Psychophysiological potential and health level of foreign students

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Abstract

Psychophysiological potential is a general concept that includes socio-demographic status, lifestyle, physical fitness and morpho-functional characteristics of students' body. Health maintenance in university students is one of the most relevant and most important topics at every stage of social development. The place of students in the social system, a certain atmosphere of educational activity and a students' lifestyle in general distinguish this social group from the rest of the population and make it vulnerable to the influence of negative social factors. As a result, efforts aimed at preserving and improving students' health do not provide long lasting success and increase the relevance of finding new innovative ways to health management in university students. The purpose of the study was to assess the psychophysiological potential and health level of Russian and foreign students. The study was conducted during the 2018-2020 academic year at the South Ural State University. A questionnaire survey was used to obtain information about socio-demographic status, lifestyle and everyday life of university students. The following control tests were used for the assessment of their physical fitness: 1000 m run, 100 m run, standing long jump. The study showed that good academic performance was accompanied by psychophysiological stress. High anxiety was expressed in the internal and external motivation for study. With functional activation of the body, anxiety played a positive role as a mobilizer of mental reserves. The educational system should support students and improve their health status, which affect both motivation for study and academic success in university students.

Keywords: survey, questionnaire, cultural distance, adaptive capabilities, physical development, academic performance.

Introduction

Health is considered as the main condition for a productive and active life of a person. The World Health Organization defines health as a state of complete physical, mental and social well-being and not as the absence of diseases or physical disabilities (Kikolov A.I., 1985). Over the past years, the concept of "health" has been extended and developed many times, therefore, today there are more than 300 definitions of it (Syrensky V. I., 2008).

According to scientists, health is a status of an organism that enables a person to fully realize his/her genetic program in the constantly changing conditions of socio-cultural life.

In accordance with the literature data, somatic health determines the intensity of physical activity required for maintaining and strengthening health systems during physical exercises and should be used as the criterion for evaluating the effectiveness of these exercises (Syrensky V. I., 2008, Lopsan A., Buduk-ool L., 2017).

In this regard, the study of the influence of physical education and sports skills on some features of the students' body should include an integral assessment of physical health, which is defined by physical development and functional performance (Litvinova N.A., Goldschmidt E.S., Berezina M.G., 2004; Shikhaeva M.V., Pavlycheva M.A., Efremova T.G., 2013). However, at the moment there is a limited number of works, which provide the data of the aggregate assessment of physical health of students with different motor activity levels.

Much attention has always been paid to university students as an independent social category of the population. A special status, an atmosphere of educational activity, rapidly changing living conditions and a certain lifestyle of university students distinguish them from all other categories of the population and make them especially vulnerable and prone to the influence of unfavorable social factors (Yugova E.A., Turov T.F., 2012). Health issues in young adults are of utmost importance due to a range of factors. First, young adults are the main reserve and the main part of work force in the national economy. Secondly, the state of health in young adults is the future of the nation's health in the next decades (Aghadjanyan N.A., Ruzhenkova Yu.P., 1997). To achieve academic success at the university level, a student must have sufficient health, which includes a strong nervous system and a good memory. The academic loads that university students must cope with can be regarded as regular stimuli that provoke strong responses in students and manifest themselves as tension of the nervous system (Burkhanov A.N., Burkhanov T.A., 1994; Shchedrina A.G., 2007).

According to S.I. Modnov, the adaptation of foreign students, as well as the creation of a favorable educational environment for such students in the Russian Federation results in a growing number of works dedicated to the features of adaptation of students to living and learning conditions. At the same time, the methodological basis for such a study is of relevant importance. This is necessary in order to understand how foreign students perceive themselves in a new socio-cultural environment and what urgent measures need to be taken to improve living and learning conditions and accelerate the adaptation process.

In the current educational system, the success of universities depends on the number of foreign students. In accordance with the State Program entitled "Development of Education" for 2013-2020, the percentage of foreign students at Russian universities should reach a level from 2.3% in 2011 to 10% by 2020 (OECD 2013a). The adaptation of foreign students is mostly associated with the difficulty of learning the Russian language. On the one hand, only a small part of Russian universities provides English-language programs, on the other hand, a significant part of foreign students has a fairly low level of English skills. For foreign students from China, India, Iraq, Vietnam, Indonesia, Thailand, learning Russian is not easy, which also affects their adaptation (OECD 2013b).

At the South Ural State University, located on the border between Europe and Asia and having good educational traditions, there are more than two thousand foreign students from 52 countries, including more than 200 Chinese students and more than 140 Arab students.

For the first time the phenomenon of cultural distance was described by A. Furnham and S. Bochner, and later it was mainly considered by other researchers as the "culture shock" model. This concept of "cultural distance" was used within the framework of destructive stress that negatively affects students in a foreign country. For this, the psychologist Babiker et al. developed a special cultural distance index (CDI), which determined the objective differences between the cultures of different countries. These differences include such categories as climate and environment, clothing requirements, religion, eating habits, etc.

The influence of cultural distance on ethnic intolerance in domestic ethnopsychology was confirmed during the study of the adaptation of ethnic Russians in the Transcaucasus (Isaev A.P., Prokopiev N. Ya., Chimarov V.M., 2002). Cultural distance and the level of community of an ethnic group as a subject of interethnic interaction are the two main factors that have the greatest influence on intolerance towards other ethnic groups. Therefore, an increase in the cultural distance between ethnic groups leads to an increase in ethnic intolerance.

Students are a special group characterized by a certain age, specific working and living conditions. They belong to a high-risk group due to relatively high and prolonged stress (Krol V.M., Vikha M.V., 2014; Strakhova I.B., 2015), which is much higher than that of their peers from other social groups (Abisheva Z.S., Zhetpisbayeva G.D., Raissov T.K., 2016; Strakhova I.B., 2015; Eganov A., Cherepov E., Romanova L., Bykov V.,). Serious requirements associated with academic load and other factors of student life, change the nature of compensatory mechanisms in students (Kikolov A.I., 1985). Their lifestyle is characterized by many risk factors such as living conditions, physical inactivity, daily routine and nutrition imbalance, and mental stress (Modnov S.I., Ukhova L.V., 2013). As a result, health problems arise, this leads to a decrease in the adaptive capabilities and, in 30% of cases, to unsatisfactory adaptation (Aghadjanyan N.A., Ruzhenkova Yu.P., 1997; Burkhanov A.N., Burkhanov T.A., 1994).

The purpose of the study is to assess the psychophysiological potential and health level of Russian and foreign students.

Materials and methods.

The study was conducted during the 2018-2020 academic year at the South Ural State University. Among the respondents, 53.5% are males (of which 33.2% are Russian and 20.3% are foreign students) and 46.5% are females (of which 31.7% are Russian and 14.8% are foreign students).

We conducted a questionnaire survey to obtain information about socio-demographic status, lifestyle and everyday life of university students, including their self-assessment of financial and living conditions, health and physical development, motivation for physical education and sports.

Results and discussion.

An analysis of the data obtained from a survey of foreign students showed that at the time of entering the university 2.5% were married, of which 1.2% already had children.

Before entering the university, 49.1% of students lived in rural areas, including 10.4% of foreign students.

Higher physical fitness is typical of students living in rural areas (52.4%).

The following control tests were used for the purpose of the study: 1000 m run, 100 m run, standing long jump. All tests were performed in September.

Figure 1. 1000 m run

Figure 2. 100 m run

Figure 3. Standing long jump

An analysis of academic success showed that students living in the city are better in engineering and mathematics (67.4%).

The study of living conditions as one of the main factors of financial well-being showed that 51.3% of students live with parents, 25.8% live in dormitory, while 19.9 % rent their apartments. The degree of satisfaction with living conditions to a greater extent depends on the place itself: more than 50% of students living with parents are completely satisfied with their conditions, while students from dormitory are mostly satisfied with the place they live in. This explains various neurotic disorders in students from dormitory (Dorozhkin Yu.N., 2007). The educational system should support students and improve their health status, which affect both motivation for study and academic success in university students. Health monitoring is limited to assessing the adaptive capabilities of students. It was found that students with satisfactory adaptation had a relatively high subjective health assessment.

34.8% of students believe that they are characterized by "good health", 45.3% - assess their health as "satisfactory", 19.9% of respondents assess their health as "poor". Among the students of the good health group, more than half are foreign students (21.7%).

First-year students assess their health worse. This is probably due to the adaptation process, which is associated with stress after graduation, entrance procedures and significantly greater academic loads.

Health assessment varied significantly by gender. 46.1% of males assess their health as good, 35.4% as satisfactory, and 18.5% as bad. The data obtained for females are slightly worse - 35.5%, 43.5%, and 21%, respectively.

Figure 4. Health assessment in male students

Figure 5. Health assessment in female students

The data about the frequency and duration of diseases, as well as about any chronic diseases were used for the assessment of students' health. Only 29.8% of students "did not get sick during the year, 37.9% - were ill for less than a week, 18.4% - were ill for about a month, 9.7% - were ill for more than two months. Their distribution in terms of citizenship turned out to be practically the same. 31.2% of the respondents have chronic diseases, and more than half of them are Russian students.

Nutrition is one of the important components of healthy lifestyle. Quantitative and qualitative characteristics of nutrition indicate a person's financial position and the quality of life in general. At the first stage of our research, students' body weight was measured, then the ideal body weight and body mass index were calculated (Table 1). The ideal body weight was calculated using the following formula (Litvinova N.A., Goldschmidt E.S., Berezina M.G., 2004):

Ideal body mass (females) = $50 + (BL - 150) \times 0,32 + (A - 21) / 5$

Ideal body mass (males) = $50 + (BL - 150) \times 0,75 + (A - 21) / 4$,

where BL – body length, A – age.

The deviation of body weight from the ideal body weight of up to $\pm 15\%$ corresponds to the norm, 15-24% corresponds to grade 1 obesity, 25-49% to grade 2 obesity, and from 50 to 99% to grade 3 obesity.

Figure 6. Indicators of the nutritional status of students (SUSU)

Figure shows that Russian girls have the lowest body mass index, which may indicate a low nutritional status. This fact can be regarded as a "tribute to fashion".

In accordance with the assessment of students, only 39.3% of them "eat well" and 3.5% are "constantly undernourished".

The quality of the food is highly dependent on where the students live. Usually students who live in a dormitory eat worse than others, the share of people who eat well among such students is lower (13.6% versus 60.2% for those living at home) and higher is the number of students who are "undernourished" and "constantly undernourished" (25.4% versus 4.2%). Female students assess their nutritional quality worse than male students due to their high demands on the diet in general.

Physical development is directly related to health, although these concepts are not equivalent. According to the results of the study, 54.8% of respondents assess their physical development as "good", of which foreign students – 31.9%, 32.6% - as "satisfactory" (foreigners – 10.1%) and 12.6% as "poor". It should be noted that foreign students did not assess their physical development as "poor". Basically, 57.1% of foreign and 42.9% of Russian students assessed their physical development as "good".

As in the case of health, male students consider their physical development to be higher than female students: 58% of males and 30% of females define their physical development as "good", 2% of male students and 19% of female students define their physical development as "poor". At the same time, foreign female students think of their physical development better than Russians, and male students of both groups - almost the same.

It should be noted that students, regardless of gender, assess their physical development better than their health. One of the main elements influencing physical development in foreign and Russian students is physical education. Regularity of classes is among the main requirements of physical education, as well as individual intensity of physical activity. Analysis of the data shows that of the total number of university students only 24% of the respondents practice additional sports activities, of which 56.2% are foreign students. The main reason that reduces the motivation for physical activity is laziness (59.7%), 38.5% believe that this is too difficult to combine academic and sports activities and 1.8% think that there are no conditions for training. More than half of the students who told us about laziness are Russians.

Practicing sport is of utmost importance for the physical development of a person and his/her health improvement. The poll shows that 19% of Russians and 8% of foreign students attend sports clubs regularly (at least two to three times a week).

Female students are not so active in this respect as male students. 5.8% of Russians and 0.6% of foreign female students regularly attend sports clubs.

Therefore, the characteristics of students' lifestyle, as well as their demographic data indicate a difficult financial situation of students. Foreign students assess their physical development and state of health better, however, among Russian students, sports play an important role in their life.

Conclusion.

Thus, the indicators of good academic performance are accompanied by psychophysiological stress. High anxiety is expressed in the internal and external motivation for study. With functional activation of the body, anxiety plays a positive role as a mobilizer of mental reserves.

To reduce stress, students need to adhere to a healthy lifestyle, which implies optimal physical activity, rational and balanced nutrition, exclusion of bad habits, a strict regime of work and rest.

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