

The influence of educational, physical cultural and healthy work on the formation of the health culture of master's students

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Abstract:

Purpose: To justify theoretically the model for the health culture of a student's personality with the system of criteria and indicators. To examine the organization of educational, physical cultural and healthy work at the university and their influence on the health culture of master's students.

Material: Complex of psychodiagnostic techniques and medical methods for determining the level of the health culture of a student's personality was used in the research. Respondents were 20 groups of master's students: 15 experimental groups in which the groups (E₁₋₁₀) were under the big influence of active factors, (E₁₁₋₁₅) under less influence, and also 5 control groups (C₁₋₅), who studied by traditional programs. The total number of studied master's students was 288 people. The research was conducted at the National Academy of National Guard of Ukraine in 2013-2018.

Results: The regularity of interrelations between the degree of active influence research factors on students and the level of their health culture was revealed. In the experimental groups E₁₋₁₀ higher indices were revealed than in the E₁₁₋₁₅ groups, in contrast to the C₁₋₅ control group, in which no significant deviations were observed. The evaluation of the results was calculated by Pearson's criterion χ^2 for statistical significance ($p \leq 0.05$).

Conclusions: Using the model for the health culture of personality with specific criteria and indicators allowed studying the influence of educational, physical cultural and healthy work at the university on the level of the health culture of master's students. Regularities were established: 1) the organization of educational, physical cultural and healthy work in the conditions of higher education positively influences on the formation of the health culture of master's students; 2) the level of a personality's health culture depends on the degree of active influence factors on it.

Keywords: health culture, model for the health culture, methods, regularities.

Introduction

The need to formation of the health culture of the younger generation is important for any country, regardless of the level of development of its health systems, education, etc. This problem is especially urgent for countries with developing economies. Last year's studies, conducted by the World Bank group, show trends in deteriorating health and maintaining a consistently high mortality rate in Ukraine (The World Bank, 2017). Medicine traditionally deals with the solution of health problems. In recent years, more and more prevention in preserving and improving health is given attention in the field of education. However, preserving and improving health primarily depends on the person himself, his understanding of the importance of individual health, as well as the desire to lead an active and healthy lifestyle, to be culturally healthy. In this regard, the importance of educational, physical cultural and healthy work is increasing. The organization of this activity in the education system becomes an integral part of the preparation of youth for the future life.

In the scientific literature the term "healthy lifestyle" was used for a long time (King, Mainous, Carnemolla, and Everett, 2009; Loef, and Walach, 2012), however, in recent years the concept "health culture" is increasingly encountered (Shim, Chang, and Dubbin, 2016; Lavizzo-Mourey, 2017). Health culture is an integral part of the culture of mankind, including the totality of knowledge of the philosophical, pedagogical, psychological and medical spheres; it enriches the spiritual, social, mental and physical life of the individual, contributes to the formation of a personal attitude to health and life and the understanding by man of paradigms of being (Melnyk, 2012).

The analysis of modern scientific literature and periodicals indicates that the influence of educational, physical cultural and healthy work at the university on the formation of the health culture of master's students

remains not studied. When studying this issue, it is necessary to take into account the multidimensionality of the health culture phenomenon.

Theoretical value and practical significance for studying the health culture phenomenon had scientific works in such aspects: social (Hunt, and Eisenberg, 2010; Torres, Steward, Strasser, Lyn, Serna, and Stauber, 2016), national (Bulger, 2015); in the field of health and medical care (Iwelunmor, Newsome, and Airhihenbuwa, 2014; Lavizzo-Mourey, 2017; Plough, 2014; Shim, Chang, and Dubbin, 2016). The relationship between education and youth health is disclosed in studies (Baker, Leon, Smith-Greenaway, Collins, Movit, 2011; Zavydivska O., Zavydivska N., and Khanikiants, 2016; Mandic, Wilson, Clark-Grill, and O'Neill, 2017), as well as the influence of ethnic, socio-psychological characteristics of personality on health (Simion, Mihaila, Cretu, and Rosu, 2010; Mirowsky, and Ross, 2017). The relationship between physical activity and life quality associated with youth health has been studied (Blacklock, Rhodes, and Brown, 2007; Spengler, and Woll, 2013). However, Gruber (2008), Deng, Castelli, Castro-Pinero, and Guan (2011) point to a serious problem of reducing the physical activity of student youth and the importance of active university intervention for adopting a healthy lifestyle for students for the rest of their lives. The system of activities of educational institutions for the formation of the health culture of the younger generation is presented in publications in which the author substantiated the methodological aspects of this problem (Melnyk, 2005), technologies and theoretical support of socio-pedagogical activity, integrated educational programs (Melnyk, 2012), monitoring of the health culture of schoolchildren (Melnyk, 2017).

The need for a society in a culturally developed, healthy, active personality and a low level of the formation of the health culture of the younger generation, decrease in physical activity and deterioration in the health of student youth generates obvious contradictions. This problem is becoming one of the key issues in higher education institutions.

In my opinion, a holistic and systematic approach to the organization of educational, physical cultural and healthy work at the university will help to overcome the fragmentation of the solution problem of individual health of young people and will contribute to the formation of health culture for students. In addition, a study of student health culture will provide analytical and prognostic support for their health status in educational institutions.

Objectives of the study: To justify theoretically the model for the health culture of a student's personality with the system of criteria and indicators. To study the influence of educational, physical cultural and healthy work at the university on the health culture of master's students.

Material and Methods

Participants. Respondents were 20 groups of master's students: 15 experimental groups in which the groups (E₁₋₁₀) were under the big influence of active factors, (E₁₁₋₁₅) under less influence, and also 5 control groups (C₁₋₅), who studied according to traditional programs. The total number of respondents was 288 people.

Organization of the Research. The research was conducted at the National Academy of National Guard of Ukraine for 5 academic years (2013-2018). The research consisted of three interrelated stages: 1) search-analytical; 2) experimental; 3) generalizing.

At the search-analytical stage, the model for the health culture of a student's personality is theoretically substantiated (Model). Model consists of structural and functional components that are characterized by: components of individual health; the main spheres of personality; academic achievements of students in preserving and improving health. These components together constitute a system of criteria with indicators that allow determining the overall level of the health culture of a student's personality. The graphic representation of Model is illustrated in Figure 1.

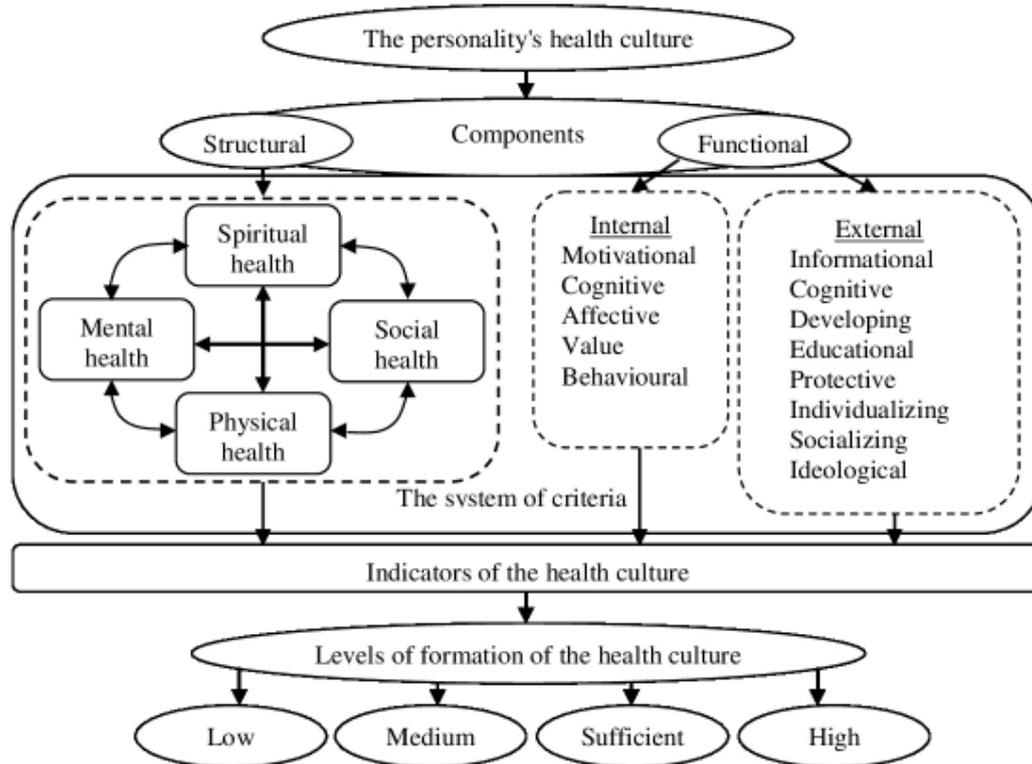


Fig. 1. The model for the health culture of a student's personality

Researches of the health culture of a student's personality do not require special equipment or adaptations and can be organized within the competence of the pedagogical staff of universities. The system of criteria and indicators of the health culture of the study is given in Table 1.

Table 1. The system of criteria and indicators of the health culture of a student's personality

The system of criteria		Indicators of the health culture	
Structural components	Physical health	Congenital malformations; dispensary registration; health group; medical group.	
	Mental health	Temperament; character (orientation); emotional sphere; motivation and cognitive activity.	
	Social health	Relationships with teachers, friends, family; psychological status in group.	
	Spiritual health	Interests; orientations; beliefs; values.	
Functional components	Internal	Motivational	Stimulation and motivation (education).
		Cognitive	Awareness and depth of knowledge on the preservation, improvement of health.
		Affective	Emotional state at school, at home and with friends.
		Value	Belief in the value of life and health, interests in the achievements of culture.
		Behavioural	Skills in safety and hygiene, self-regulation of behaviour.
	External	Academic achievements of students in preserving and improving health	
		Informational	Possession of information on basic principles, methods, conditions, means of the preservation and improvement of health.
		Cognitive	Cognitive activity for mastering one's own personal qualities, self-knowledge, self-improvement, creativity.
		Developing	Development (and harmony) of physical, mental, social, spiritual health.
		Educational	The presence of a civic position, the assimilation of public values, the existence of personal views, values, attitudes.
		Protective	Psycho-emotional state of a person, reflection, a sense of comfort, an adequate "I am an image".
		Individualizing	Preservation of its uniqueness, self-acceptance, self-respect, self-esteem.
		Socializing	Social status, assertiveness, sociability, social adaptation.
Ideological	A holistic perception of the phenomena and processes of the environment, the existence of a life strategy, the formation of "I am a concept".		

On the experimental stage two strategies of the organization of educational, physical cultural and healthy work with master's students were implemented.

Strategy-1 was implemented with students of experimental groups (E₁₋₁₀). It included educational work, providing for the implementation of a number of educational programs (physical education and physical training

methods, psychology of interpersonal communication, management psychology, the foundations of tactical medicine, pedagogy of higher education, etc.) with specific filling with those questions on the preservation and improvement of individual health, the formation of health culture. Programs of professional training of masters in military educational institutions provide for the presence of strong health, a high level of physical fitness of their graduates. In addition, these groups actively implemented the system of physical culture and health work, which included such types of out-of-class work: student tournaments, competitions, sports days, Olympiads, as well as independent classes of students in sports and fitness clubs. Thus, Strategy-1 is a system for the formation of the health culture for students, taking into account all the components of the personality's health culture.

Strategy-2 was implemented with students of experimental groups (E_{11-15}), who were under less influence of active factors. This restriction was due to the program of their professional training. With the students of these groups, there were no educational programs that dealt with the preservation and improvement of individual health, the importance of the health culture. However, in these groups a set of measures for physical culture and recreation activity was implemented. Thus, Strategy-2 is a set of measures aimed at the formation of the health culture for students and improving individual health.

Control groups (C_{1-5}) studied according to traditional programs. The students of these groups studied independently in sports and health-improving sections. Special events aimed at building a health culture were not conducted with them.

The presence of two strategies in the experiment allowed us to investigate the significance and effectiveness of various means on the formation of the health culture of student's personality, as well as to compare them with traditional programs for the preparation of master's students.

On the generalizing stage the influence of educational, physical cultural and healthy work at the university on the health culture of master's students was studied. The results of the study were analyzed and generalized. The most effective means of organizing educational, physical cultural and healthy work for forming youth health culture in the conditions of higher education were determined. It is established that educational, physical cultural and healthy work positively influences on the formation of students' health culture. The degree of active influence factors on students in the study was directly dependent and correlated with the level of their health culture.

Thus, the specified criteria and indicators of model for the health culture of a personality allowed us to use the methods of mathematical statistics to process the results of the research and establish certain regularities that allow us to choose the most effective means of organizing educational, physical cultural and healthy work on the formation of youth health culture in the conditions of higher education.

Statistical Analysis. The diagnosis of the health culture was carried out on the basis of sociological, psychological, pedagogical and medical methods as well as tools. The assessment of the results was carried out by qualimetric methods using the factor-criteria model, as well as nonparametric Pearson's criterion and Spearman's method.

The author has developed and verified a set of diagnostic methods for studying both individual components and the level of the personality's health culture in general (Melnyk, 2005).

To determine the changes in the indicators of the individual health of students the methodology "Class Health Passport" was used (Melnyk, 2005). This methodology is based on the systematization of the results of medical and psychological examinations of students, which are standardized and usually conducted by medical personnel in student clinics and psychologists in universities. 16 indicators characterize physical, mental, social and spiritual health. Each indicator of individual student's health had three levels, which were awarded point: 1 – low, 2 – medium, 3 – high. The level of individual health of the students is defined as the arithmetic dependence on the number of score points of indicators that they contain. The theoretical distribution of the result in score points can be from 0 to 48. Based on the distribution of the feature on the interval scale, we determine the level of individual student's health in accordance with the scores obtained: from 0 to 12 points – low, from 13 to 24 points – medium, from 25 up to 35 points – sufficient, from 36 to 48 points – high.

To determine the changes in the indicators of the main spheres of the students' personality such standardized, reliable and valid psychological methodologies and tests: the "Diagnostics of Student Motivation" (Rean and Yakunin, a modification by Badmaeva), "The Raven's Progressive Matrices", "Traditional Lüscher Color Test", The Rokeach Value Survey (RVS), the methodology "Type of behavioral activity" by Wasserman and Gumenyuk were used. The above defined 11 indicators characterize the main spheres of the personality: motivational, cognitive, affective, value and behavioural. Each indicator of the student's basic sphere of personality had three levels, which were awarded point: 1 – low, 2 – medium, 3 – high. The level of development of the main areas of the personality is defined as the arithmetic dependence on the number of score points of indicators that they contain. The theoretical distribution of the result in score points can be from 0 to 33. Based on the distribution of the feature on the interval scale, we determine the level of development of the student's basic spheres of personality in accordance with the scores received: from 0 to 8 points – low, from 9 to 16 points – medium, from 17 up to 24 points – sufficient, from 25 to 33 points – high.

To determine the changes in the indicators of the academic achievements in preserving and improving health the methodology by Melnyk was used. In the methodology, 33 indicators characterize the results of the

academic achievements of respondents in preserving and improving health, which represent informational, cognitive, developing, educational, protective, individualizing, socializing, ideological criteria. Each indicator of the academic achievements had three levels, which were awarded point: 1 – low, 2 – medium, 3 – high. The level of the academic achievements is defined as the arithmetic dependence on the number of score points of indicators that they contain. The theoretical distribution of the result in score points can be from 0 to 99. Based on the distribution of the feature on the interval scale, we determine the level of the academic achievements in accordance with the scores obtained: 0-59 points indicate a low level, a student does not have health improvement knowledge and skills, or their negative deviation is observed; 60-73 points indicate an medium level; a student acquired elementary health knowledge, but not everything is realized, his/her skills are characterized by a situational interest in the activity; 74-89 points indicate an sufficient level, a student has conscious and deep knowledge how to improve health, formed individual skills and abilities; 90-99 points indicate a high level, a student has a conscious, deep and systematic knowledge how to improve health, formed skills and abilities. The final assessment of the students was carried out according to 100-point system, taking into account the national scale (levels: unsatisfactory, satisfactory, good, excellent), the European ECTS scale (levels: F, FX, E, D, C, B, A). The characteristic of the assessment levels is adequate to the levels indicated above, which characterizes the scores in points.

Thus, we defined 17 criteria with 60 key indicators for them. Each of these indicators was assessed on a three-point scale, that is, it had three levels of indicators. The total number of all indicators was 180.

To determine the general level of the health culture of a student’s personality the choice of level intervals was based on the normal distribution of the feature on the interval scale and was also due to the characteristics of development of these components in students and the formation at them the basic competence on master's programs (Melnyk, 2017).

The factor-criteria model developed by the author made it possible to combine structural and functional components and the corresponding system of criteria, taking into account their specific significance for mathematical data processing (Melnyk, 2012).

The author's techniques listed above can be used by pedagogical and medical workers to study both individual indicators of the health status of students and the level of health culture in general, as well as to determine the level of physical activity of schoolchildren in physical education and sports.

Results

The diagnostic methods listed above made it possible to study the indicators of the formation of the health culture of master's student which were estimated at points. The points obtained in all indicators were summed up separately for each criterion and in general. These total points were transferred to levels, which allowed us to establish an individual level of formation of each component of the system of criteria of the health culture of the individual, the students’ level of their formation in general, as well as the level in the group.

A group of methods of mathematical statistics was used to substantiate the validity and reliability of the methods developed in the study: Pearson's criterion, which revealed differences in the distribution of criteria for health culture of the student's personality in experimental and control groups; Spearman's method, which helped to identify a correlation between these criteria; the factor-criteria model for assessing the levels of the formation of the personality's health culture (Melnyk, 2012), which made it possible to establish both the levels of development of each of the criteria and the level of the student's health culture as a whole on the basis of an integrated assessment; mathematical formulas for processing the results of expert assessment of the effectiveness of technology introduction and other methods of mathematical statistics for quantitative and qualitative analysis of the results obtained.

The research of the influence of active factors on students (Strategies 1 and 2) in accordance with the developed system of criteria and level indicators (high, sufficient, medium, low) was conducted. The general results of the study of student’s health culture as a percentage are given in Table 2.

Table 2. Summary table of results of the general level of the health culture of master's students

Level of the health culture	Number of students in the study groups (288 masters), %					
	Experimental groups E ₁₋₁₀		Experimental groups E ₁₁₋₁₅		Control groups C ₁₋₅	
	Strategy-1		Strategy-2		Traditional programs	
	expected	observed	expected	observed	expected	observed
High	55.5	51.7	33.3	35.1	29.9	22.8
Sufficient	33.9	37.3	49.7	42.9	32.3	42.1
Medium	9.9	8.4	15.1	16.1	33.0	23.5
Low	0.7	2.6	1.9	5.9	4.8	11.6
In all	100.0	100.0	100.0	100.0	100.0	100.0

The data obtained indicate that during the time of the experimental study, changes are observed in all the defined criteria and indicators. Changes occur not only in the experimental, but also in the control sample.

To prove research results statistical validity it is necessary to define p-meanings, after having calculated χ^2 . The calculations have been made on the grounds of two levels: expected and observed. To determine the

expected level, we referred to these methods research (Melnyk, 2017), having applied them to students in similar conditions to those of the experimental groups of our research.

Let us outline χ^2 sample calculation for groups E_{1-10} .

$$\chi^2 = \frac{(80 - 85)^2}{85} + \frac{(57 - 52)^2}{52} + \frac{(13 - 15)^2}{15} + \frac{(4 - 1)^2}{1} = 9,218 \quad \text{Eq. 1.}$$

Using table data of χ^2 allocation we calculate p-meanings for the number of clamping degree $(n-1)=3$. X^2 calculated value is between 7.815 and 9.348, that corresponds to the p-meaning interval between 0,05 and 0,025 ($p=0.027$), i.e. the result statistical validity has been proved ($p \leq 0.05$).

Similarly let us determine the results statistical validity:

- for experimental groups E_{11-15} – by $\chi^2=8.373$ $p=0.041$;
- for control groups C_{1-5} – by $\chi^2=7.833$ $p=0.0497$.

Confirmation of the statistical significance of the results of these changes ($p \leq 0.05$) allowed us to establish regularity: the organization of educational, physical cultural and healthy work in the conditions of higher education positively influences on the formation of the health culture of the youth.

In the experimental work we tried to study both the level of the formation of the students' health culture and the effectiveness of the influence of the strategies implemented on the development of the student's personality, and also to determine the effective means and conditions that must be provided to improve the level of the health culture of the students of master's students.

The analysis of the obtained data indicates that these changes were most pronounced in the experimental groups (E_1-E_{10}), in which the developed system was implemented in full (Strategy-1). It included educational work, a system of physical cultural, healthy work, as well as independent classes of students in sports, fitness.

Changes were less pronounced in groups ($E_{11}-E_{15}$), where it was partially introduced (Strategy-2). It included a set of measures for the physical cultural and healthy work of students.

Changes were slightly pronounced in the control groups (C_{1-5}) who studied according to traditional programs. The students of these groups studied independently in sports and health-improving sections.

This allowed us to establish regularity: the level of a personality's health culture depends on the degree of active influence factors on it.

Discussion

Reducing students' interest in physical education and sports has a negative influence on the health of young people. Educational masters programs do not allow solving problems in preserving and improving health, since they are professionally oriented. There is a need to develop new approaches to the organization educational, physical cultural and healthy work with master's students. In our opinion, the formation of the student's health culture in higher education institutions, regardless of profile, can and should become one of the most important tasks of a holistic system for the training of a future specialist.

The issues of conceptualization of culture, personality, and health are difficult and debatable. The combination of these categories together allows us to consider in their new aspect their essence and opens prospects for further studies.

Scientists have developed unique culture concepts (Shim, Chang, and Dubbin, 2016), the of personality concepts (Freud, 2010, Moreno, 2012), sports training concepts (Simion, Cretu, and Mihaila, 2010). The relationship between culture and personality and their influence on each other has been the subject of study driven mainly by psychoanalytically oriented anthropologists, psychologists, and psychiatrists. Markus and Kitayama say: «A cultural psychological perspective implies that there is no personality without culture; there is only a biological entity» (Markus, and Kitayama, 1998, p. 67). Cross-cultural studies of the five-factor model of personality (FFM) were conducted. It has been established that the structure of personality traits in a variety of cultures is universal, because it is biologically based (McCrae, 2002). The possibilities for building a personal profile in sports using the Five-Factor Personality Inventory (FFPI) have been studied (Mihăilescu, and Cucui, 2014).

Special scientific value and practical significance for the development of issues of the culture of individual health were scientific works that allowed us to take into account the social (Torres, Steward, Strasser, Lyn, Serna, and Stauber, 2016) and national (Bulger, 2015) characteristics of the formation of the health culture in the organization of this work at the university. The influence of culture and social environment on students' health was studied (Hunt, and Eisenberg, 2010). Some authors (Grevena, Chamorro-Premuzicb, Artech, and Furnhamc, 2008), examining the relationship between personality and health, point to the complexity of studying psychological mechanisms as well as the link between personality and health, which also confirms the relevance of our study and points to the need to study this problem. The study carried out by these scientists allows the creation of an integrated multistage model that shows how multiple traits can be integrated to joint impact on General Health.

The analysis of the works of the above-mentioned scientists allowed us to characterize the relationship between culture and health, as well as theoretically substantiate the model of the health culture of the student's personality with a system of criteria and indicators.

In studies (Melnyk, 2012) it is reported that a healthy lifestyle is a component of a personality's health

culture. Scientists have studied the importance and influence of a healthy lifestyle (Loef, and Walach, 2012), nutrition (Butnariu, 2017), physical activity (King, Mainous, Carnemolla, and Everett, 2009) on health. We can assume that there is a positive influence of educational, physical cultural and healthy work at the university on the level of the health culture of master's students, but this issue has not been studied, as well as the degree of factors of this influence.

Mirowsky and Ross argue that the educational level positively influences the social status of the personality and its health (Mirowsky, and Ross, 2017). The positive influence of educational technologies on the health of schoolchildren (Melnik, 2017) and students (Zavydivska O., Zavydivska N, and Khanikiants, 2016) were established. The relationship between education and youth health (Baker, Leon, Smith-Greenaway, Collins, and Movit, 2011), physical activity and life quality related to the health of young people (Blacklock, Rhodes, and Brown, 2007, Spengler, and Woll, 2013) was disclosed in the studies. This allows us to justify the positive correlation in our study, which is observed between the organization of educational, physical cultural and healthy work with master's students and the formation of the health culture.

The conducted studies (Maselli, Ward, Gobbi, and Carraro, 2018) made it possible to determine the indicators for studying the effectiveness of the influence of educational, physical cultural and healthy work at the university on the level of the health culture of master's students.

As a result of our studies, the dependence of the level of a personality's health culture on the degree of influence of active factors on it (educational, physical cultural and healthy work) in the process of studying at the magistracy was revealed.

Conclusions

In the study the model for the student's health culture with a system of criteria and indicators was theoretically justified and was practically tested. Various strategies for the organization of educational, physical cultural and healthy work at the university and their influence on health culture of master's students were considered.

Confirmation of the statistical significance of the results of the study allowed us to establish the following regularities: the organization of educational, physical cultural and healthy work in the conditions of higher education positively influences on the formation of the health culture of the students; the level of a personality's health culture depends on the degree of active influence factors on it. This allows us to recommend the developed strategies for the formation of the health culture of master's students in institutions of higher education in different countries.

The study does not exhaust all aspects of exploring the phenomenon of the health culture. Further studies we associate with the study of the phenomenon of health culture and the possibility of social management of this process for increasing physical activity and improving the health indicators of student youth.

Conflicts of interest

The author declares that there is no conflict of interest.

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