

## QUALITY OF LIFE AND LIFESTYLE ASSESSMENT IN STUDENTS OF MEDICAL AND HUMANITARIAN FACULTIES OF VORONEZH UNIVERSITIES

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Currently, studying the quality and style of life of students is an urgent task due to the need to improve the demographic situation and increase the intellectual potential of the country. This article presents an analysis of the quality of life of medical and humanitarian specialties students of Voronezh universities. We sought to compare these parameters based on the data collected with the help of the SF-36 survey and the HPLP (Health-Promoting Lifestyle Profile) questionnaire. The study involved 262 students of the Burdenko Voronezh State Medical University, Voronezh State University and Voronezh branch of Plekhanov Russian University of Economics aged 18–25 years. We revealed significant differences between educational institutions in a number of key indicators, which highlights the importance of factoring in the specifics of the educational environment when designing health preservation programs for students. According to the results of the survey (SF-36), humanitarian specialties students self-assessed their health better than future medical professionals (median values 70 points vs. 65 points, respectively), same as physical activity and nutrition, as shown by the HPLP questionnaire (20.5 points vs. 18 points and 24 points vs. 23 points, respectively). The resulting data revealing the differences in the quality and lifestyle of students can be used in the development of health and wellbeing improvement recommendations for students, and in the design of comprehensive physical and mental health preservation programs.

**Keywords:** students, specialty, quality of life, lifestyle, SF-36, HPLP-II, survey, healthy lifestyle, health-saving technologies

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**Compliance with ethical standards:** the study met the biomedical ethics requirements. All participants consented to take part voluntarily.

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## ОЦЕНКА КАЧЕСТВА И ОБРАЗА ЖИЗНИ СТУДЕНТОВ МЕДИЦИНСКИХ И ГУМАНИТАРНЫХ СПЕЦИАЛЬНОСТЕЙ ВУЗОВ Г. ВОРОНЕЖА

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На современном этапе актуальной задачей является изучение качества и образа жизни студентов — это обусловлено необходимостью улучшения демографической ситуации и повышения интеллектуального потенциала страны. В статье представлен анализ качества жизни студентов медицинских и гуманитарных специальностей воронежских вузов. Целью исследования было выполнить сравнительную оценку качества и образа жизни студентов медицинских и гуманитарных специальностей вузов г. Воронежа на основании данных опросников SF-36 и «Профиль здорового образа жизни». В исследовании приняли участие 262 студента Воронежского государственного медицинского университета имени Н. Н. Бурденко, Воронежского государственного университета и Воронежского филиала Российского экономического университета имени Г. В. Плеханова в возрасте 18–25 лет. Результаты анализа данных показали значительные различия между учебными заведениями по ряду ключевых показателей, что подчеркивает важность учета специфики образовательной среды при формировании программы поддержания здоровья студентов. Самооценка здоровья студентов-гуманитариев по опроснику SF-36 была выше — медианные значения этого показателя составили 70 баллов против 65 баллов у студентов-медиков. При использовании опросника «Профиль здорового образа жизни» также получены более высокие медианные значения показателей физической активности и питания студентов гуманитарного профиля (20,5 балла против 18; 24 балла против 23). Полученные данные о различиях в качестве и образе жизни студентов могут быть использованы для разработки рекомендаций по улучшению здоровья и благополучия обучающихся, а также для создания комплексных программ поддержания физического и психического здоровья в вузах.

**Ключевые слова:** студенты, специальность, качество жизни, образ жизни, SF-36, HPLP-II, анкетирование, здоровый образ жизни, здоровьесберегающие технологии

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Currently, studying the quality and style of life (QOL) of students is an urgent task, since the state is paying special attention to the youth, who are supposed to solve the demographic problem and form the country's labor and intellectual potential [1]. QOL is a concept that reflects the level of satisfaction of material, spiritual and social needs [2]. According to the definition by the World Health Organization (WHO), QOL is an individual's

perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. Health-related QOL is considered as an integral characteristic of three spheres of human functioning, i.e., physical, mental, and social, from the point of view of the person's subjective perception. Health is a factor affecting the students' subjective perception

of their QOL during the university years. In other words, QOL is a subjective assessment of the state of health. Various questionnaires are used to assess QOL [2–5]. Study [5] compares students' QOL data collected using several questionnaires, including WHOQOL-100, SF-36 Health Status Survey, and QOL Assessment Procedure (O.I. Gubina, 2007).

According to the WHO, a healthy lifestyle is optimal QOL determined by "motivated human behavior aimed at preserving and improving health while affected by the natural and social environmental factors" [2]. A healthy lifestyle is a way of life focused on strengthening the person's health [6]. WHO identifies lifestyle factors that pose risks to health and can lead to its deterioration: poor nutrition, deviant behavior (smoking, alcohol abuse, use of narcotic psychoactive substances), physical inactivity, hygiene-associated behavior (violation of daily routine, work and rest patterns, poor hygiene in the immediate residential environment), medicine-associated behavior (untimely seeking of medical attention, self-medication, lack of self-monitoring of basic health indicators).

A number of studies have revealed a positive trend: more and more young people lead a healthy lifestyle. One of such works [7] has shown that there are more students preferring healthy lifestyle in 2014–2015 than in 1998–2005. The number of students reporting lack of chronic diseases has also increased. However, compared to 1979–1984, the number of smoking young people (both male and female) has increased.

Many studies demonstrate that within the last decade, health indicators and, consequently, QOL of students have been deteriorating [8]. The registered negative impact of the COVID-19 pandemic on QOL of students was associated with weight gain, consumption of harmful products, decreased physical activity, and psychological disorders [9].

Over the past decade, many researches published comparative characteristics of health and QOL of students from different universities [10–22]. The most important factors of students' QOL are material wealth, residential conditions, family, nutrition, performance at the university, and position in society. For young people attending educational institutions, QOL is determined by the specifics of their studies, gender, and curriculum. University students have low mental health indicators [11]. The level of physical activity has a positive effect on QOL [12]. The students of the sports university have a high self-assessment of health.

Medical students exhibit QOL lower than in the general population [13]. In particular, young people studying at non-medical faculties of universities of Voronezh and Sakhalin regions have higher QOL than medical students in the same areas, and underestimated state of health translates into improper control over it [14–16]. Only 12.3% of the surveyed students of I.M. Sechenov First Moscow Medical University have the QOL assessment at a high level [17].

As a rule, male students have higher QOL score than their female counterparts, as shows by surveys conducted at the Medical Institute of the RUDN University, Khanty-Mansiysk State Medical Academy and the Medical Institute of Surgut State University [18–20].

Study [21], conducted at the Siberian Medical University, provides data on how QOL changes depending on the year, with second and third year students being fairly dissatisfied therewith, and this indicator starts to go up from the fourth year only.

The quality of life of students is negatively affected by such factors as bad habits, high academic workload, intense stress associated with the studies and exams, irrational daily routine, low physical activity, financial and housing problems [13, 21–23]. Accordingly, improvement of the general state

of health resulting from adherence to the healthy lifestyle patterns can raise QOL. Health-saving technologies aimed at creating optimal hygienic and psychophysiological conditions in the higher educational institution environments aid in making the students' QOL better.

This study aimed to compare QOL and lifestyle of medical and non-medical students of Voronezh based on the data collected with the help of the SF-36 survey and the Health-Promoting Lifestyle Profile (HPLP) questionnaire.

## METHODS

The study involved students from three higher educational institutions: Burdenko Voronezh State Medical University (VSMU), Voronezh State University (VSU), and Voronezh Branch of Plekhanov Russian University of Economics (PRUE); its timeframe was from February to May 2024. The participants were 262 students aged 18 to 25, 79 (30.2%) male and 183 (69.8%) female. The distribution by educational institutions was as follows: VSMU — 146 students (55.7%), VSU — 41 students (15.7%), PRUE — 75 students (28.6%). The results were divided by specialization, first group including VSMU students (medical), second — VSU and PRUE students (humanitarian).

To assess QOL, we used the SF-36 (Short Form Health Survey) Medical Outcomes Study Questionnaire, which reveals the overall well-being and degree of satisfaction with those aspects of human life that affect the state of health [3]. The questionnaire consists of 36 items grouped into eight domains: physical functioning (SF-36/PCS/PF), role physical (SF-36/PCS/RP), bodily pain (SF-36/PCS/BP), general health (SF-36/PCS/GH), vitality (SF-36/MCS/V), social functioning (SF-36/MCS/SF), role emotional (SF-36/MCS/RE), and mental health (SF-36/MCS/MH). These domains support two summary scores, Physical Component Summary (PCS) and Mental Component Summary (MCS). The results are presented as percentages from 0 to 100, where 100% correspond to perfect health. The higher the scores by domains of the questionnaire, the better is the self-assessment of a person's health. There is a particularly close relationship between the said self-assessment and SF-36 domains of physical functioning, role physical, general health, and vitality. These domains directly reflect the physical state and health-related limitations. The fewer physical problems a person experiences, the better is the resulting overall health assessment. Despite subjectivity, self-assessment of health is of great practical importance, as it helps to identify "hidden" health problems.

To assess the healthiness of the lifestyle, we used the Health-Promoting Lifestyle Profile (HPLP) questionnaire, which measures the multicomponent structure of healthy lifestyle and includes 6 subscales: health responsibility (HPLP/HR), physical activity (HPLP/PA), nutrition (HPLP/N), spiritual growth (HPLP/SG), interpersonal relationships (HPLP/IR), and stress management (HPLP/SM). High scores on all subscales indicate that the respondent practices a mature health-promoting behavior.

For statistical analysis of the data, we used StatTech v.4.2.7 (StatTech; Russia). Kolmogorov–Smirnov test and Shapiro–Wilk tests enabled assessment of the conformity of quantitative indicators to the normal distribution patterns. The values outside normal distribution were described with the help of the median (Me) and the quartiles ( $Q_1$ – $Q_3$ ). The data by category were given in absolute values and percentages. For comparison of three or more groups by the quantitative indicators with distribution outside of the norm, we applied the Kruskal–Wallis test and Holm-adjusted Dunn's test. The differences were

Table 1. SF-36 results by specialization

Indicators	Categories	Educational institution			<i>p</i>
		Me	Q <sub>1</sub> -Q <sub>3</sub>	<i>n</i>	
SF-36/PCS/PF	medical specialty	95	85.00–100.00	146	0.06
	humanitarian specialty	95	78.75–100.00	116	
SF-36/PCS/RP	medical specialty	50	25.00–100.00	146	0.123
	humanitarian specialty	75	47.25–100.00	116	
SF-36/PCS/BP	medical specialty	77	57.00–100.00	146	0.203
	humanitarian specialty	75	52.00–100.00	116	
SF-36/PCS/GH	medical specialty	65	50.00–75.00	146	0.009*
	humanitarian specialty	70	60.00–85.00	116	
SF-36/MCS/MH	medical specialty	56	44.00–72.00	146	0.418
	humanitarian specialty	62	44.00–73.00	116	
SF-36/MCS/RF	medical specialty	33	0.00–100.00	146	0.020*
	humanitarian specialty	67	33.00–100.00	116	
SF-36/MCS/SF	medical specialty	75	50.00–87.00	146	0.987
	humanitarian specialty	75	54.00–87.00	116	
SF-36/MCS/V	medical specialty	52.5	40.00–70.00	146	0.048*
	humanitarian specialty	60.00	40.75–70.00	116	

Note: \* — significant differences in indicators ( $p < 0.05$ ).

considered significant at  $p < 0.05$ . The study was carefully planned to minimize errors and ensure high reliability of the data.

## RESULTS

The SF-36 survey returned significantly different results in several domains describing physical and mental components of health: general health (PCS/GH), role emotional (MCS/RE), and vitality (MCS/V). Table 1 gives the data from each domain in percents, and the significant differences between the groups.

Among all the participants, medical students assessed their general health (PCS/GH) worse than those attending humanitarian faculties, with the median values being 65 vs. 70 points, respectively.

Role emotional (MCS/RE) domain also presented significant differences: the median values were 33 points for future medical professionals vs. 67 points for those learning humanitarian sciences. It is possible that the latter have more opportunities to express emotions and interact socially due to the specifics of the educational process, which has a positive effect on their emotional well-being. The low scores of the Burdenko VSMU students may stem from the part-time employment habitual among them, which translates into shortage of free time and higher levels of psychoemotional stress.

The vitality indicator (MCS/V) also turned out to have higher values among students of humanitarian specializations: the medians were 60 points vs. 52.5 points for medical students. The differences here can be explained by more intense daily routines of the latter combined with a lower level of physical activity, both resulting from time constraints imposed by busy schedules and the need to move between different university buildings and medical organizations.

Thus, VSU and PRUE students rated their general health (PCS/GH) and vitality (PKZ/ZHA) higher than students of medical specialties.

Table 2 gives the results of the analysis of data collected with the HPLP questionnaire. On the subscales PA, N, IR, and SM, the results shown by medical and non-medical students were significantly different.

The questionnaire showed that those attending humanitarian faculties were more active physically than future medics: the median values of this indicator were 20.5 points vs. 18 points, respectively.

Nutrition was another matter the approaches to which differed significantly: humanitarian faculty students scored 24 points on this subscale, while medical students had 23 points. This difference may probably be explained by the latter lacking time for proper meals since they have to regularly move from one university building to another.

In terms of interpersonal relationships, humanitarian students also scored higher than those studying medicine: the medians were 31 points vs. 29 points, respectively. This difference may stem from a greater number of group tasks and projects typical for humanitarian education, which help develop communication skills and strengthen social ties.

On the stress management subscale, VSU and PRUE students also scored more than VSMU students, 22 points against 20 points, respectively. The probable reason behind this difference is the curriculum at humanitarian faculties, which includes disciplines aimed at developing stress tolerance and emotional intelligence (for example, "Personality psychology and its self-development"), and enables students to effectively prevent the negative effects of stress associated with studying at a university.

## DISCUSSION

This study revealed significant differences in the QOL of students attending medical and humanitarian faculties of Voronezh universities. The data collected using the SF-36 questionnaire show that the highest QOL assessment was given by the humanitarian students from VSU and PRUE. Compared to the values scored by medical students, they had better results in the domain of health, role emotional (MCS/RE), and vitality.

The revealed differences in QOL are consistent with data from other studies. For example, in the Sakhalin region, non-medical students showed a higher QOL than those specializing in medicine [15]. Medical undergraduates rate

Table 2. HPLP results by specialization

Indicators	Categories	Educational institution			<i>p</i>
		Me	Q <sub>1</sub> –Q <sub>3</sub>	<i>n</i>	
HPLP/HR	medical specialty	23	19.00–26.00	146	0.536
	humanitarian specialty	23	18.00–27.25	116	
HPLP/PA	medical specialty	18	13.00–21.00	146	< 0.001*
	humanitarian specialty	20.5	16.00–28.00	116	
HPLP/N	medical specialty	23	19.00–26.00	146	0.003*
	humanitarian specialty	24	20.00–31.00	116	
HPLP/N	medical specialty	28	24.00–31.00	146	0.273
	humanitarian specialty	28.5	24.75–32.00	116	
HPLP/IR	medical specialty	29	26.00–32.00	146	0.003*
	humanitarian specialty	31	27.00–36.00	116	
HPLP/SM	medical specialty	20	18.00–24.00	146	0.009*
	humanitarian specialty	22.00	19.00–27.00	116	

Note: \* — significant differences in indicators ( $p < 0.05$ ).

their emotional status, role functioning, and general well-being extremely poorly [16]. According to the authors, the reasons for such low scores should be looked for in the organization of the studying process, problematic accommodation, and suboptimal timetables. I.B Ushakov, E.P Melikhova et al. have reached similar conclusions, pointing to the heavy weekly academic workload of VSMU students and its irrational distribution through days and weeks [24]. In addition, medical students have to use their breaks to travel from one facility to another. Study [25] highlights the greater load on the part of medical students compared to non-medical specializations.

Second questionnaire, HPLP, has also shown that humanitarian students of Voronezh score higher on most subscales (physical activity, nutrition, interpersonal relationships, and stress management), which reflects a sufficient level of awareness about their health, and mature behavior aimed at preservation of health. Students of VSU and PRUE devote more time to physical activity and proper nutrition. These factors have a positive effect on their health, increasing QOL [26]. Study [21] points to the lack of time for physical activity among medical students.

Thus, the data from the two questionnaires reveal a lower QOL among future medical doctors, and their lax attitude towards the principles of healthy lifestyle. This may be due to certain specifics of the educational process, the necessary contacts with patients and part-time employment, as well as poor implementation of psychological support programs that are especially essential for medical specialties [22, 27,

28]. These assumptions are confirmed by the lower scores shown by VSMU students in the role emotional domain of SF-36 and on the stress management subscale of the HPLP questionnaire.

In medical universities, curricula and teaching methods are focused on the intensive consumption of large amounts of specialized knowledge and preparation for professional activities involving a high degree of responsibility. This creates a significant level of stress, worsens general well-being and vitality. Therefore, it is necessary to pay more attention to the organization of health preservation programs in medical universities [29, 30].

## CONCLUSIONS

The data obtained in the context of this study demonstrate the need to adapt educational programs and extracurricular activities to the specifics of the studying process and needs of students of each educational institution. Effective implementation of comprehensive health improvement programs can significantly boost the students' QOL and academic performance. The data underscore the importance of developing and implementing programs aimed at strengthening students' physical and mental health, as well as increasing their awareness of a healthy lifestyle. The study confirms the importance of further investigation of the relationship between educational environment and well-being of students, which can form the basis of education and health policy at the level of higher education institutions.

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