

HELEN PHAGAVA, MARI GETSADZE, NATALIE PAGHAVA, IRAKLI MCHEDLISHVILI

PSYCHOLOGICAL DISTRESS AMONG MEDICAL STUDENTS: DEPRESSION, ANXIETY AND STRESS

Department of Epidemiology and Biostatistics, Tbilisi State Medical University, Georgia

Doi: <https://doi.org/10.52340/jecm.2026.03.04>*ელენე ფაღავა, მარიამ გენაძე, ნატალი ფაღავა, ირაკლი მჭედლიშვილი*

სამედიცინო უნივერსიტეტის სტუდენტებში დეპრესიის, შფოთვისა და სტრესის დონე (DASS)

ეპიდემიოლოგიისა და ბიოსტატისტიკის დეპარტამენტი, თბილისის სახელმწიფო სამედიცინო უნივერსიტეტი, საქართველო

რეზიუმე

შესავალი: ფსიქიკური ჯანმრთელობის პრობლემები სულ უფრო აქტუალური ხდება სტუდენტებში, განსაკუთრებით სამედიცინო უნივერსიტეტის სტუდენტებში, რომლებიც განიცდიან მაღალ აკადემიურ დატვირთვას, კლინიკურ პასუხისმგებლობებსა და ცხოვრების სტილთან დაკავშირებულ სტრესულ ფაქტორებს.

მიზანი: კვლევის მიზანი იყო თბილისის სახელმწიფო სამედიცინო უნივერსიტეტის სტუდენტებში დეპრესიის, შფოთვისა და სტრესის დონის შეფასება DASS-21 სკალის გამოყენებით.

მეთოდები: ჩატარდა რაოდენობრივი, ერთმომენტიანი ჯვარედინი კვლევა თბილისის სახელმწიფო სამედიცინო უნივერსიტეტის 280 სტუდენტს შორის. კვლევაში მონაწილეობდნენ ქართულენოვანი და ინგლისურენოვანი მედიცინის ფაკულტეტის IV, V და VI კურსის სტუდენტები, ასევე ქართულენოვანი საზოგადოებრივი ჯანდაცვისა და მენეჯმენტის ფაკულტეტის II, III და IV კურსის სტუდენტები. მონაცემები შეგროვდა კონფიდენციალური და ანონიმური ელექტრონული კითხვარის საშუალებით, რომელიც განთავსებული იყო Google Forms-ის პლატფორმაზე. დეპრესიის, შფოთვისა და სტრესის შესაფასებლად გამოყენებულ იქნა DASS-21 სკალა. მონაცემები შეყვანილ იქნა EpiData-ში და გაანალიზდა Stata 14.0-ის გამოყენებით.

შედეგები: კვლევამ გამოავლინა დეპრესიის, შფოთვისა და სტრესის მაღალი გავრცელება სტუდენტებში. მძიმე ან უკიდურესად მძიმე დეპრესია აღენიშნებოდა რესპონდენტთა 26.43%-ს, შფოთვა — 22.86%-ს, ხოლო სტრესი — 16.79%-ს. საერთო ჯამში, ყველაზე გავრცელებული მდგომარეობა იყო შფოთვა, რომლის სხვადასხვა ხარისხის სიმპტომები დაფიქსირდა სტუდენტთა 48.22%-ში. დეპრესიის, შფოთვისა და სტრესის მაღალი დონე ასოცირებული იყო სოციალურ, ჯანმრთელობისა და ცხოვრების სტილის ფაქტორებთან, მათ შორის დაბალ სოციალურ-ეკონომიკურ სტატუსთან, ძილის დარღვევებთან, მშობლებთან არადაამაკმაყოფილებელ ურთიერთობასთან, დაბალ თვითშეფასებასთან, არჩეული პროფესიით უკმაყოფილებასთან, საუზმის გამოტოვებასა და ენერგეტიკული სასმელების მოხმარებასთან. სტუდენტთა მნიშვნელოვანი ნაწილი საკუთარ ცხოვრებას სტრესულად აღიქვამდა.

დასკვნა: დეპრესია, შფოთვა და სტრესი ფართოდ არის გავრცელებული სამედიცინო უნივერსიტეტის სტუდენტებში და დაკავშირებულია მრავალ პირად, სოციალურ, აკადემიურ და ცხოვრების სტილთან დაკავშირებულ ფაქტორთან. მიღებული შედეგები მიუთითებს უნივერსიტეტის დონეზე ფსიქიკური ჯანმრთელობის სისტემური მხარდაჭერის, პრევენციული ღონისძიებების, სტრესის მართვის პროგრამებისა და ხელმისაწვდომი ფსიქოლოგიური სერვისების დანერგვის აუცილებლობაზე.

Introduction: In the modern world, mental health has become an increasingly relevant issue, especially among university students. Medical students are particularly vulnerable due to both academic and non-academic stressors, which significantly impact their psychological well-being [11]. Given the above, it is not surprising that higher levels of depression, anxiety, and stress are observed among medical

students compared to students in other faculties [9], as they experience excessive academic workload. They often report fatigue, insomnia, headaches, and some even a loss of interest in the profession [6].

Objective: The aim of this study was to assess the levels of depression, anxiety and stress among students at Tbilisi State Medical University, Georgia using the DASS-21 scale.

Material and methods: The study was conducted using cross-sectional design. A total of 280 students from the Georgian- (n=125 (44.65%) of the IV, V and VI years) and English-language (n=111 (39.64%) of the IV, V and VI years) programs of Medicine and Georgian-language Faculty of Public Health (n=44 (15.71%) of the II, III and IV years) of the Tbilisi State Medical University participated in the survey. The age range of the respondents was 18-33. Females, with an average age of 22.08 ± 1.7 years, and males - 22.74 ± 2.2 years.

The participants were selected using a random cluster sampling method. The survey was confidential, anonymous and conducted electronically via Google Forms. The questionnaire link was sent to students according to their language of communication.

The DASS-21 scale (Depression, Anxiety, Stress Scale), which consists of 21 statements, was selected as the research instrument [2]. The questionnaire in English was also translated into Georgian and both versions were used. Apart from DASS-21, the questionnaire contained questions on socio-demographic and lifestyle issues as well. At the beginning the aim of the study was explained, and the anonymity of the study and the voluntary nature of participation were emphasized. The survey was approved by the Department of Epidemiology and Biostatistics. The students were asked to respond for the previous week. Depression, anxiety, and stress were determined by summing the scores in the relevant sections [11] and then interpreting them [1].

An electronic replica of the questionnaire was prepared in Epidata, where all responses were entered individually. Each questionnaire was assigned its own unique number. Subsequently, the data were exported to Stata 14.0, where the results were analyzed using descriptive and analytical research methods.

Results: "Severe" or "Extremely severe" depression was seen in 26.43% of the respondents, anxiety – in 22.86%, and stress – in 16.79% [Table 1]. Symptoms of depression, anxiety and stress were more prevalent among female students (D – $p=0.919$, A – $p=0.206$, S – $p=0.058$) [Table 2].

Table 1: Levels of Depression, Anxiety and Stress among students (General data)

	Depression (%)	Anxiety (%)	Stress (%)
Normal	41.07	51.79	60.00
Mild	11.07	9.29	12.50
Moderate	21.43	16.07	10.71
Severe	11.79	6.43	10.36
Extremely Severe	14.64	16.43	6.43

Table 2: Levels of Depression, Anxiety and Stress by gender

	Depression (%)		Anxiety (%)		Stress (%)	
	Female	male	Female	male	Female	male
Normal	41.15	41.38	48.44	59.77	63.10	36.90
Mild	10.42	11.49	8.33	11.49	14.58	8.05
Moderate	20.83	22.99	17.19	13.79	9.90	11.49
Severe	13.02	9.20	6.77	4.60	12.50	5.75
Extremely Severe	14.58	14.94	19.27	10.34	7.81	3.45
	P=0.919		P=0.206		P=0.058	

There were also noticeable tendencies indicating that senior-year students were more likely to experience depression and stress compared to junior-year students ($D - p=0.334$, $S - p=0.947$) [Table 3].

According to the data above, 26.51% of 215 senior-year students suffer from "Severe" or "Extremely Severe" depression, 22.79% from anxiety disorder, and 17.68% from stress. Also 26.15% of 65 junior-year students suffer from "Severe" or "Extremely Severe" depression, 23.07% - from anxiety disorder and 13.84% - from stress [Table 3].

Table 3: Levels of Depression, Anxiety and Stress by year of study

	Depression (%)		Anxiety (%)		Stress (%)	
	senior-year	junior-year	senior-year	junior-year	senior-year	junior-year
Normal	38.14	50.77	51.63	52.31	59.53	61.54
Mild	11.63	9.23	8.84	10.77	11.63	15.38
Moderate	23.72	13.85	16.74	13.85	11.16	9.23
Severe	12.09	10.77	6.05	7.69	11.63	6.15
Extremely Severe	14.42	15.38	16.74	15.38	6.05	7.69
	P=0.334		P=0.947		P=0.947	

According to the above data, 24.32% of 111 foreign students suffer from "Severe" or "Extremely Severe" depression, 22.52% - from anxiety disorder, and 10.81% - from stress. Of the 169 Georgian students, 27.81% have "Severe" or "Extremely Severe" depression, 23.08% - anxiety, and 20.71% - stress [Table 4].

Table 4: Level of Depression, Anxiety and Stress by language of study

	Depression (%)		Anxiety (%)		Stress (%)	
	Foreigner	Georgian	Foreigner	Georgian	Foreigner	Georgian
Normal	49.55	35.50	47.75	54.44	65.77	56.21
Mild	9.91	11.83	11.71	7.69	15.32	10.65
Moderate	16.22	24.85	18.02	14.79	8.11	12.43
Severe	12.61	11.24	2.70	8.88	8.11	11.83
Extremely Severe	11.71	16.57	19.82	14.20	2.70	8.88
	P=0.138		P=0.115		P=0.084	

Of the 236 medical students 25.85% had "Severe" or "Extremely Severe" depression, 22.46% - anxiety, and 15.25% - stress. Also 44 of public health students: 29.55% had "Severe" or "Extremely Severe" depression, 25% - anxiety, and 25% - stress ($P=0.050$) [Table 5]. Complete results are presented in Table 6.

Table 5: Levels of Depression, Anxiety and Stress by faculty

	Depression (%)		Anxiety (%)		Stress (%)	
	Medicine	Public Health	Medicine	Public Health	Medicine	Public Health
Normal	39.41	50.00	50.85	56.82	59.75	61.36
Mild	12.71	2.27	11.02	0.00	13.56	6.82
Moderate	22.03	18.18	15.68	18.18	11.44	6.82
Severe	11.02	15.91	5.93	9.09	10.59	9.09
Extremely Severe	14.83	13.64	16.53	15.91	4.66	15.91
	P=0.222		P=0.212		P=0.050	

Table 6: Levels of Depression, Anxiety and Stress among students of different year

	Anxiety/Depression/Stress				
	Normal	Mild	Moderate	Severe	Extremely Severe
Eng Medicine IV	49.02/41.18/58.82	5.88/5.88/13.73	17.65/23.53/9.80	11.76/1.96/13.73	15.69/27.45/3.92
Eng Medicine V	40.00/56.67/76.67	16.67/13.3/13.33	20.00/13.33/3.33	13.33/3.33/3.33	10.00/13.33/3.33
Eng Medicine VI	60.00/50.00/66.67	10.00/20.00/20.00	10.00/13.33/10.00	13.33/3.33/3.33	6.67/13.33/0.00
Ge Medicine IV	31.65/59.49/54.43	17.72/10.13/15.19	29.11/12.66/13.92	7.59/7.59/12.66	13.92/10.13/3.80
Ge Medicine V	17.39/39.13/52.17	8.70/17.39/4.35	30.43/8.70/17.39	17.39/8.70/13.04	26.09/26.09/13.04
Ge Medicine VI	39.13/47.83/56.52	13.04/4.35/8.70	17.39/21.74/13.04	8.70/13.04/13.04	21.74/13.04/8.70
Ge Public Health II	68.42/73.68/78.95	0.00/0.00/0.00	10.53/10.53/5.26	10.53/5.26/5.26	10.53/10.53/10.53
Ge Public Health III	23.08/23.08/38.46	7.69/0.00/7.69	30.77/46.15/15.38	30.77/15.38/23.08	7.69/15.38/15.38
Ge Public Health IV	50.00/66.67/58.33	0.00/0.00/16.67	16.67/0.00/0.00	8.33/8.33/0.00	25.00/25.00/25.00

Discussion

Depression. According to the results, the prevalence of depressive symptoms was significant. A considerable proportion of students had different levels of depression, including 14.64% with an extremely severe level. The highest level was recorded among those who had a strained relationship with their parents, those who worked in a clinic, or those who assessed their own appearance negatively. This reflects the fact that emotional support and self-esteem have an important influence on students' mental state. Statistically significant associations were revealed with the following factors:

- relationship with parents ($P = 0.002$). When a young person cannot speak sincerely with their parents, this leads to alienation, which is often a reason for the onset of depression.
- socioeconomic status ($P = 0.034$). Due to low socioeconomic status, students often have to work alongside their studies, which subsequently leads to exhaustion of energy and fatigue; inequality and fear of the future — all of this causes a depressive background;
- satisfaction with the chosen profession ($P = 0.000$). Due to excessive academic workload, students in the medical field often report insomnia, fatigue, and headaches — it may be assumed that all of this often causes them to lose interest in their chosen profession [6];
- subjective perception of a stressful life ($P = 0.000$). This may be due to the fact that a stressful life may increase the intensity of depression;
- sleep pattern ($P = 0.000$). People with depression often have sleep disturbances.

Anxiety. The level of anxiety was also found to be high in the respondents — 48.22% experienced symptoms of varying severity, including 16.43% at an extremely severe level. The results showed that anxiety was more prevalent among female students, which is consistent with the data of the World Health Organization [12], a study conducted in Egypt in 2017 [4], and a study conducted in China in 2020 [5], although no statistically significant difference was found according to gender ($p = 0.206$). It is also

noteworthy that anxiety was more prevalent among students than depression and stress, which is consistent with data from a study conducted at a Jordanian college in 2019 [3] and data from Malaysia in 2013 [10]. Statistically significant associations for anxiety were observed with:

- relationship with parents ($P = 0.008$). Parents often create excessive expectations toward their children, which causes constant anxiety in young people — they think that they will make some mistake and will not be able to meet their parents' expectations;
- faculty/year of study ($P = 0.046$);
- socioeconomic status ($P = 0.016$). Low socioeconomic status creates constant pressure: tuition fees, bills, food, transport — all of this causes constant anxiety in young people.

Stress. Stress has become one of the most common conditions, especially among senior students. Data analysis showed that low self-esteem, irregular sleep, skipping breakfast, and consumption of energy drinks were associated with significantly higher levels of stress. For example:

- skipping breakfast ($P = 0.009$). Skipping breakfast may become a cause of stress because refusing breakfast leads to a decrease in blood sugar levels, which may cause irritability, fatigue, and dizziness, which may subsequently develop into stress;
- consumption of energy drinks ($P = 0.021$). One of the risk factors for constant stress among students may also be the consumption of energy drinks, because students often use them to overcome fatigue and improve concentration in order to subsequently continue the process of studying or working. Energy drinks contain caffeine, which stimulates the central nervous system and increases cortisol levels, and regularly high cortisol causes chronic stress;
- subjective perception of a stressful life ($P = 0.000$). Studies have shown that a stressful life may cause anxiety and depression in people, which subsequently becomes the reason for a whole range of problems such as insomnia, low self-esteem, and reduced quality of life [4,8].

Overall Analysis. It was particularly interesting that, although some students studied in the same environment, personal and family factors had a significant influence on their psychological well-being. For example, a tense relationship with parents and socioeconomic problems showed a significant association with depression and anxiety. At the same time, the statistically significant associations revealed in the study show that preventive interventions should be multifactorial — academic and financial support alone is not sufficient. It is necessary to strengthen psychological support systems.

Limitations. As a limitation of the study, we can name the medium sample size; more interesting results could have been obtained with a larger sample. It would also be interesting to compare the results obtained among medical university students with students of other profiles.

Conclusion: As a result of the study, it was revealed that the levels of depression, anxiety, and stress are widely prevalent among medical university students, and this is determined by many factors. Significant associations ($p < 0.05$) were recorded with social, health-related, and lifestyle variables.

Statistically significantly higher levels of depression, anxiety and stress were found in students who had: low socio-economic status ($p = 0.034$), sleep disorders ($p = 0.000$), unsatisfactory relationship with parents ($p = 0.002$), low self-esteem ($p = 0.000$), dissatisfaction with the chosen profession ($p = 0.000$). It is also noteworthy and alarming that a significant proportion of students perceive their own life as stressful.

The study highlights the widespread nature of mental health issues among medical students and emphasizes the importance of implementing preventive strategies, providing psychosocial support and integrating psychological services within the educational system.

References:

1. Basudan S, Binanzan N, Alhassan A. Depression, anxiety and stress in dental students. *Int J Med Educ.* 2017 May 24;8:179-186. doi: 10.5116/ijme.5910.b961.
2. Christian U. Krägeloh, Mohsen Alyami and Oleg N. Medvedev, School of Psychology, The University of Waikato, Hamilton, New Zealand. International Handbook of Behavioral Health Assessment Depression Anxiety Stress Scales (DASS-21) in International Contexts, Springer Nature Switzerland AG 2023, 10.1007/978-3-030-89738-3_15-1
3. Dalky HF, Gharaibeh A. Depression, anxiety, and stress among college students in Jordan and their need for mental health services. *Nurs Forum.* 2019 Apr;54(2):205-212. doi: 10.1111/nuf.12316.
4. Fawzy M, Hamed SA. Prevalence of psychological stress, depression and anxiety among medical students in Egypt. *Psychiatry Res.* 2017 Sep;255:186-194. doi: 10.1016/j.psychres.2017.05.027.
5. Gao W, Ping S, Liu X. Gender differences in depression, anxiety, and stress among college students: A longitudinal study from China. *J Affect Disord.* 2020 Feb 15;263:292-300. doi: 10.1016/j.jad.2019.11.121.
6. Mustafa S, Mohammed E, Makkawi S, Mohammed Y. Mental Distress among Medical Students in Khartoum, Sudan 2022. *Open Journal of Psychiatry.* 2022. 12, 345-358. doi: 10.4236/ojpsych.2022.124026.
7. Oei TPS, Sawang S, Goh YW, Mukhtar F. Using the Depression Anxiety Stress Scale 21 (DASS-21) across cultures. *Int J Psychol.* 2013;755535. 10.1080/00207594.2012.755535
8. Pidgeon A, McGrath S, Magya H, Stapleton P, Lo B. Psychosocial Moderators of Perceived Stress, Anxiety and Depression in University Students: An International Study. *Open Journal of Social Sciences.* 2014. 23-31. doi: 10.4236/jss.2014.211004.
9. Saravanan, Coumaravelou, Wilks, Ray, Medical Students' Experience of and Reaction to Stress: The Role of Depression and Anxiety, *The Scientific World Journal*, 2014, 737382, 8 pages, 2014. <https://doi.org/10.1155/2014/737382>
10. Shamsuddin K, Fadzil F, Ismail WS, Shah SA, Omar K, Muhammad NA, Jaffar A, Ismail A, Mahadevan R. Correlates of depression, anxiety and stress among Malaysian university students. *Asian J Psychiatr.* 2013 Aug;6(4):318-23. doi: 10.1016/j.ajp.2013.01.014.
11. Teh C, Ngo C, Zulkifli R, Vellasamy R, Suresh K. Depression, Anxiety and Stress among Undergraduate Students: A Cross Sectional Study. *Open Journal of Epidemiology*., 2015. 5, 260-268. doi: 10.4236/ojepi.2015.54030

HELEN PHAGAVA, MARI GETSADZE, NATALIE PAGHA VA, IRAKLI MCHEDLISHVILI

PSYCHOLOGICAL DISTRESS AMONG MEDICAL STUDENTS:

DEPRESSION, ANXIETY AND STRESS

Department of Epidemiology and Biostatistics, Tbilisi State Medical University, Georgia

SUMMARY

Background: Mental health problems are increasingly common among university students, particularly among medical students, who are exposed to high academic workload, clinical responsibilities, and lifestyle-related stressors.

Objective: The aim of this study was to assess the levels of depression, anxiety, and stress among students of Tbilisi State Medical University using the DASS-21 scale.

Methods: A quantitative cross-sectional study was conducted among 280 students of Tbilisi State Medical University. Participants included Georgian- and English-language medical students from the fourth, fifth, and sixth years, as well as Georgian-language students of the Faculty of Public Health and Management. A confidential and anonymous electronic questionnaire was distributed via Google Forms. The DASS-21 scale was used to assess depression, anxiety, and stress. Data were entered into EpiData and analyzed using Stata 14.0.

Results: The study revealed a high prevalence of depression, anxiety, and stress among students. Severe or extremely severe depression was observed in 26.43% of respondents, anxiety in 22.86%, and stress in 16.79%. Anxiety was the most prevalent condition overall, with 48.22% of students reporting symptoms of varying severity. Symptoms of depression, anxiety and stress were more prevalent among female students, though not in a statistically significant way. Senior-year students were more likely to experience depression and stress compared to junior-year students. Higher levels of depression and anxiety were significantly associated ($p<0.05$) with several social, health-related, and lifestyle factors including low socioeconomic status, sleep disturbances, relationships with parents, low self-esteem, satisfaction with the chosen profession. Higher stress was related to skipping breakfast ($p=0.009$) and consumption of energy drinks ($p=0.021$). A significant proportion of students also perceived their lives as stressful.

Conclusion: Depression, anxiety, and stress are widely prevalent among medical university students and are associated with multiple personal, social, academic, and lifestyle-related factors. The findings highlight the need for systematic mental health support, preventive interventions, stress management programs, and accessible psychological services within the university setting.

Keywords: depression, anxiety, stress, DASS-21, medical students, mental health, Georgia

