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Evaluation of Kazakhstan Students' Views on Health, Lifestyle, and Physical Activity

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Abstract

The purpose of this research was to investigate students' perception of their health, the development of their healthy lifestyle habits, and the role and place of physical activity in their daily lives. The research subjects were freshmen of one of the largest universities in the country, Al-Faraby Kazakh National University (n=100), at the age of 17.77±0.12 years, 64 of whom were female, and 36 were male. Respondents were asked to reply to a questionnaire consisting of 39 questions at the initial stage of adaptation to academic and physical activity at the university. The questionnaire included research on students' perception of their health, the development of healthy lifestyle habits, such as the quality of food, water consumption, the amount of time dedicated to sleep and its quality, the presence of bad habits, as well as the research on the role and place of working out in shaping the students' lifestyle, volume and intensity of physical activity. It was revealed that students, even those having an understanding of the role and place of a healthy lifestyle, the significance of health in life, including their future professional career, were still distinguished by the insufficiently formed habits of healthy lifestyles, and did not work out to preserve and strengthen their health. The physical activity of most of the surveyed students did not even meet the recommended minimum. This research showed that the problem of a healthy lifestyle for young people studying in different socio-cultural contexts remains relevant and requires further more extensive research.

Keywords: *students' health, nutrition, lifestyle, physical activity*

Introduction

In recent decades, the close attention of researchers in many countries has been riveted on the medical state of health of students. Such attention is not unintentional, since researchers have stated that the health of students is declining. According to Kazakhstani researchers (Batrymbetova, 2008), only 10.6% of freshmen belong to the "healthy" group, and the number of students with five or more diseases increases from year to year.

The problem of students' health is one of the urgent issues, since it ultimately is a matter of the quality of human resources who will become part of the workforce of the country in the near future. Only healthy students will be able to withstand fierce

competition in the labour market (Alekesheva et al., 2017).

It is noted that the behaviour formed in the course of learning, continuing into adulthood (Takomana & Kalimbara, 2012), is the cause of diseases that threaten health in later periods of life (Desai, Miller, Staples, & Bravender, 2008). Change of place of residence, lifestyle, and environment often leads to adverse changes in health behaviour (Norkus, 2012), such as alcohol consumption, neglect of rational nutrition, and decreased physical activity (Dobrovolskis & Stukas, 2012). Such risk factors can be avoided by paying attention to the formation of continued habits of healthy lifestyles and physical activity among students during the period of study, which can



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continue throughout their subsequent life.

In this regard, it is essential to research the state of health of young people through an investigation of the indicators characterizing their lifestyle. This can help to develop the tactics of physical education of students in higher education, contributing to the improvement of their health and the formation of a long-term setting to maintain a healthy lifestyle.

The purpose of this research was to investigate the students' perception of their health, the development of their healthy lifestyle habits, the role and place of workout in their daily lives.

Method

To achieve this goal at the initial stage of adaptation to study loads (3-4 weeks of research, September 2018), we conducted an anonymous questionnaire survey. Respondents were asked to answer a shortened questionnaire (Deniozou, 2015), consisting of 39 questions. According to their semantic meaning, the questions are divided into three groups. The first group researched the role of health in the system of values of students and self-assessment of the level of health. The second group of questions focused on the identification of the components of students' lifestyles, such as the quality of food, water consumption, the amount of time dedicated to sleep, and its quality. The remaining questions concentrated on the importance of workout in the formation of students' healthy lifestyles as well as the volume and intensity of physical activity.

The research was attended by freshmen of one of the largest universities in the country, Al-Faraby Kazakh National University (n=100), at the age of 17.77 ± 0.12 years, 64 of whom were female, and 36 were male. The average body height of girls was 162.7 ± 6.0 cm, body weight was 52.9 ± 9.1 kg, and BMI was

20.0 ± 3.1 kg/cm². The average body height of males was 169.3 ± 8.1 cm, body weight was 57.9 ± 10.4 kg, and BMI was 20.2 ± 2.9 kg/cm². The permit from the Ethics Committee of the Kazakh Academy of Sport and Tourism was obtained for the purposes of conducting the research (No. 09-01-08-500 of September 4, 2018). The confidentiality of the personal data of participants, as well as other ethical standards, have been respected.

Statistical analysis of the research data was carried out using the SPSS software, version 16.5. Traditional statistical methods were used: absolute frequencies, percentage frequencies were calculated. To establish the differences between the variables, a nonparametric criterion (chi-square) was used.

Results

As a result of the research, we found that the majority of respondents, in particular 61.5% of females and 80.0% of males, did not show particular concern about their state of health. Thus, to the question "Do you consider yourself a healthy person?" most students, both males and females, answered positively, the difference in their opinions was not statistically significant ($\chi^2=5.933$, $p=0.053$). It is noteworthy that there is a group of students who are not aware of their health issues (29.2% of females and 8.6% of males).

Analysing the data of the questionnaire survey, we found that some students, even those stating the presence of chronic diseases, considered themselves to be absolutely healthy people. This tendency was overlooked in the responses of both females and males. Also, the majority of students (64%) show no particular concern about their health, only 22% of surveyed students of both gender groups are concerned about their health ($\chi^2=11.304$, $df=3$, $p=0.01$) (Table 1).

Table 1. The percentage distribution of answers to the question, "Does your state of health bother you?"

Evaluation criteria	Males	Females	General
Yes	8.6	29.2	22.0
No	85.6	52.3	64.0
Sometime	2.9	13.8	10.0
Not sure	2.9	4.7	4.0

$\chi^2=11.304$; $df=3$; $p=0.01$

In studies of the medical activity of students, we found that about half of female students (41.5%) attend medical facilities for preventive purposes no more than once every half a year, and 33.8% of the surveyed females use the services of doctors no more than once a year (Figure 1a). As for males, 37.1% of surveyed male students go to doctors once every half a year, and 18.6% do not consult doctors more often than once a year. Only a small percentage of respondents use the services of medical institutions once a month or once in several months. The difference between the responses of females and males was not statistically significant ($\chi^2=1.416$; $df=3$; $p=0.702$).

The data presented in Figure 1b indicates that the majority of the surveyed students (75.2% of females and 61.8% of males) consider health an important factor for the success in future professional activities ($\chi^2=6.554$, $df=2$, $p=0.038$; $F=6.349$, $p=0.04$). Some students generally consider health to be important but not the determining factor for the success of a professional career; 2.8% of surveyed females and 8.8% of the males are sceptical about this definition.

Table 2 presents the results of a survey on students' commitment to a healthy lifestyle. 60.0% of males believe that they adhere to a healthy lifestyle, whereas only 40% of female

adhere to this opinion; 35.4% of surveyed females admitted the lack of awareness in matters of maintaining a healthy lifestyle; 20.0% of surveyed females and males on this issue gave a negative answer. A comparative analysis revealed that, according to the established criteria, the difference between the responses of males and females was not statistically significant ($\chi^2=5.608$, $df=3$, $p=0.132$).

Most of the surveyed students of both gender groups consider that giving up bad habits is one of the most important things to consider themselves to be adherents of a healthy lifestyle (males: 91.2%, females: 75.0%; $\chi^2=3.805$, $df=1$, $p=0.051$). Students consider regular and good nutrition to be another essential component of a healthy lifestyle. Based on their answers, it is maintained by 34.4% of females and 52.9% of males ($\chi^2=3.168$, $df=1$, $p=0.075$). According to the students, the third most important thing in keeping a healthy lifestyle was regular walks in the park, and hiking in the mountains at weekends. This option of maintaining a healthy lifestyle is preferred by 35.9% of females and 26.5% of males ($\chi^2=0.905$, $df=1$, $p=0.341$).

Figure 1c shows that working out (morning exercises, regular running, intensive classes in fitness clubs) as a means of

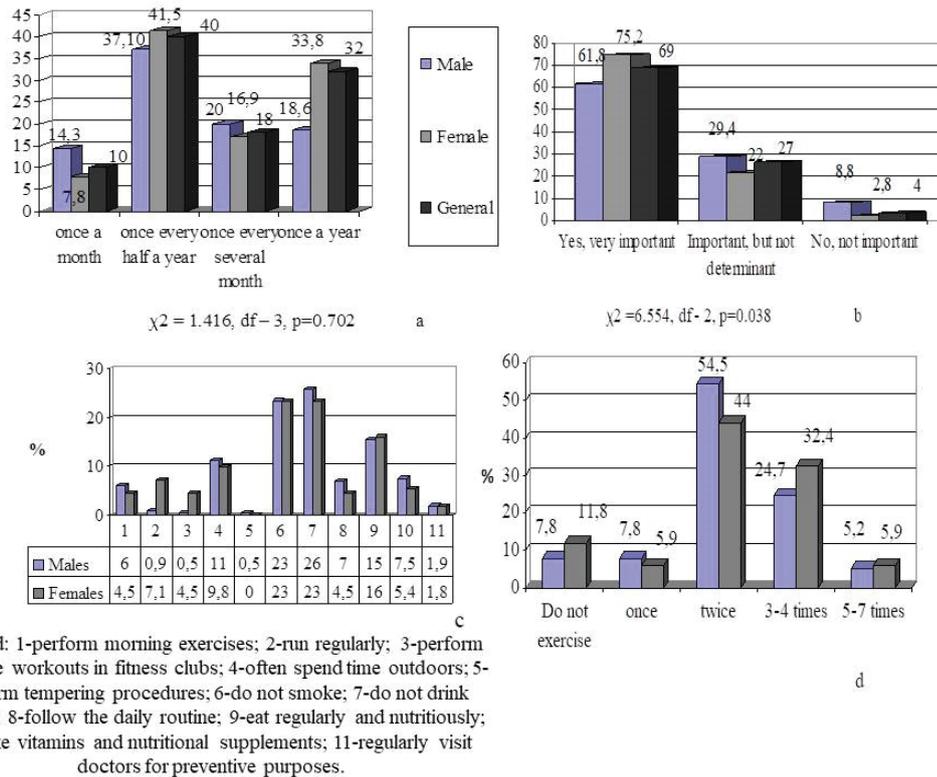


FIGURE 1. The percentage distribution of answers to the questions, “How often do you visit a doctor?” (a); “Do you consider health an important factor for success in life and your future profession?” (b); “What actions do you take to lead a healthy lifestyle?” (c); “How many times a week do you workout?” (d)

maintaining a healthy lifestyle, is preferred by a small number of surveyed students, and in all respects the involvement of males in regular workouts is greater than that of females. The exception is morning exercises: 6% of females and only 4.5% of males include them in their daily routine.

One of the important components of a healthy lifestyle, according to students, is a regular and balanced diet. Most

authors who research healthy lifestyles believe that human health depends largely on the nutritional value of food. Our studies assessing the diet of students in Kazakhstan showed that only half of females (54.7%) and males (58.8%) consider their diet to be healthy and balanced, the difference between the studied groups is not statistically significant ($\chi^2=0.154, df = 3, p=0.695$).

Table 2. The percentage distribution of answers to the question, “Do you maintain a healthy lifestyle, in your opinion?”

Evaluation criteria	Males	Females	General
Yes	60.0	40.0	47.0
No	20.0	20.0	20.0
Not always	5.7	4.6	5.0
Not sure	14.3	35.4	28.0

$\chi^2=5.608; df = 3; p=0.132$

After analysing the percentage distribution of respondents' answers about the multiplicity of food, it should be noted ($\chi^2=9.616, df = 6, p=0.0142$) that 33% of females and 57.9% of males have access to regular 3-4 meals a day (the difference between groups is statistically significant); 25.9% of females and 18.4% of males admitted that during the day they had a

snack on the run, and the main meal was only lunch or only dinner; most of them admitted that they mostly consume fast food as a snack. Also, among the respondents there are students (10.6% of males and 23.5% of females), whose diet is not normalized, in other words, students eat only when they find the time (Table 3).

Table 3. The percentage distribution of answers to the question, “What is your diet?”

Evaluation criteria	Males	Females	General
3-4 times	57.9	33.0	44.0
Twice	10.5	12.9	14.0
Just having breakfast	0	4.7	3.0
Nutrition routine is not normalized	10.6	23.5	16.0
Just having lunch or just having dinner	18.4	25.9	14.0
Fast food	2.6	0	9.0

$\chi^2=9.616; df = 6; p=0.0142$

Water is a vital component of nutrition and performs essential body physiological functions. A healthy adult is recommended to consume at least 2-3 litres of water per day. Our research has shown that most of the surveyed students consume insufficient amounts of water throughout the day (Table 4). Thus, the

daily water intake of most students does not exceed 1000 ml, 25.7% of males and 20.5% of females consume up to 2000 ml of water, and 1.5% of females and 5.7% of males are limited to the fluid that enters the body with food. On this issue, a statistically significant difference between gender groups was established.

Table 4. The percentage distribution of answers to the question about "The amount of daily water consumed."

group	The amount of water consumed by students (ml)					
	0	<1000	<2000	<3000	<4000	<5000
Males (%)	5.7	54.3	25.7	2.9	2.9	2.9
Females (%)	1.5	77.9	20.5	3.0	-	-

$\chi^2=34.489$, $df=3$, $p=0.000$

The analysis of students' responses regarding the duration and quality of sleep did not reveal significant differences between females and males. It turned out that only 50% of males and 48.4% of females sleep 7-8 hours. At the same time, 70.6% of males and 57.8% of females noted having solid, uninterrupted sleep. Some of the females (4.3%) and males (5.7%) questioned were worried about the lack of a clear sleep schedule, due to the need to combine study with work.

Physical activity as a means of maintaining and promoting health interests students less than other components of a healthy lifestyle. Thus, Figure 1d shows that the majority of students, in particular 54.5% of males and 44.0% of females, exercise twice a week and, for most of them, physical education classes of the compulsory programme are almost the only means to fill the need of physical activity. There is no statistically significant difference between the two gender groups ($\chi^2=6.328$, $df=12$, $p=0.899$).

In total, 24.7% of males and 32.4% of females include additional workouts in their daily routine, and about 5.2% of

males and 5.9% of females exercise 5-7 times a week (Figure 1d). Some of the surveyed students did not consider workouts a necessary part of their daily routine. The number of such physically inert students was greater among males than among females and amounted to 7.8% and 11.8%, respectively.

The weekly volume of physical activity of most students did not exceed 80 minutes (Table 5). The majority of students' (70.6% and 84.4% of males and females, respectively) noted that physical activity lasted up to 80 minutes a week; 26.5% of males and 14.1% of females said that they spent up to 110 minutes a week on workouts. The workouts performed by 47.1% of males and 87.5% of females were low-intensity (their heart rate did not exceed 120 beats/min); 44.1% of males and 9.4% of females reported their heart rate reaching 120-150 beats/min during exercise. Moreover, only 8.8% of males and 3.1% of females performed high-intensity exercise load on the pulse, exceeding 150 beats/min. The difference in the intensity of physical exertion between males and females is statistically significant.

Table 5. The amount and intensity of students' training loads

group	Parameters of students' training loads							
	Weekly volume (min)					Intensity of single session (beats/min)		
	<80	<110	<120	<150	>150	<120	120-150	>150
Males (%)	70.6	26.5	2.9	0	0	47.1	44.1	8.8
Females (%)	84.4	14.1	1.6	0	0	87.5	9.4	3.1

($\chi^2=2.598$, $df=2$, $p=0.273$)

($\chi^2=21.217$, $df=2$, $p=0.000$)

Despite an evident lack of physical activity, the majority of females and males view it favourably, claiming it to be an integral part of their life, also affecting the success of their studies at the university. Thus, 64.7% of males and 75.0% of females believe that working out helps to prevent the fatigue that arises in the process of study, thereby having a positive impact on the effectiveness of the learning process. At the same time, 5.6% of females and 20.6% of males are sceptical about the relationship between workout and the success of the learning process. On this issue, a statistically significant difference between gender groups was established ($\chi^2=6.211$, $df=2$, $p=0.045$). In addition, 56.0% of males and 48.4% of females note the importance of working out as a means of preventing stressful situations that arise in the learning process.

Discussion

Decreased physical activity in both adults and children and young people is a global phenomenon (Hallal et al., 2012; Kohl et al., 2012). Out of all the components that contribute to human health, it was the lack of physical activity that made the top five causes of premature death in many coun-

tries around the world, according to the experts of the World Health Organization (WHO). In contrast, a healthy lifestyle, namely regular workout and a rational work and rest schedule, promote health and significantly increases the efficiency of students' learning activities (Mull & Tietjen-Smith, 2014). Thus, Wahl-Alexander and Chomentowski (2018) revealed that students engaged in aerobic workouts strengthening the cardiovascular system have greater physical fitness and achieve higher learning accomplishments. This fact prompted us to conduct this study.

The results of our research showed that the majority of students consider themselves healthy and do not show any particular concern about their health, with the exception of 22.0% of the surveyed students who were concerned about their health. The number of male students who considered themselves to be completely healthy was bigger than that of female students, but the difference between the gender groups was not statistically significant. Moreover, even the presence of chronic diseases in some cases did not prevent students from positively perceiving their health.

While researching the medical activity of students, we

found that more than a third of females and less than half of males attend medical institutions for preventive purposes once every half a year. About a third of all respondents, both males and females, are limited to annual mandatory medical examinations. Similar data were obtained by other authors. El Ansari et al. (2011), who studied the issue of medical activity, healthy behaviour, and lifestyle features of 3.706 students at seven universities in the UK, believe that only a small percentage of students adhere to positive medical practices to control their health.

Also, the majority of surveyed respondents recognize the importance of health in life, including in their future professional careers, and understand the role and place of lifestyle in shaping individual health.

The majority of students who adhere to a healthy lifestyle believe that the rejection of bad habits and consuming regular and nutritious food is enough to qualify them as adherents of a healthy lifestyle. According to students, one of the important components of a healthy lifestyle is a regular and balanced diet and adherence to it.

One third of female students and more than one half of male respondents who took part in our research answered that they follow the correct routine and dietary frequency. This, the difference between gender groups was statistically significant. However, a sufficiently large number of students do not eat regularly, eat less often than recommended, and use fast food as a snack. There is also a group of students who eat only when they find the time.

In our research, it was revealed that the majority of students do not consume enough water, and some students are limited to the fluid that enters the body with food. Meanwhile, Gurevich, Hanfer'yan, and Kambarov (2017) believe that insufficient water intake or mild dehydration may be associated with the risk of developing chronic diseases.

Furthermore, an indisputable factor in the health status of physically active people is the quantity and quality of sleep. About half of the surveyed students showed concern about insufficient time for sleep. About a third of male students and about half of female students complained about the quality of sleep, and 4.3% of females and 5.7% of young men noted the lack of a clear schedule of sleep due to the need to combine

study with work. Meanwhile, according to Mickey, Trockel, Barnes, and Egget (2010) and Papadaki, Hondros, Scott, and Kapsokafalou (2007), the lack of time allowed for sleep, as well as earlier awakening has a negative impact not only on health but also on the academic performance of freshmen.

Analysing our data, we came to the conclusion that students, realizing the importance of physical activity in shaping health, considering it a necessary condition for the success of their studies and future professional activities, do not include workouts in the daily routine. The physical activity of the majority of the surveyed students does not even meet the hygienic minimum, neither in terms of volume nor intensity. For most students, compulsory workout at the university is the only way to fill the need for movement, while 29.4% of males and 38.8% of females include additional physical activities in the daily routine. Students do not make up for the volume and intensity of physical activity recommended by WHO (Global recommendations on physical activity for health, 2010). In our opinion, a two-time low-intensity workout, the length of which is up to 80 minutes a week and the intensity does not exceed 120 beats/min, is not enough even to meet the necessary hygienic standards of physical activity, not to mention the acquisition of additional benefits for health.

Thus, the results of this survey show the insufficiently formed habits of the interviewed students to maintain a healthy lifestyle. There are more male than female students positively evaluating their health and lifestyle, adhering to correct eating habits, and having positive medical practice. Females are more often include working out in their daily routine.

According to Tarabarina and Kononec (2018), the main reason for the formal attitude of students towards their health, its preservation and strengthening is a misunderstanding of the beneficial effects of physical activity on health, low motivation to engage in physical education, lack of development of self-control skills and in many ways inadequate perception of the state of their own body. In this regard, the physical education system is tasked with justifying the widespread use of physical education means and methods, promoting healthy lifestyles in order to shape students' readiness for health-saving physical activity and increase their physical activity and recovery.

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Conflict of interests

The authors declare that there is no conflict of interest.

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References

- Alekshcheva, L.Z., Kusherbaj, F.T., Sylanova, A.A., Daniyarova, A.B., Tabaeva, A.A., Kaliev, E.A. (2017). Sostoyanie zdorov'ya studentov KazNU im.al'-Farabi. *Vestnik KazNMU*, 2, 174-177.
- Batrymbetova, S.A. (2008). *Mediko-social'naya karakteristika studentov i nauchnoe obosnovanie koncepcii ohrary ih zdorov'ya (na primere g.Aktobe Respubliki Kazahstan)*. Dissertaciya. Moskva. Rossiya.
- Denizouz, T. (2015). Student Lifestyle Questionnaire. Healthy University Student Health and Lifestyle Survey Project University of Edinburgh, 53.
- Desai, M.N., Miller, W.C., Staples, B., & Bravender, T. (2008) Risk factors associated with overweight and obesity in college students. *American College Health*, 57(1), 109–114.
- Dobrovol'skis, V., & Stukas, R. (2012) Studentų mitybos ypatumai. Visuomenės sveikata. Public health: *Proceedings of the International Conference on Non-Communicable Diseases Management* (14-19). Klaipėda.
- El Ansari, W., Stock, C., John, J., Deeny, P., Phillips, C., Mabhalha, A., et al. (2011) Health promoting behavior and lifestyle characteristic of students at

- seven universities in the UK. *Central European Journal of Public Health*, 19(4), 197-204.
- Gurevich, K.G., Hanfer'yan, R.A., Kambarov, A.O. (2017) Bezalkogol'nye napitki: rossijskie priority. *Voprosy pitaniya*, 3(86), 49-54.
- Hallal, P.C., Andersen, L.B., Bull, F.C., Guthold, R., Haskell, W., & Ekelund, U. (2012) Global physical activity levels: surveillance progress, pitfalls, and prospects. *The Lancet*, 380, 247-257.
- Kohl, H.W, Craig, C.L., Lambert, E.V., Inoue, Sh., Alkandari, J.R., & Leetongin, G. (2012) The pandemic of physical inactivity: global action for public health. *The Lancet*, 380(9838), 294–305.
- Mickey, T., Trockel, M., Barnes, M. & Egget, D. (2010) Health-related variables and academic performance among first-year college students: Implications for sleep and other behaviors. *Journal of American Colledge Health*, 49, 125-131.
- Mull, H., & Tietjen-Smith, T. (2014). Physical activity and academic success: Links on a university campus. *Focus On Colleges, Universities, and Schools* 1(8). Retrieved from https://www.researchgate.net/publication/320258767_Physical_activity_and_academic_success_Links_on_a_university_campus0
- Norkus, A. (2012). *Healthy lifestyle in Lithuanian student population: educational diagnostic approach*. Summary of Doctoral Dissertation. Šiauliai, Lithuania.
- Papadaki, A., Hondros, G., Scott, J.A. & Kapsokafalou, M. (2007) Eating habits of University students living at, or away from home in Greece. *Appetite*, 49, 169–176.
- Takomana, G., Kalimbira, A.A. (2012) Weight gain, physical activity and dietary changes during the seven months of first-year university life in

- Malawi. *South African Journal of Clinical Nutrition*, 25(3), 132–139.
- Tarabarina, E.V., Kononec, V.V. (2018) Charakteristika vozmozhnostej formirovaniya gotovnosti studentov vuza k fizkul'turno-ozdorovitel'noj deyatel'nosti i puti ih realizacii. *Teoriya i praktika fizicheskoy kul'tury*, 12, 40–42.
- Wahl-Alexander, Z. & Chomentowski, P. (2018) Impact of a university physical conditioning sport education season on students' fitness levels. *Health Education Journal*, 77(7), 828–836.
- World health Organization (2010). Global recommendations on physical activity for health.