BIOMEDICAL AND BIOSOCIAL ANTHROPOLOGY
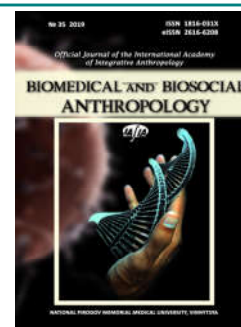
Official Journal of the International Academy of Integrative Anthropology

journal homepage: http://bba-journal.com

Regularities of the patterns of interdependence between characteristics of the functional state of the organism and indicators of the health status of students and their comprehensive assessment

Serheta I.V., Mostova O.P., Stoyan N.V., Panchuk O.Y., Olkhova I.V.
National Pirogov Memorial Medical University, Vinnytsya, Ukraine

An essential component of adequate prognostic assessment of the interdependence of the leading correlates of adaptive capacity and functional resources of the human organism is the use of factor analysis procedures. The purpose of the work is to establish the patterns of interdependence of the characteristics of the functional state of the organism and indicators of the health status of students and their complex assessment based on the use of factor analysis procedures. In the course of scientific researches were studied indicators of functional features of higher nervous activity, visual sensory system and somatosensory analyzer. Data on the communication and interdependence characteristics of the level of development of psychophysiological functions and indicators of the health status of students were subjected to statistical processing using the licensed standardized package "Statistica 6.1 for Windows" (license number BXXR901E245722FA) based on the factor analysis procedures. During the complex assessment of the patterns of interdependence between the characteristics of health status and indicators of the development of psychophysiological functions of the organism of students, who were at different stages of higher medical education, it was determined that young man had the most significant influence on health characteristics of the level of health factors such as "functional features of the visual sensory system", "functional features of motion coordination" and "functional features speed of visual-motor reaction and stability of attention", young woman - factors such as "functional features of the visual sensory system", "functional features of motion coordination" and "functional features speed of visual-motor reaction". The results obtained are the basis for the development of methods for the prognostic evaluation of the characteristics of the formation of health characteristics in the context of determining indicators of the development of psychophysiological functions of young men and young women, as well as the development of effective health-saving technologies to create a preventive educational environment in higher education.
Keywords: *students, psychophysiological functions, health status, comprehensive assessment, factor analysis.*

Introduction

An integral component of the implementation of an adequate, according to modern requirements, prognostic assessment of the features of the interdependence of the leading correlates of adaptive capacity and functional resources of the human body is the use of factor analysis procedures, allowing from qualitative positions to evaluate the features of indicators that are not directly measured, based on the evaluation of characteristics, the level of expression of which is quite uniquely determined according to certain quantitative criteria, and therefore provides the opportunity to set for large circles dice initial signs of a relatively narrow set of properties, which marks the relationship between groups of signs that are studied, and some common factors [8, 11, 16, 27].

There are at least two very important provisions to be noted. First, the fact that the procedures of factor analysis allow to carry out a completely correct statistical description of the set of multidimensional and different in size objects,

which are marked by the presence of multiple both quantitative and qualitative features, and thus have a priori excess of the initial characteristics of the studied system, on the basis of the definition of indicators, which are deep in their essence, and form and determine them [1, 7, 13, 19].

Second, the fact that, when modeling complex cause and effect complexes, experts often face the problem of having some excess information, especially if the exogenous variables xi included in the structure of the characteristic space of the model considered are multicollinear. Therefore, in order to ensure a high degree of adequacy of the model created by the actual process, we resort to replacing a certain multi-rank characteristic set with a significantly smaller number of uncorrelated quantities, which fully retain information about the causal mechanism of formation of the phenomenon under study, and which is very important without influence. on the accuracy of the results obtained [4, 6, 12, 14, 18, 26].

The most appropriate tool for such substitution is factor analysis, which involves the use of technology to move from describing an object to a number of directly measurable features to describing a much smaller number of variables that reflect its most significant properties and do not require the distribution of variables as dependent, and independent - all variables are equal and interdependent [1, 3, 5, 16, 17, 28, 29].

The use of such procedures of multidimensional static analysis also requires the problem of establishing the relationship between the correlates of complex health structure and the functional capabilities of the human body [2, 9, 10, 15, 20-25].

The purpose of the work is to establish the patterns of interdependence of the characteristics of the functional state of the organism and indicators of the health status of students and their complex assessment based on the use of factor analysis procedures.

Materials and methods

Scientific researches were carried out on the basis of National Pirogov Memorial Medical University, Vinnytsya. In the course of their implementation, indicators of functional features of higher nervous activity were studied, namely: value of latent period of simple and differentiated visual-motor reaction, mobility and balance of nervous processes on the basis of use of chronoreflexometry technique, characteristics of attention and mental capacity, that were installed using Schulte tables, as well as performance indicators of the visual sensory system (critical fusion frequency of light flashes) by the results of the use of method "Svitlotest" and features somatosensory analyzer (coordination) according to tremormetry data.

Data on the interdependence of the characteristics of the level of development of psychophysiological functions and health indicators of students were subjected to statistical processing using a licensed standardized package of applications of multidimensional statistical analysis "Statistica 6.1 for Windows" (licensing number BXXR901E245722FA) using procedures of factor analysis. Its use led to the creation of a correlation matrix for the variables to be analyzed, the separation of individual factors and the calculation of factor loadings, the subsequent rotation of factors to create a simplified scheme for their interpretation by the Varimax method, as well as the identification and meaningful interpretation of the obtained factors [1, 3, 16].

Results

During the scientific work, considering the obtained data, it was found that at the initial stage of education in higher medical education, the patterns of interdependence with the characteristics of the state of health (y) and indicators of the development of psychophysiological functions of the body of young men and young women students who studied at the 1th year present in the form of the following relationships:

- *in first-year young men: $y = 0.094f_1 + 0.419f_2 + 0.383f_3$,* where the factor f_1 - should be defined as "functional features of the visual sensory system" (the proportion of variance - 30.25%) and, in the first place, was associated with indicators of the critical fusion rate of students' light flashes; factor f_2 - should be defined as "functional features of coordination of movements" (the proportion of variance - 27.59%) and, first of all, combined in its structure indicators that reflected the characteristics of the coordination abilities of the studied young men and, above all, indicators in terms of the number of touches during tremormetry and integral index of coordination of movements; factor f_3 - was to be defined as "functional features of the speed of visual-motor response and stability of attention" (the proportion of variance - 11,15%) and, above all, included in its structure indicators of the latent period of simple and differentiated visual-motor reactions as well as the degree of retraction into the activities performed by the students under study;

- *in first-year young women: $y = 0.598f_1 + 0.336f_2 + 0.089f_3$,* where the factor f_1 - should be defined as "functional features of coordination of movements" (the proportion of variance - 30.58%), and, above all, combined indicators in its structure, that reflected the characteristics of the students' coordination abilities and, above all, the indicators regarding the number of touches during the tremormetry and the integral index of coordination of movements; factor f_2 - should be defined as "functional features of the visual sensory system" (the proportion of variance - 24.61%) and, first of all, was related to the indicators of the critical frequency of light fusion of the young women studied; factor f_3 - was to be defined as "functional features of the speed of visual-motor reaction" (the proportion of variance - 10.59%) and, first of all, included in its structure indicators of the latent period of simple and differentiated visual-motor reactions, as well as the speed of conducting the coordination test among the students studied.

The patterns of interdependence between health characteristics and indicators of the development of psychophysiological functions of the body of young men and young women students, who studied at the 3th year, and therefore were in the intermediate stage of obtaining a higher medical education, should be presented in the form of the following relationships:

- *in third-year young men: y = 0.249f1 + 0.368f2 + 0.142f3,* where the factor *f1* - should be defined as "functional features of the visual sensory system" (the proportion of variance - 31.51%) and, in the first place, was associated with indicators of the critical frequency of the merging of light flashes of students; factor f_2 - should be defined as "functional features of coordination of movements" (the proportion of variance - 27.52%) and, first of all, it combined in its structure indicators that reflected the characteristics of coordination abilities of the studied young men and, above all, indicators with respect to the number of touches during tremometry and integral index of coordination of movements; factor f_3 - was to be defined as "functional features of the speed of visual-motor reaction and stability of attention" (the proportion of variance - 13.27%) and, above all, included in its structure indicators of the latent period of simple and differentiated visual-motor reactions, as well as the degree of involvement in the activities performed by the students under study;

- *in third-year young women: y = 0.201f_1 + 0.6386f_2 + 0.183f_3,* where the factor f_1 - should be defined as "functional features of the visual sensory system" (the proportion of variance - 30.32%) and, above all, was related to the critical the frequencies of fusion of light flashes of the studied young women; factor f_2 - should be defined as "functional features of movement coordination" (the proportion of variance - 25.91%) and, above all, it combined in its structure indicators that reflected the characteristics of student coordination skills and, above all, indicators of the integral index of coordination of movements; factor f_3 - was to be defined as "functional features of the speed of visual-motor reaction" (the proportion of variance - 13.84%) and, first of all, included in its structure indicators of the latent period of simple and differentiated visual-motor reactions of the studied students.

Finally, at the final stage of the study of patterns of interdependence between health characteristics and indicators of the development of psychophysiological functions of the body of young men and women students who studied at the 6th year, should be presented in the form of the following relationships:

- *in graduate young men: y = 0.107f_1 + 0.595f_2 + 0.373f_3,* where the factor f_1 - should be defined as "functional features of the visual sensory system" (the proportion of variance - 35.30%) and, in the first place, was associated with indicators of the critical frequency of the merging of light flashes of students; factor f_2 - should be defined as "functional features of coordination of movements" (the proportion of variance - 25.71%) and, first of all, it combined

in its structure indicators that reflected the characteristics of coordination abilities of the studied young men and, above all, indicators in terms of the number of touches during tremometry and integral index of coordination of movements; factor f_3 - was to be defined as "functional features of the speed of visual-motor response and stability of attention" (proportion of variance - 11.35%) and, above all, included in its structure indicators of the latent period of simple and differentiated visual-motor reactions, as well as the degree of involvement in the activities performed and the mental stability of the students who were examined;

- *in graduate young women: y = 0.598f_1 + 0.336f_2 + 0.089f_3,* where the factor f_1 - should be defined as "functional features of the visual sensory system" (32.22% of the variance) and, above all, was associated with critical the frequencies of fusion of light flashes of the studied young women; factor f_2 - should be defined as "functional features of coordination of movements" (the proportion of variance - 27.61%) and, above all, combined in its structure indicators that reflected the characteristics of the coordination abilities
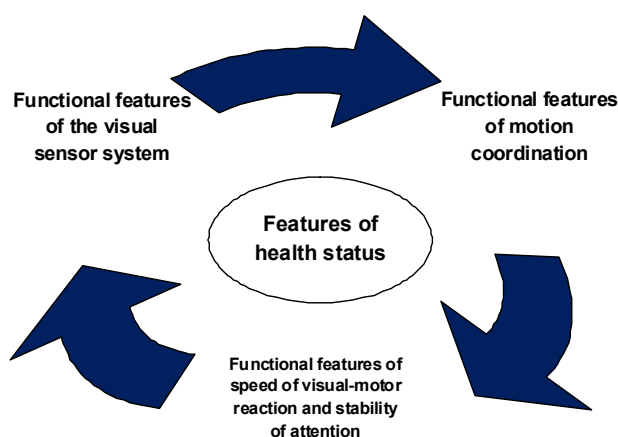

Fig. 1. Peculiarities of factor structure of influence of psychophysiological functions on health status of young men students of higher medical education.
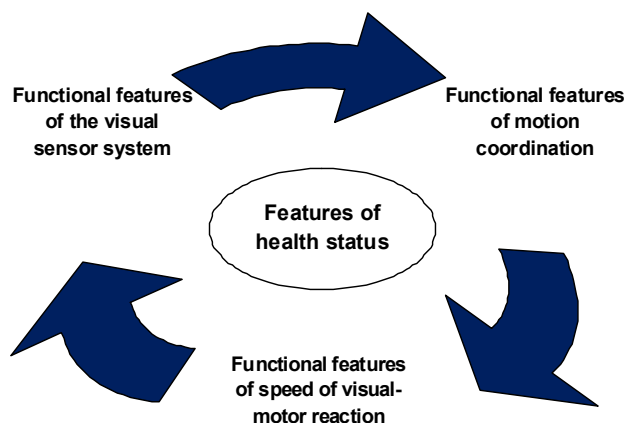

Fig. 2. Peculiarities of factor structure of influence of psychophysiological functions on health status of young women students of higher medical education.

of female students and, above all, the number of touches during the tremormetry and integral index of coordination of movements; factor f_3 - was to be defined as "functional features of the speed of visual-motor reaction" (the proportion of variance - 13.57%) and, first of all, included in its structure the indicators of the latent period of simple and differentiated visual-motor reactions of the studied students.

Figures 1 and 2 illustrate the peculiarities of the factor structure of the influence of psychophysiological functions on the health status of young men and young women students of higher education institutions.

Discussion

Factor procedures were used to determine and subsequently evaluate complex patterns of both communication and, above all, the interdependence of health characteristics and indicators of the development of psychophysiological functions of the body of students who were at different stages of higher medical education, that allow quantitative analysis of indicators that are not directly measured, but can be estimated based on generalization of certain characteristics, which are well defined and thus provide the opportunity to perform a statistical description of multidimensional objects, which are marked by the presence of a number of quantitative and qualitative features and have a certain excess of the initial characteristics of the systematic content, by determining the inherently deep indicators that form them [2, 9, 10, 15, 20-25].

It should be noted that the primary purpose of factor analysis is to identify latent root causes that fully explain the correlation between the traits under study and, crucially, be interpreted according to their nature and content. Using this approach assumes that a single factor trait (f1) is an adequate correlate of certain properties of an existing phenomenon, although not directly measured. If there are several such root causes, certain groups of highly correlated factor traits (f1, f2, ... fn) are separated in the sign space. Therefore, the main task of factor analysis should be considered the separation and identification of individual factors, as well as determining the extent of their expression for individual units of the statistical population [1, 3, 4, 8, 11, 16].

At the same time, the identification of the factor components and, therefore, the provision of certain content to them depends on the characteristic set under study. As a rule, it is formed on the basis of a theoretically substantiated hypothesis regarding the nature of the latent properties of the phenomenon. In the absence of such a hypothesis, the most likely number of features is used, relying on the independent possibility of a method to detect such properties. At the same time, given the fact that the factors are hypothetical quantities, their measurement is only mediated by statistical models that are specially constructed and described as linear combinations. The

total number of factors is determined by both formal (expert approach) and substantive (contribution of factors to the variance of traits, specific contribution of factors to the total variance, Kaiser criterion, scree criterion) criteria. At the same time, the interpretation of the obtained factors makes it possible to analyze the values of the correlation coefficients between the original variables and the factors obtained during the analysis and, in the case of identifying individual interrelated with the latter variables, their meaningful interpretation [1, 8, 11, 16].

The findings of the studies highlighted the fact that among the young men, the leading characteristics of the health status during their stay in the institution of higher medical education were most significantly influenced by such factors as "functional features of the visual sensory system" (the proportion of variance - from 30.25% among first-year student up to 35.30% among graduates), "functional features of motion coordination" (the proportion of variance - 25.71% among graduates up to 27.59% among first-year student) and "functional features of visual-motor speed response and stability of attention" (the proportion of variance - from 11.15% among first-year students to 13.27% among third-year students), among young women, the most significant influence during all the study period was influenced by such factors as "functional features of the visual sensory system" (the proportion of variance - from 24.61% among first-year students to 32.22% among graduates), the "functional features of coordination of movements" (the proportion of variance - 25.91% among third-year students to 30.58% among first-year students) and "functional features of speed of vision-motor reaction" (the proportion of variance - from 10.59% among first-year students to 13.84% among third-year students).

The following data should be considered both in the diagnostic (development of methods of prognostic evaluation of characteristics of the formation of health characteristics in the context of determining indicators of development of psychophysiological functions of young men and young women), and in the preventive (development of effective health-saving technologies to create a preventive educational environment in higher education institutions) sense.

Conclusions

1. During the complex assessment of the patterns of interdependence of health characteristics and indicators of the development of psychophysiological functions of the body of young men and women students who were at different stages of higher medical education, an extremely stable and stable picture of the relationship between the studied indicators was determined.

2. It was found that young men had the most significant influence on the leading characteristics of health status during their stay in the institution of higher medical education such as "functional features of the visual sensory system", "functional features of coordination of movements" and

"functional features of speed visual-motor response and stability of attention", however, in young women, the characteristics of the level of health during the whole time of study were most significantly influenced by factors such as "functional features visual sensor system", "functional features of motion coordination" and "functional features of speed of visual-motor response".

References

[1] Antomonov, M. Yu. (2018). *Mathematical processing and analysis of biomedical data.* Kiev: MITs "Medinform".

[2] Baranov, A. A., Kuchma, V. R., & Suhareva, L. M. (2008). *Medical and social aspects of adaptation of modern adolescents to conditions of education, training and labor activity.* Moscow: GOETAR-Media.

[3] Borovikov, V. P., & Borovikov, I. P. (1998). *STATISTICA: Statistical analysis and data processing in Windows.* Moscow: Publishing House "Filin".

[4] Byuyul, A., & Cefel, P. (2005). *SPSS: the art of information processing. Analysis of statistical data and restoration of hidden patterns.* St-Petersburg: LLC "DiaSoftYuP".

[5] Castro, M. A., Baltar, V. T., Selem, S. S. C., Marchioni, D. M. L., & Fisberg, R. M. (2015). Empirically derived dietary patterns: interpretability and construct validity according to different factor rotation methods. *Cad Saúde Pública,* 31(2), 298-310. doi: 10.1590/0102-311X00070814

[6] Floyd, F. J., & Widaman, K. F. (1995). Factor analysis in the development and refinement of clinical assessment instruments. *Psychol Assess,* 7(3), 286-299. doi: 10.1037/1040-3590.7.3.286

[7] Hair, Jr. J. F., Black W. C., Babin B. J., Anderson R. E., & Tatham R. L. (2006). *Multivariate Data Analysis.* 6ª ed. Upper Saddle River: Pearson Prentice Hall.

[8] Johnson, R. A, & Wichern, D. W. (1998). *Applied Multivariate Statistical Analysis.* 6ª ed. Upper Saddle River: Pearson Prentice Hall.

[9] Kalnish, V. V. (2008). Psychophysiological aspects of studying the reliability of operator activity. *Ukrainian Journal of Medicine,* 3(15), 81-89.

[10] Kuchma, V. R., & Suhareva, L. M. (2006). *Scientific and methodological foundations for studying the adaptation of children and adolescents to living conditions.* Moscow: [wp].

[11] Meyers, L. S, Gamst, G., & Guarino, A. J. (2006). *Applied multivariate research: design and interpretation.* California: Sage.

[12] Nasledov, A. D. (2005). SPSS: *Computer Data Analysis in Psychology and Social Sciences.* St-Petersburg: Piter.

[13] Nasledov, A. D. (2006) *Mathematical methods of psychological research. Analysis and interpretation of data.* St-Petersburg: Rech.

[14] Park, H. S., Dailey, R., & Lemus, D. (2002). The use of exploratory factor analysis and principal components analysis in communication research. *Hum. Commun. Res.*, 28(4), 562-577. doi: 10.1111/j.1468-2958.2002.tb00824.x

[15] Polka, N. S., & Serheta, I. V. (2012). Actual problems of psychohygiene of children and adolescents: ways and perspectives of their solution (review of literature and own research). J*ournal of the Academy of Medical Sciences of Ukraine,* 18(2), 223-236.

[16] Rebrova, O. Yu. (2006). *Statistical analysis of medical data. Application package Statistica.* Moscow: MediaSfera.

[17] Rencher, A. C. (2002). *Methods of multivariate analysis.* 2ª ed. New York: John Wiley & Sons.

[18] Sass, D. A. (2010). Factor loading estimation error and stability using exploratory factor analysis. *Education Psychology Measurement,* 70(4), 557-577. doi: 10.1177%2F0013164409355695

[19] Schneeweiss, H., & Mathes, H. (1995). Factor analysis and principal components. *J Multivar Anal,* 55(1), 105-124. doi: 10.1006/jmva.1995.1069

[20] Serheta, I. V., & Bardov, V. G. (1998). Perspectives on using the level of physical performance as a quantitative indicator of the health of children and adolescents. *Environment and health,* 1(4), 14-17.

[21] Serheta, I. V., & Mostova, O. P. (2013). Medical and social aspects of educational adaptation and health status of schoolchildren. *Topical issues of pediatrics, obstetrics and gynecology,* 2, 20-22.

[22] Serheta, I. V., Bratkova, O. Y., Mostova, O. P., Panchuk, O. Y., & Dudarenko, O. B. (2012). Scientific principles of psychohygienic diagnostics of the health of children, adolescents and youth. *Environment and health,* 4(64), 21-25.

[23] Serheta, I. V., Grigorchuk, L. I., & Molchanova, O. P. (2002). Ways of optimization of professional adaptation of students to the conditions of study at a medical higher educational institution and their predictive value. *Environment and health,* 4(23), 57-61.

[24] Serheta, I. V., Panchuk, O. Y., Stoyan, N. V., Drezhenkova, I. L., & Makarov, S. Y. (2016). University hygiene in the context of implementation of the "Law on Higher Education": physiological and hygienic bases, realities and ways of development. *Dovkillya ta zdorov'ya,* 4(80), 46-52.

[25] Suharev, A. G., & Serheta, I. V. (1996). Personal features of the body of modern teenagers and the ways of their correction. *Higiene and sanitation,* 1, 29-31.

[26] Suhr, D. (2005). *Principal component analysis vs. exploratory factor analysis.* In: SUGI 30 Proceedings [Internet]. Available from: http://www2.sas.com/proceedings/sugi30/Leadrs30.pdf

[27] Yerina, A. M. (2001). *Statistical modeling and forecastin.* Kiev: KNEU.

[28] Yong, A. G., & Pearce, S. (2013). A beginner's guide to factor analysis: focusing on exploratory factor analysis. *Tutor Quant Methods Psychol,* 9(2), 79-94. doi: 10.20982/tqmp.09.2.p079

[29] Zygmont, C., & Smith, M. R. (2014). Robust factor analysis in the presence of normality violations, missing data, and outliers: Empirical questions and possible solutions. *Quantitative Method for Psychology,* 10(1), 40-55. doi: 10.20982/tqmp.10.1.p040

ЗАКОНОМІРНОСТІ ВЗАЄМОЗАЛЕЖНОСТІ ХАРАКТЕРИСТИК ФУНКЦІОНАЛЬНОГО СТАНУ ОРГАНІЗМУ І ПОКАЗНИКІВ СТАНУ ЗДОРОВ'Я СТУДЕНТІВ ТА ЇХ КОМПЛЕКСНА ОЦІНКА

Сергета І.В., Мостова О.П., Стоян Н.В., Панчук О.Ю., Ольхова І.В.

Невід'ємним компонентом здійснення адекватної прогностичної оцінки особливостей взаємозалежності провідних корелят адаптаційних можливостей та функціональних ресурсів організму людини є використання процедур факторного аналізу. Мета роботи - встановлення закономірностей взаємозалежності характеристик функціонального стану організму і

показників стану здоров'я студентів та їх комплексна оцінка на підставі використання процедур факторного аналізу. Під час проведення наукових досліджень вивчали показники функціональних особливостей вищої нервової діяльності, зорової сенсорної системи та соматосенсорного аналізатора. Дані щодо особливостей зв'язку та взаємозалежності характеристик рівня розвитку психофізіологічних функцій і показників стану здоров'я студентів підлягали статистичній обробці із використанням ліцензійного стандартизованого пакету "Statistica 6.1 for Windows" (ліцензійний № BXXR901E245722FA) на підставі застосування процедур факторного аналізу. В ході здійснення комплексної оцінки закономірностей щодо взаємозалежності між характеристиками стану здоров'я та показниками розвитку психофізіологічних функцій організму студентів і студенток, які перебували на різних етапах здобуття вищої медичної освіти, визначено, що у юнаків на провідні характеристики рівня здоров'я найбільш значущий вплив справляли такі фактори, як "функціональні особливості зорової сенсорної системи", "функціональні особливості координації рухів" і "функціональні особливості швидкості зорово-моторної реакції та стійкості уваги", у дівчат - такі фактори як "функціональні особливості зорової сенсорної системи", "функціональні особливості координації рухів" і "функціональні особливості швидкості зорово-моторної реакції". Отримані результати є базисом для розроблення методик прогностичної оцінки особливостей формування характеристик стану здоров'я у контексті визначення показників розвитку психофізіологічних функцій юнаків і дівчат, а також розроблення ефективних здоров'язберігаючих технологій для створення превентивного освітнього середовища у закладі вищої медичної освіти.
Ключові слова: *студенти, психофізіологічні функції, стан здоров'я, комплексна оцінка, факторний аналіз.*

ЗАКОНОМЕРНОСТИ ВЗАИМОЗАВИСИМОСТИ ХАРАКТЕРИСТИК ФУНКЦИОНАЛЬНОГО СОСТОЯНИЯ ОРГАНИЗМА И ПОКАЗАТЕЛЕЙ СОСТОЯНИЯ ЗДОРОВЬЯ СТУДЕНТОВ И ИХ КОМПЛЕКСНАЯ ОЦЕНКА
Сергета И.В., Мостовая О.П., Стоян Н.В., Панчук А.Е., Ольхова И.В.
Неотъемлемым компонентом осуществления адекватной прогностической оценки особенностей взаимозависимости ведущих коррелят адаптационных возможностей и функциональных ресурсов организма человека является использование процедур факторного анализа. Цель работы - установление закономерностей взаимозависимости характеристик функционального состояния организма и показателей состояния здоровья студентов и их комплексная оценка на основе использования процедур факторного анализа. В ходе проведения научных исследований изучались показатели функциональных особенностей высшей нервной деятельности, зрительной сенсорной системы и соматосенсорного анализатора. Данные об особенностях взаимозависимости характеристик уровня развития психофизиологических функций и показателей состояния здоровья студентов подлежали статистической обработке с использованием лицензионного стандартизированного пакета "Statistica 6.1 for Windows" (лицензионный № BXXR901E245722FA) на основании использования процедур факторного анализа. В ходе осуществления комплексной оценки закономерностей взаимозависимости между характеристиками состояния здоровья и показателями развития психофизиологических функций организма студентов и студенток, находящихся на различных этапах получения высшего медицинского образования, определено, что у юношей на ведущие характеристики уровня здоровья наиболее существенное влияние оказывали такие факторы, как "функциональные особенности зрительной сенсорной системы", "функциональные особенности координации движений" и "функциональные особенности скорости зрительно-моторной реакции и устойчивости внимания", у девушек - такие факторы, как "функциональные особенности зрительной сенсорной системы", "функциональные особенности координации движений" и "функциональные особенности скорости зрительно-моторной реакции". Полученные результаты являются базисом для разработки методик прогностической оценки особенностей формирования характеристик состояния здоровья в контексте определения показателей развития психофизиологических функций юношей и девушек, а также разработка эффективных здоровье-сберегающих технологий для создания превентивной образовательной среды в учреждении высшего медицинского образования.
Ключевые слова: *студенты, психофизиологические функции, состояние здоровья, комплексная оценка, факторный анализ.*