

# FORMATION OF STUDENTS' HEALTH CULTURE IN THE PROCESS OF PHYSICAL EDUCATION AND HEALTH RECREATION ACTIVITIES

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## ABSTRACT

**The aim:** To check the effectiveness of the methodology for the formation of students' health culture in the process of their physical education and health recreation activities

**Materials and methods:** The following methods were used to achieve the aim: analysis, synthesis and generalization of literary sources, pedagogical observation, questionnaires, testing, pedagogical experiment, methods of mathematical statistics. 368 students took part in the ascertaining experiment, 93 students were involved in the formative experiment (52 - experimental group, 41 - control group).

**Results:** The existing level of health culture formedness in students was revealed to be insufficient, which stipulated the development and substantiation of the methodology for the formation of students' health culture in the process of their physical education and health recreation activities.

**Conclusions:** The implementation of the methodology for students' health culture formation into the educational process contributed to an increase in the number of students with a high level of health culture and the level of motivation for a healthy lifestyle. The level of physical fitness of the experimental group students significantly improved during the experiment. All this confirms the effectiveness of the developed methodology.

**KEY WORDS:** students, physical education, health, health culture, health recreation activities

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## INTRODUCTION

The problem of formation of students' health culture in higher educational institutions (HEIs) in the process of their physical education and health recreation activities finds its imprint in the psychological and pedagogical literature and occupies a leading place in the general complex of scientific research on health [1, 2]. This is due to the fact that a person's working capacity, well-being, intensity and productivity of work depends on the state of his / her health. In addition, the satisfaction of a person's need for creative self-realization depends crucially on his / her health, which is one of the most important prerequisites for effective professional activities. The lack of priority for health culture formation as a leading factor in its preservation and promoting occupies one of the main places among the reasons for the decline in

students' health [3, 4]. In this regard, the improvement of the higher education system through its modification with modern systems of health strengthening and formation as an important factor in the creative development of the student's personality acquires special importance.

The analysis of a number of scientific sources [5, 6] indicates that during the course of study, most students of HEIs do not experience significant positive changes in the individual level of health in general and health culture formation in particular. This fact can be explained by the insufficient organization of work on health culture formation and consideration of the individual characteristics of students during such training sessions. Attempts to use physical education as a means of health improvement without realizing

the need for self-education create only prerequisites for the modernization of the process of forming a person's physical development. Otherwise, it is impossible to create a holistic system of health culture formation in an individual. Therefore, currently the problem of forming, preserving and protecting the health of youth in Ukraine is considered from the standpoint of its relevance as a factor of national security and a strategic goal of the state's development, becoming one of the most important directions of national policy in the conditions of the Covid-19 epidemic and the large-scale war.

## THE AIM

The aim is to check the effectiveness of the methodology for the formation of students' health culture in the process of their physical education and health recreation activities.

## MATERIALS AND METHODS

The research was conducted at Zhytomyr Ivan Franko State University in 2020-2022. 368 (98 men, 270 women) students took part in the ascertaining experiment (2020). The formative experiment lasted one academic year (beginning of the experiment - September 2021, end - May 2022) and involved 93 students (52 - experimental group (EG), 41 - control group (CG)).

The following research methods were used to achieve the aim: analysis, synthesis and generalization of literary sources, pedagogical observation, questionnaires, testing, pedagogical experiment and methods of mathematical statistics. The analysis, synthesis and generalization of scientific literature were carried out to characterize the problem of forming health culture among students of HEIs in the process of their physical education and health recreation activities. We analyzed 15 sources on the topic of the article; most of them are 2019-2021 editions from the scientometric databases PubMed, Scopus, Web of Science Core Collection and others. The observations, questionnaires and testing were conducted to identify the level of students' health culture formedness in the process of physical education and health recreation activities.

The questionnaire was used to obtain subjective information related to the formation of students' health culture, which cannot be obtained by other research methods. The ascertaining stage provided for the application of the author's methodology, which contains 16 questions and concerns the determination of the level (high, average or low) of students' self-assessment of their own health culture by various factors (the level of physical development, physical fitness, adherence

to healthy lifestyle, etc.) The students who joined the Faculty of History, the Faculty of Physics and Mathematics as well as the Faculty of Natural Sciences in 2020 (n = 368) took part in the survey.

The formative stage involved the usage of two questionnaires: the first one was used to study the dynamics of the level of students' health culture during the experiment; the second one was aimed at determining the students' motivational factors for the formation of health culture. The first questionnaire contained 20 questions, each of which was evaluated in 3, 4, 5 points, respectively, corresponding to low, average and high levels of health culture formedness according to motivational, cognitive and activity components. The assessment of students' answers in the first questionnaire was carried out by the point-based method, as high, average and low. High score corresponded to 82-100 points, average - 74-81, low - 60-73. A high score characterizes the student's perfect level of knowledge, skills and abilities of a healthy lifestyle, the ability to analyze and interpret the peculiarities of fitness and health recreation activities and factors affecting the quality of health, the ability to set tasks and find means of their implementation in achieving a positive result in health culture formation. An average score characterizes the situational possession of the algorithm for building an effective system of health culture formation, occasional manifestations of the ability to apply the acquired knowledge, skills and abilities during fitness and health recreation activities, partial ability to implement the tasks of health culture formation. A low score characterizes the lack of mastery of the algorithm for building an effective system for health culture formation, the lack of ability to apply the acquired knowledge, skills and abilities during fitness and health recreation activities, not formed ability to implement the tasks of health culture formation. The first year students of the Faculty of Physics and Mathematics who entered the HEI in 2021 took part in the survey during the formative experiment (EG: men = 23, women = 29; CG: men = 21, women = 20). The EG and the CG were formed without any selection criterion, according to the formation of the faculty's study groups i. e. the first two groups were included in the EG, the third and fourth - in the CG. The second questionnaire was used to diagnose the motivational orientation for health culture formation in the EG students (n = 52, men - 23, women - 29), which included a list of motivational factors (8 factors) for each of which students had to give one answer from two options "yes" or "no". The questionnaire was anonymous, which increased the reliability of obtaining true results.

The purpose of the pedagogical experiment was to justify the methodology for health culture formation in

the process of physical education and health recreation activities as well as to check its effectiveness.

The health culture is an integrative personal formation, which includes socially and professionally significant life values and value orientations of the individual, based on individual knowledge about the essence of health, ways and methods of its formation, preservation and strengthening. Health culture of students of HEIs performs value-oriented, regulatory, prognostic and transformative functions. One of the most important directions of health culture formation in students is their involvement in fitness and health recreation activities, which is designed to form a careful attitude to their own health. Therefore, systematic physical exercises that form a healthy lifestyle, both during the academic training process in physical education and during extracurricular fitness and health recreation activities, are relevant now. Taking into account the findings of many scientists and based on the results of our own research, we substantiated the author's methodology for health culture formation in the process of physical education and health recreation activities. The essence of the author's methodology is the formation of students' knowledge, skills, practical abilities in the formation, preservation and promotion of health in the process of educational and future professional activities, as well as in the formation of their strong motivation for a healthy lifestyle and regular fitness and health recreation activities. The content of the author's methodology was aimed at deepening students' knowledge of health culture, the main factors of a healthy lifestyle, studying various means of fitness and health recreation activities, the ability to assess the level of their own health, body structure and physique formation, being able to build a program of motor activities, optimal diet and sleep, rehabilitation and leisure activities, mastering the skills of control and self-control over their own health, etc. The author's methodology was introduced into the academic training process of physical education of students of pedagogical specialties in Zhytomyr Ivan Franko State University. The implementation of the methodology was carried out both during physical education training sessions (one session per week) and during extracurricular physical education training sessions (two sessions per week). The training sessions were conducted by a physical education instructor. All training sessions contained both a practical part (performance of physical exercises) and a theoretical part (mini-lectures, conversations, discussions, keeping a health diary). The duration of the implementation phase of the author's methodology is one academic year. The experiment involved 100 % of the first year students of the Faculty of Physics and Mathematics who joined it

in 2021 (n = 98) and were assigned to the main educational department.

The effectiveness of the methodology for health culture formation in the process of physical education and health recreation activities was evaluated according to motivational, cognitive and activity components at three levels (high, average, low). A high level of health culture indicates that students have developed an active, demanding attitude to health; they show high activity, initiative; act on inner conviction; are engaged in physical education and health recreation activities based on deep knowledge about their health. An average level is characterized by students' insufficiently active attitude to health; they do not systematically engage in physical education and health recreation activities. Measures aimed at strengthening the body are carried out periodically, without taking into account individual characteristics. A low level describes students who have a passive attitude to their health. They do not strive for personal health improvement, believing that they are unable to change anything themselves. They are not used to self-observation and self-analysis, they do not feel the need for physical education and health recreation activities and the implementation of tempering measures. In addition, the effectiveness of the author's methodology was evaluated according to the level of students' physical fitness.

The methods of mathematical statistics were applied to correctly process the data and identify the difference between the studied indicators. The results of the questionnaires were evaluated in percentages. The results of students' physical fitness were reported as Mean $\pm$ SD. The authenticity of the difference between the indicators was determined with the help of the Student's t-test. The statistical significance was set at  $p < 0.05$ . All statistical analyses were performed with the SPSS software, version 21.

This research has been complied with all the relevant national regulations and institutional policies, and has followed the tenets of the World Medical Association Declaration of Helsinki - ethical principles for medical research involving human subjects. All participants agreed to participate in the research.

## RESULTS

A student's way of life is nothing but a way of integrating their needs and corresponding forms of activities. The structure of the way of life is revealed in the relations of subordination and coordination between different types of activities. This is manifested in the distribution of the time budget between types of life activities, giving preference to certain types of work and rest. A

**Table I.** Students' subjective assessment of the factors of their own health culture (n = 98 men, 270 women; number of people / %)

Factors of health culture	Gender	Students' assessment of the factors of their own health culture		
		High	Average	Low
Physical working capacity	men	9 / 9.2	37 / 37.6	52 / 53.1
	women	17 / 6.3	129 / 47.8	124 / 45.9
Functional status of the body	men	8 / 8.2	29 / 30.0	61 / 62.2
	women	15 / 5.6	119 / 44.1	136 / 50.3
Physical development	men	7 / 7.2	37 / 37.7	54 / 55.1
	women	16 / 5.9	123 / 45.6	131 / 48.5
Physical fitness	men	9 / 9.2	33 / 33.7	56 / 57.2
	women	14 / 5.2	118 / 43.7	138 / 51.1
Body posture and organization of the body	men	8 / 8.2	34 / 34.6	56 / 57.2
	women	22 / 8.2	131 / 48.5	117 / 43.3
Health status	men	11 / 11.2	37 / 37.7	50 / 51.1
	women	27 / 10.0	125 / 46.3	118 / 43.7
Resistance to stress	men	7 / 7.2	26 / 26.5	65 / 66.3
	women	16 / 5.9	98 / 36.3	156 / 57.8
Motor activity	men	12 / 12.2	38 / 38.8	48 / 49.0
	women	29 / 10.7	132 / 48.9	109 / 40.4
Sleep pattern and its quality	men	16 / 16.3	52 / 53.1	30 / 30.6
	women	26 / 9.6	138 / 51.1	106 / 39.3
Dietary pattern and its quality	men	11 / 11.2	42 / 42.9	45 / 45.9
	women	21 / 7.8	143 / 52.9	106 / 39.3
Hygiene and everyday life	men	13 / 13.2	38 / 38.8	47 / 48.0
	women	19 / 7.0	125 / 46.3	126 / 46.7
Smoking	men	- / -	14 / 14.3	84 / 85.7
	women	2 / 0.7	19 / 7.0	249 / 92.3
Alcohol abuse	men	- / -	17 / 17.3	81 / 82.7
	women	- / -	3 / 1.1	267 / 98.9
Healthy lifestyle	men	11 / 11.2	38 / 38.8	49 / 50.0
	women	31 / 11.5	134 / 49.6	105 / 38.9
Rest, leisure	men	4 / 4.1	27 / 27.6	67 / 68.4
	women	13 / 4.8	117 / 43.3	140 / 51.9
Motivation to take care of one's own health	men	5 / 5.1	29 / 29.6	64 / 65.3
	women	17 / 6.3	139 / 51.5	114 / 42.2

student can shape his / her way of acting and thinking having a certain worldview. Life sustaining activities of students are characterized by partial irregularities and chaotic organization: non-compliance with the dietary regime, systematic lack of sleep, insufficient motor activity, little time spent in the fresh air, abuse of smoking, alcoholic beverages, etc. The students' survey conducted at the beginning of the ascertainment experiment showed that the majority of students, both men and women, have a low assessment of their own health culture (Table I).

Subjective assessment of health culture factors by students indicates low important vital indicators, namely: physical working capacity, functional state of the body, physical development, physical fitness, health status (men - 51.1-62.2 %, women - 43.7-51.1 %). More than 50 % of male students and 38.9 % of female ones do not adhere to a healthy lifestyle, more than 80 % of both men and women abuse smoking and alcohol. More than 40 % do not have adequate sleep and rational nutrition; more than 60 % rated their level of stress resistance as low. This indicates that more than 50% of students are aware that

**Table II.** The dynamics of health culture formation among students during the formative experiment (EG: men = 23, women = 29; CG: men = 21, women = 20; %)

Level of health culture	Experimental group				Control group			
	Before the experiment		After the experiment		Before the experiment		After the experiment	
	men	women	men	women	men	women	men	women
High	8.7	6.9	21.7	20.7	14.3	15.0	14.3	10.0
Average	39.1	27.6	56.6	48.3	38.1	40.0	52.4	45.0
Low	52.2	65.5	21.7	31.0	47.6	55.0	33.3	45.0

**Table III.** Motivational factors that shape the health culture of the EG students in the process of their physical education and health recreation activities (n = 52, men - 23, women - 29; number of people / %)

Motivational factors	Gender	Before the experiment	After the experiment	Difference
The desire to have a good body posture	men	8 / 34.8	19 / 82.6	11 / 47.8
	women	9 / 31.0	21 / 72.4	12 / 41.4
The desire to be healthy	men	5 / 21.7	14 / 60.9	9 / 39.2
	women	7 / 24.1	17 / 58.6	10 / 34.5
The example of colleagues and public opinion	men	2 / 8.7	9 / 39.1	7 / 30.4
	women	4 / 13.8	13 / 44.8	9 / 31.0
Responsibility and discipline	men	7 / 30.4	13 / 56.5	6 / 26.1
	women	8 / 27.6	15 / 51.7	7 / 24.1
The example of a physical education teacher	men	2 / 8.7	8 / 34.8	6 / 26.1
	women	3 / 10.3	8 / 27.6	5 / 17.3
Health problems	men	3 / 13.0	9 / 39.1	6 / 26.1
	women	5 / 17.2	9 / 31.0	4 / 13.8
Attractiveness of sports facilities and equipment	men	4 / 17.4	7 / 30.4	3 / 13.0
	women	7 / 24.1	12 / 41.4	5 / 17.3
Parents	men	3 / 13.0	4 / 17.4	1 / 4.4
	women	6 / 20.7	8 / 27.6	2 / 6.9

their physical condition and health is insufficient for the full implementation of their educational and life-sustaining activities. At the same time, the vast majority of students (65.3% of men and 42.2% of women) did not show interest in the proposed ways to improve their health. All this is a consequence of the imperfection of the development of the motivational sphere, value orientation and social attitudes of the individual towards a healthy lifestyle.

The tasks of physical education and health recreation activities in HEIs are aimed at reducing the negative consequences of the educational load, ensuring a sufficient amount of motor activity of students and training them in various types of motor activity, forming a system of knowledge on the methodology of independent physical exercises, forming a motivational and value attitude to the formation of a healthy lifestyle. This determined the substantiation and development of our author's methodology for students' health culture formation in the process of their physical education and health recreation activities.

When developing the author's methodology, we proceed from the fact that solving the problem of personality development is possible only under the condition of a holistic approach to physical education, which determines: a) the unity of spiritual and physical education; b) the unity of goals and orientation of educational training sessions as well as physical education and health recreation activities. In this regard, it is necessary to emphasize the educational and instructional orientation of physical education, that is, the maximum psychological and pedagogical orientation of all the methods used, on the education and formation of moral, organizational-management, physical culture and sports as well as motor activity of students.

To solve this aim, we used the practice of involving students in the joint management of the educational process. In such a case, we assumed that students have the power to choose the type of physical education and sports training sessions for the development and improvement of both physical and psychological



**Table IV.** Dynamics of physical fitness of male students during the formative experiment (Mean  $\pm$  SD; EG = 23, CG = 21)

tests	groups	Before the experiment	After the experiment	Rate of growth	The validity of the difference	
					t	p
100 m run (s)	EG	15.46 $\pm$ 0.71	14.17 $\pm$ 0.83	0.89	2.16	<0.05
	CG	15.33 $\pm$ 0.81	15.24 $\pm$ 0.76	0.09	1.32	>0.05
Pull-ups on the horizontal bar (times)	EG	6.82 $\pm$ 0.83	9.72 $\pm$ 1.04	2.90	2.87	<0.01
	CG	6.07 $\pm$ 0.92	7.23 $\pm$ 0.91	1.16	1.71	>0.05
Push-ups (times)	EG	30.64 $\pm$ 2.17	39.17 $\pm$ 2.32	8.53	2.90	<0.01
	CG	30.91 $\pm$ 2.43	32.74 $\pm$ 3.51	1.83	1.39	>0.05
Standing long jump (cm)	EG	217.18 $\pm$ 1.96	228.14 $\pm$ 1.69	10.06	2.52	<0.05
	CG	219.04 $\pm$ 1.72	222.68 $\pm$ 1.71	3.64	1.51	>0.05
Lifting torso to the sitting position over 1 minute (times)	EG	30.26 $\pm$ 1.69	38.94 $\pm$ 1.76	8.68	2.83	<0.01
	CG	31.12 $\pm$ 1.83	32.51 $\pm$ 1.75	1.39	1.48	>0.05
4 x 9 m shuttle run (s)	EG	10.78 $\pm$ 0.95	9.43 $\pm$ 0.87	1.35	2.59	<0.05
	CG	10.61 $\pm$ 0.89	10.17 $\pm$ 0.92	0.44	1.57	>0.05
Torso leaning forward (cm)	EG	9.73 $\pm$ 0.91	14.86 $\pm$ 0.89	5.13	2.45	<0.05
	CG	9.98 $\pm$ 0.88	13.54 $\pm$ 0.91	3.56	2.25	<0.05

Legend: Mean: arithmetical average; SD: standard deviation; t: t-test value, p: the significance of the difference between the indicators before and after the experiment

**Table V.** Dynamics of physical fitness of female students during the formative experiment (Mean  $\pm$  SD; EG = 29, CG = 20)

tests	groups	Before the experiment	After the experiment	Rate of growth	The validity of the difference	
					t	p
100 m run (s)	EG	18.38 $\pm$ 1.17	17.13 $\pm$ 1.14	1.25	2.28	<0.05
	CG	18.06 $\pm$ 1.13	17.51 $\pm$ 1.08	0.55	1.72	>0.05
Push-ups (times)	EG	8.41 $\pm$ 1.74	14.57 $\pm$ 1.34	6.16	3.84	<0.001
	CG	9.13 $\pm$ 1.57	10.25 $\pm$ 1.52	1.07	1.49	>0.05
Standing long jump (cm)	EG	163.27 $\pm$ 7.92	176.68 $\pm$ 7.61	13.41	2.63	<0.05
	CG	164.58 $\pm$ 7.74	167.13 $\pm$ 7.72	2.55	1.49	>0.05
Lifting torso to the sitting position over 1 minute (times)	EG	26.25 $\pm$ 2.61	37.26 $\pm$ 2.73	11.01	3.14	<0.01
	CG	25.67 $\pm$ 2.83	29.85 $\pm$ 2.78	4.18	1.85	>0.05
4 x 9 m shuttle run	EG	11.98 $\pm$ 0.97	10.81 $\pm$ 0.89	1.17	2.38	<0.05
	CG	11.77 $\pm$ 0.84	11.06 $\pm$ 0.98	0.71	1.67	>0.05
Torso leaning forward (cm)	EG	12.93 $\pm$ 0.92	17.21 $\pm$ 0.87	4.28	2.31	<0.05
	CG	13.16 $\pm$ 0.86	15.54 $\pm$ 0.95	2.38	1.97	>0.05

Legend: Mean: arithmetical average; SD: standard deviation; t: t-test value, p: the significance of the difference between the indicators before and after the experiment

qualities that correspond to their inclinations, interests and requirements of future professional activities. The leading idea of health culture formation by students in the process of their physical education and health recreation activities was to promote the formation of pedagogical components during training sessions, which is an integral, multi-level subsystem united by commonness of goals, tasks and unity of functions. Therefore, the realization of the aim of forming a high level of students' health culture requires the definition of a meaningful resource with the number of pedagogi-

cal components in the following sequence: motivational, cognitive and activity.

The motivational component involved the formation of an attitude among students to ensure a high level of health culture in the process of their professional and creative development as well as future professional activities.

The cognitive component provided for the formation of valeological competence, which is manifested in the mastery of a system of knowledge regarding the formation, preservation and strengthening of personal health,

the formation of an optimistic worldview and world perception of students towards physical education and health activities as well as keeping a healthy lifestyle.

The activity component provided for systematic regular physical education and health recreation activities; the presence of positive dynamics of functional readiness in future specialists, bringing the body composition closer to model indicators, ensuring the optimal physical status of the individual, which determines the achievement of a certain level of physical qualities and involvement in a healthy lifestyle.

The developed methodology for health culture formation meets the requirements of the state policy in the field of physical education of young people; contributes to the modernization of traditional and the development of new forms and methods of health culture formation; provides for: preserving and multiplying sports traditions of the university; continuous study of students' interests as well as their motivational and value attitudes towards motor activity; formation of civic self-awareness and behavior of students, their readiness for dignified service to society and the state; creation of optimal material and technical conditions for the development and self-realization of students; forming future specialists' needs and skills to conduct preventive measures for the purpose of preventing antisocial behavior, humanizing and democratizing the style of communication and interaction of teachers and students with the aim of forming their health culture.

The implementation of the author's methodology fundamentally changed the attitude of the students of the experimental group to health culture and physical exercises, contributed to the formation of their motivation and interest in physical education and health recreation activities. The criteria for the formation of students' health culture, in accordance with the defined components, were selected by us on the basis of the concept of health culture, which assumes that health culture is an important constituent component of general human culture, determined by the material and spiritual environment of society's vital activities, and is expressed in the system of values, knowledge, needs, abilities and skills for the formation, preservation and strengthening of health. Assessment of health culture of the experimental group students during the formative experiment according to motivational, cognitive and activity components showed the presence of a high level of formedness in health culture indicators (Table II).

The analysis of the dynamics of students' health culture formation during the formative experiment showed a significant difference between the EG and the CG. In particular, the number of male students with a high level of health culture increased by 13.0 % in the

EG, while there were no changes in the CG. The increase was 17.5 % in the EG and 14.3 % in the CG for men in terms of an average level. At the same time, there was a decrease by 30.5 % of male students with a low level of health culture in the EG, and only by 14.3 % in the CG. The increase of female students with a high level was 13.8 % in the EG, and only 5.0 % in the CG; with an average level of health culture in female students it was 20.7 % in the EG, and 5.0 % in the CG. The number of female students with a low level of health culture decreased by 34.5 % in the EG, and by 10.0 % in the CG at the end of the experiment. The obtained data allow us to state that motivation for health culture by means of physical education and health recreation activities among students can be successfully formed during systematic physical exercises.

The studies aimed at researching the phenomena of "students' health" and "students' attitude to their own health" show that they are characterized by a desire for independence, a search for social identification and the formation of a system of life values in accordance with their preferences. This age period is a very difficult and important stage of human development. A significant influence on the formation of a student's personality is exerted by the social environment: the environment in the HEI, fellow students, teachers, colleagues, etc. As the main factors influencing the care of one's own health, students noted: "the desire to have a good body posture" - 82.6 % of men and 72.4 % of women; "the desire to be healthy" - 60.9 % of men and 58.6 % of women; "responsibility and discipline" - 56.5 % of men and 51.7 % of women and others (Table III). Such motivational factors as "the example of a physical education instructor" are effective in 34.8 % of male students and 27.6 % of female ones, and "parents" encourage the formation of health culture in 17.4 % of male students and 27.6 % of female ones.

The obtained data showed that it is possible to significantly improve the manifestations of health culture factors among students in educational as well as physical education and health recreation activities by means of increasing the level of their motivation. In general, the conducted pedagogical experiment confirms the importance of forming students' motivation for fitness and health recreation activities, healthy lifestyle, which, in general, has a positive impact on the process of students' health culture formation.

Purposeful work on health culture formation contributes not only to the increase of life values, knowledge, needs, abilities and skills for the formation and strengthening of students' health, but also significantly affects the improvement of indicators of physical fitness. During the formative experiment, the EG male

students had significantly better results ( $p < 0.05-0.01$ ) on all physical fitness tests, while the CG ones only had reliable results in performing the "torso tilt forward" test (Table IV).

The best results were shown by male students of the EG during the performance of strength exercises, namely: the indicator increased by 2.9 times in pull-ups, by 8.53 times in push-ups, by 8.68 times in lifting torso to the sitting position over 1 minute ( $p < 0.01$ ). The results of the EG students increased by 10.06 and 5.13 cm, respectively in standing long jump, which characterizes speed and strength qualities, and torso leaning forward, which characterizes flexibility.

The EG female students also showed significant improvement in performance on the physical fitness tests at the end of the experiment. The female students of the CG, who were engaged according to the traditional system of physical education, did not manage to reliably improve the level of their physical fitness in any test (Table V).

The highest indicators of the EG female students were demonstrated in push-ups, the increase was 6.16 times ( $p < 0.001$ ); lifting torso to the sitting position over 1 minute - 11.01 times ( $p < 0.01$ ); standing long jump - 13.41 cm ( $p < 0.05$ ) and torso leaning forward - 4.28 cm ( $p < 0.05$ ). All significant changes in the indicators of physical fitness of students (both male and female in the EG) are due to systematic participation in fitness and health recreation activities (regular physical exercises both during physical education training sessions and during extracurricular independent activities) and compliance with healthy lifestyles. All this testifies to the effectiveness of the developed and implemented methodology for the formation of students' health culture.

## DISCUSSION

The problem of health culture formation is one of the central problems of modern times, which in the context of the general crisis of culture appears more multifaceted than in any separate scientific aspect [7, 8]. Modern science has more than three hundred definitions of the concept of "health". The definition adopted by the World Health Organization is widely known, according to which health is a state of complete physical, spiritual and social well-being, and not just the absence of diseases and physical defects [9]. H.L. Apanasenko [10] notes that health is expressed in a state that is closely related to such mechanisms of self-organization as resistance to the actions of pathogenic factors and the body's ability to overcome pathological processes. At the same time, health is characterized by plastic, energetic and information provision of self-organization

processes. S.L. Marja and A. Suvi [11] give a fundamentally new look at the definition of this term in his research. He considers health through the prism of three streams of information - sensory, verbal, structural and defines it as a state of external and internal balance of a person with himself / herself and the environment in spiritual, mental and physical aspects, as well as the ability to perform biological and social functions at a high level. That is why every student is ambiguous not only externally, but also internally: behavior, perception, thoughts, actions, character, reactions, etc. to various factors. In addition, the very phenomenon of his / her health is very complex in general human and individual being. Therefore, there is no doubt that health depends on the interaction of many factors of physical and mental, social, individual and natural influence.

The conclusions of many scientists [12, 13] indicate that health is the most important for a person, and the value attitude towards it is formed and develops throughout life and is conditioned by the level of health culture formation. In many studies, the priority direction of students' health culture formation is defined as their involvement in modern physical education and health recreation activities. Among the elements of personal physical culture included in the concept of health culture, according to the scientists [1, 2, 14, 15] are:

1. Knowledge in the field of physical culture: the effect of physical exercises on the main body systems; conducting and organizing self-monitoring of physical development and functional state of the body; hygiene of independent physical exercises; hygiene of work and rest, organization of sleep, dietary pattern, personal hygiene.

2. Ability and skills of performing physical exercises: organization and conduct of independent training sessions in physical exercises and sports; morning hygienic gymnastics, physical education minutes during the academic day, independent training sessions; organization and conduct of physical culture and health recreation events and leisure activities; moving and sports games in the fresh air, folk games and fun.

3. Motivational and value orientations in the field of physical education and a healthy lifestyle: the need and awareness of the need for physical perfection and self-education; treating one's health as the value of life.

The introduction of the author's methodology into the educational process contributed to an increase in the number of the EG students at the end of the experiment with a high level of health culture and a level of motivation for a healthy lifestyle. At the same time, the level of physical fitness of the EG students, both men and women, significantly improved during the experiment. All this confirms the effectiveness of



the developed methodology for students' health culture formation in HEIs in the process of their physical education and health recreation activities.

## CONCLUSIONS

1. A low level of health culture formedness was revealed in students of pedagogical specialties according to the results of their questionnaire at the ascertaining stage of the experiment. The level of self-esteem of students (both men and women) has low indicators for such factors as physical working capacity (53.1 %, 45.9 % respectively), functional state of the body (62.2 % and 53.3 %), physical development (55.1 % and 48.5 %), physical fitness (57.2 % and 51.1 %), health status (51.1 % and 43.7 %). More than 50 % of male students and 38.9 % of female students do not adhere to a healthy lifestyle, more than 80 % of both men and women abuse smoking and alcohol. At the same time, the vast majority of students (65.3 % of men and 42.2 % of women) did not show interest in the proposed ways to improve their health.
2. The implementation of the author's methodology contributed to improving the level of health culture of the EG students. Thus, in the EG the number of male students with a high level of health culture increased by 13.0 % and by 13.8 % among female students; with a low level - decreased by 30.5 % in male students and by 34.5 % in female ones. There were changes in

- the CG, but not as pronounced as in the EG. The level of motivation of the EG students improved during the experiment according to the following motivational factors: the desire to have a good posture by 47.8 % in men and 41.4 % in women, the desire to be healthy by 39.2 % in men and 34.5 % in women, the example of colleagues and public opinion by 30.4 % in men and 31.0 % in women and others. The level of physical fitness of the EG students (both men and women), in contrast to the CG, significantly ( $p < 0.05-0.01$ ) improved according to all studied indicators. The greatest influence of the author's methodology was found on the indicators of male students in pull-ups (by 2.9 times), in push-ups (by 8.53 times), in torso lifting (by 8.68 times), in standing long jump (by 10.06 cm). For female students - in push-ups (by 6.16 times), in torso lifting (by 11.01 times).
3. The implementation of the methodology for students' health culture formation into the educational process contributed to an increase in the number of students with a high level of health culture and the level of motivation for a healthy lifestyle. The level of physical fitness of the experimental group students significantly improved during the experiment. All this confirms the effectiveness of the developed methodology.
- Prospects for further research are aimed at improving the methodology for the formation of a healthy lifestyle culture of students of HEIs.

## REFERENCES

1. Kharisova N., Kharisova L., Smirnov I. et al. Physical culture as the basis of students' healthy lifestyle. *Georgian Med News*. 2015; (241): 68-72.
2. Hansen A., McGarry D., Johnson A., Roche M.A. The impact of an undergraduate students' culture on their learning about mental health: A scoping review. *Nurs Health Sci*. 2021; 23(2): 352-361. doi: 10.1111/nhs.12835.
3. Griban G., Lyakhova N., Tymoshenko O. et al. Current state of students' health and its improvement in the process of physical education. *Wiad. Lek*. 2020; 73(7): 1438-1447. doi: 10.36740/WLek202007124.
4. Pronenko K., Griban G., Dovgan N. et al. Students' health and its interrelation with physical fitness level. *Sport Mont*. 2019; 17(3): 41-46. doi: 10.26773/smj.191018.
5. Mozolev O., Bloschynsky I., Aliksieiev O. et al. Influence of modern fitness technologies on the state of health and development of motor abilities of 17-19-year-old female students. *J Phys Educ Sport*. 2019; 19(3): 917-924. doi:10.7752/jpes.2019.s3132.
6. Griban G., Kobornyk O., Terentieva N. et al. Formation of health and fitness competencies of students in the process of physical education. *Sport Mont*. 2020; 18(3): 73-78. doi: 10.26773/smj.201008.
7. Cogburn C.D. Culture, race, and health: Implications for racial inequities and population health. *Milbank Q*. 2019; 97(3): 736-761. doi: 10.1111/1468-0009.12411.
8. The Lancet Planetary Health. Promoting planetary health through culture. *Lancet Planet Health*. 2018; 2(12): e509. doi: 10.1016/S2542-5196(18)30266-3.
9. World Health Organization. Global action plan on physical activity 2018-2030: more active people for a healthier world. 2018. <https://www.who.int/publications/i/item/9789241514187> [date access 02.08.2022]
10. Apanasenko H.L. Individual health: Theory and practice. *Valeology*. 2006; 1: 5-12.
11. Marja S.L., Suvi A. Cultural competence learning of the health care students using simulation pedagogy: An integrative review. *Nurse Educ Pract*. 2021; 52: 103044. doi: 10.1016/j.nepr.2021.103044.

12. Prontenko K., Griban G., Aloshyna A. et al. The physical development and functional state as the important components of the students' health. *Wiad. Lek.* 2019; 72(12a): 2348-2353. doi: 10.36740/WLek201912115.
13. Mozolev O., Bloschynskiy I., Prontenko K. et al. Influence of fitness techniques integration on the development of physical qualities and morpho-functional state of adult females. *Human Movement.* 2021; 22(1): 57-65.
14. Griban G., Tymoshenko O., Arefiev V. et al. The role of physical education in improving the health status of students of special medical groups. *Wiad. Lek.* 2020; 73 (3): 534-540. doi: 10.36740/WLek202003125.
15. Machul M., Bieniak M., Chałdaś-Majdańska J. et al. Lifestyle practices, satisfaction with life and the level of perceived stress of Polish and foreign medical students studying in Poland. *Int J Environ Res Public Health.* 2020; 17(12): 4445. doi: 10.3390/ijerph17124445.

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**Conflict of interest:**

*The Authors declare no conflict of interest.*

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