)		GIRLS (N=210)	
1	Barbell pattern, second	62,2±8,6		49,5±8,2	
2	Barbell pattern, level	n	%	n	%
3	High	32	23,5	32	23,5
4	Higher than average	75	55,1	75	55,1
5	Medium	16	11,8	16	11,8
6	Below than average	9	6,7	9	6,7
7	Low	4	2,9	4	2,9
8	Genchi pattern, second	34,8±6,1		28,3±5,6	
9	Genchi pattern, level	n	%	n	%
10	High	11	8,1	11	8,1
11	Higher than average	68	50,0	68	50,0
12	Medium	32	23,5	32	23,5
13	Below than average	22	16,2	22	16,2
14	Low	3	2,2	3	2,2

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The average result of the hypoxic test with breath-holding during breathing in boys is 34.8 and in girls 28.3 seconds, respectively; “above average” prevails in boys, and “below average” and “average” in girls. The level of functional status as an integral indicator has significant gender differences (interpretations). Perhaps this can be explained by its greater significance in girls than in young men (Table 8).

Table 8

Results of the study of integral and functional indicators of the organism, (X±m)

/N	INDICATORS	BOYS (N=136)		GIRLS (N=210)	
	FHD (functional status level), relative unit	0,59±0,28		0,63±0,36	
	FHD, level	n	%	n	%
	High	27	19,9	27	19,9
	Higher than average	29	21,3	29	21,3
	Medium	35	25,7	35	25,7
	Below average	31	22,8	31	22,8
	Low	14	10,3	14	10,3
	Baevsky's adaptive potential, points	2,41±0,53		2,03±0,42	
	Baevsky's adaptive potential, level	n	%	n	%
	Satisfactory adaptation	110	80,9	110	80,9
	Strengthening of adaptation mechanisms	21	15,4	21	15,4
	Unsatisfactory adaptation	5	3,7	5	3,7
	Disturbance of adaptation	-	0	-	0

Thus, while 54.8% of girls are characterized by a “high” level and 30% by a “higher than average” level, among boys the level is “average”, “below average” and “above average” (25.7%,

22.8% and 21.3%, respectively), the value of "high" is found in only 19.9% of those examined. When calculating the adaptation potential, it was found that 15.4% of boys and 6.7% of girls had strained adaptation mechanisms, 3.7% of boys and 1.9% of girls had unsatisfactory adaptation, and 0.5% of girls (one) had "adaptation disorders".

Thus, the results of the questionnaire and determination of the criteria for the somatometric and physiometric characteristics of the participants of the pedagogical experiment indicate the differentiated significance of each of the studied indicators for assessing the "cut-off" picture of the current health and functional state of students and highlight the need to develop and implement methodological tools of pedagogical technology for individualizing health programs for students in physical education. At the same time, the indicators of optimal adaptation of muscles to load, functional shifts occurring in the phosphogenic, lactacid and oxidative systems are positive - primarily the indicators of cardiovascular, respiratory and autonomic nervous regulation of the body, which ensure muscle function.

CONCLUSION

It can be concluded that the practice of individualizing existing health programs in physical education proves to be significantly effective in increasing the physical fitness and motivation of students. Educational institutions should consider incorporating individualized approaches into physical education curricula to optimize student health outcomes.

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