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The invisible wounds of war: a study of insomnia and psychological distress among healthcare students in conflict-affected Syria

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Abstract

Background Medical students globally face high rates of depression, anxiety, and burnout, exacerbated by stressful academic environments and recent crises like the COVID-19 pandemic. This is particularly critical in conflict-affected regions like Syria, where psychological support is limited. This study aims to investigate the prevalence and impact of these mental health issues among healthcare students in such challenging contexts.

Methods This cross-sectional study surveyed 507 healthcare students (medicine, dentistry, pharmacy) at the University of Kalamoon between June 26 and July 24, 2025. Data were collected using the Insomnia Severity Index (ISI) and the Depression, Anxiety, and Stress Scale (DASS-21). Statistical analysis was performed using SPSS with Mann-Whitney U and Kruskal-Wallis H tests.

Results Subthreshold insomnia (44.8%), moderate depression (26.2%), and extremely severe anxiety (24.9%) were common in the sample. Female students reported significantly higher anxiety ($p=0.033$). Pharmacy students demonstrated the highest levels of depression, anxiety, stress, and insomnia (p-values = 0.001 to 0.042). Low income was significantly associated with elevated depression and insomnia ($p=0.026$, $p=0.022$). Overall, the direction of associations showed that female gender, pharmacy faculty, low income, and prior psychiatric history were linked to worse psychological outcomes.

Conclusion Our findings underscore the urgent need for more comprehensive, broader, and multicenter studies, both at the level of Syrian universities and the Middle East as a whole, to gain a deeper understanding of students' mental health and the factors influencing it. In addition, there is an urgent need for preventive and therapeutic psychological interventions, including counseling, psychological support, and health education.

Keywords Medical students, Stress, Depression, DASS-21, Insomnia, Anxiety, War

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Background

Mental health has become a major concern recently, especially among university students [1]. A large number of medical students suffer from psychological issues such as depression and anxiety, which have negatively affected their academic performance and scientific level, especially with the unstable academic system and the difficult circumstances such as wars and pandemics that medical students have been facing lately [2]. Physicians and medical students often conceal symptoms of mental illness due to fear of stigmatization. Consequently, they suffer from low levels of help-seeking for their mental health problems [3]. Medical schools have long been known as highly stressful environments globally. Previous research has pointed to long study hours, emotional burden, heavy academic workload, and significant financial pressure as major sources of stress. Therefore, it is not surprising that medical students exhibit higher rates of depression compared to the general population [4]. Depression is defined as a disorder involving a significant decline in mood, a pessimistic outlook on the future, or a loss of interest in engaging in favorite hobbies and activities [5]. In 2014, over 300 million people worldwide suffered from depression [6]. Stress, within its natural limits, is a healthy feeling. However, when excessive, it negatively impacts mental health and results in numerous consequences affecting academic productivity. These include memory impairment, emotional disturbances, constant anxiety, and lack of self-confidence, in addition to physiological symptoms such as muscle pain and headaches [5]. On the contrary, anxiety's symptoms are present for at least six months as uncontrolled illogical thoughts and feelings causing sleep and concentration problems accompanied by somatic symptoms like head and stomach pain [7]. Several prior studies have found that burnout rates reach 54.3% among professionals and 45% among medical students [8]. The term "burnout" was first described by Herbert Freudenberger in the 1970s. Burnout is defined as a state of physical and mental exhaustion, according to the International Classification of Diseases (ICD) [8] Additionally, sleep is one of the most essential and necessary aspect for ensuring the stability of physical, mental, and behavioral health. Chronic sleep deprivation negatively affects cognitive and mental performance, and in the long term, may lead to heart issues. Doctors recommend that older adults, aged 46 to 60, should get at least 7 h of sleep each night, while younger adults need more sleep (up to 9 h per night on a regular basis) due to the different nature and immunity of age groups [9]. The COVID-19 pandemic exacerbated these pre-existing challenges. It revealed further effects on medical students' psychological health by suspending traditional medical education, increasing isolation feelings and fear of getting infected, and adding other socioeconomic pressures. Numerous studies documented the rise in depression and anxiety during the pandemic among medical students, especially in the contexts where psychological and social support was limited [10]. These global issues are critically relevant in specific conflict-affected settings, such as Syria. Considering that Syria is a country emerging from a 14-year war, the conflict has undoubtedly affected individuals' mental health in addition to physical health. These years have left significant psychological consequences, with the World Health Organization (WHO) estimating that one in five individuals impacted by conflict has suffered from a variety of mental disorders [11]. The consequences of the war in Syria were not limited to affecting the mental and physical health of individuals, but extended to directly impacting educational and academic infrastructure. Many university institutions suffered either partial destruction or the loss of their teaching and academic staff, disrupting the supportive educational environment and weakening one of the most important pillars upon which students depend [12]. Therefore, in this cross-sectional study, we aim to measure the prevalence of stress, anxiety, depression, and insomnia among healthcare students, specifically those studying medicine, dentistry and pharmacy in the University of Kalamoon (UOK), to better understand the mental health challenges they face and to inform potential strategies for support and intervention.

Methods

Study design

This cross-sectional study was specifically designed in descriptive and multicultural ways to target healthcare students at Kalamoon Private University, located in an area near Damascus, Syria. The study aimed to assess levels of anxiety, depression, stress and insomnia, and to analyze their associations with sociodemographic factors under the current political and economic circumstances in Syria. Electronic questionnaires were distributed on social media platforms of these students. In addition to paper questionnaires that were handed out on campus. The study sample was collected between June 26 and July 24, 2025.

Sample size

The minimum required sample size was calculated using Cochran's formula for a finite population of 2851 students, yielding 339 participants at a 95% confidence level and 5% margin of error. To account for potential non-response, the target sample size was increased. In practice, 507 students were successfully recruited, exceeding the minimum requirement and ensuring adequate statistical power for subgroup analyses.

Participants and data collection

Inclusion criteria

- Medical, dental and pharmacy students of all academic years at University of Kalamoon.
- Students willing and able to provide information consent.

Exclusion criteria

- Students from other faculties.
- Students who refused participation or didn't take the questionnaires seriously or submitted incomplete responses.

The main objective and importance of the study were explained in detail through the electronic questionnaire. The average time to finish the electronic questionnaire was 7 min. Furthermore, the participants' personal information was kept hidden for privacy policies. Whereas for the paper questionnaires, the researchers had vocally explained the aim of the study and fulfilled all the clarifications to the participants. The average time to fill the hard paper questionnaires was 10 min. Anxiety index severity scale was used, made up of 7 questions to evaluate the extremity of current insomnia problems in the last two weeks. In addition to DASS-21 scale to estimate students' depression, stress, and anxiety levels, made up of 7 questions about depression, 7 about anxiety, and 7 about stress.

Ethical approval

Ethical approval was obtained through a consent question at the beginning of the electronic questionnaire. Additionally, written informed consent was obtained for the paper-based version. The study was approved by the Institutional Review Board (IRB) at the Faculty of Medicine, University of Kalamoon, Syria.

Questionnaire

The supervisor and a group of researchers translated two scales from previous studies into Arabic using back-to-back translation to ensure accuracy and verification to confirm their compatibility with the original version and to facilitate reading for the participants, given that medical education in Syria is conducted in the native language (Arabic) [13, 14].

Section I: demographic and background information

This section included variables such as gender, age, academic year, faculty, GPA,financial status, residence, smoking status, and history of psychological disorders.

Section II: Insomnia Severity Index (ISI)

The scale included 7 questions (three questions about difficulty sleeping, and one question about the student's satisfaction with his sleep). The remaining three questions were about the relationship between sleep problems and their impact on the student's daily performance. The total score is interpreted as follows: no insomnia (0–7); subthreshold insomnia (8-14); moderate insomnia (15-21); and severe insomnia (22-28).

Section III: depression, anxiety, and stress scale (DASS-21)

The DASS-21 includes 21 items, divided into three subscales: Depression (DASS-D), Anxiety (DASS-A), and Stress (DASS-S), each containing 7 items. Participants rated how much each item applied to them over the past week on a 4-point Likert scale from 0 ("Did not apply to me at all") to 3 ("Applied to me very much"). As DASS-21 is a shortened version of the original 42-item scale, scores for each subscale were multiplied by two and interpreted using standardized severity categories.

Interpretation of scores:

- **Depression (DASS-D):** - 0–9: Normal
  - 10–13: Mild
  - 10–13: Mild
  - 21–27: Severe
  - 28+: Extremely severe

- **Anxiety (DASS-A):** - 0–7: Normal
  - 8–9: Mild
  - 10–14: Moderate
  - 15–19: Severe
  - 20+: Extremely severe

- **Stress (DASS-S):** - 0–14: Normal
  - 15–18: Mild
  - 19–25: Moderate
  - 26–33: Severe
  - 34+: Extremely severe

Validity and reliability

The Arabic versions of the ISI and DASS-21 scales demonstrated excellent internal consistency in our Syrian sample. Reliability analysis using Cronbach's alpha revealed the following coefficients: Insomnia Severity Index ($\alpha = 0.815$), Depression subscale ($\alpha = 0.893$), Anxiety subscale ($\alpha = 0.877$), Stress subscale ($\alpha = 0.906$), and the total DASS-21 scale ($\alpha = 0.943$). All values exceeded the recommended threshold of 0.7, confirming the instruments' reliability and appropriateness for use in this population.

Table 1 Demographic characteristics of the study participants (*N* = 507)

Category	Subcategory	*N* (%)
Gender	Male	175 (34.5%)
	Female	332 (65.5%)
Age	18–20	134 (26.4%)
	21–22	200 (39.4%)
	23–24	134 (26.4%)
	≥ 25	39 (7.7%)
Academic Year	Year 1	28 (5.5%)
	Year 2	78 (15.4%)
	Year 3	73 (14.4%)
	Year 4	128 (25.2%)
	Year 5	149 (29.4%)
	Year 6	51 (10.1%)
Faculty	Medicine	277 (54.6%)
	Dentistry	98 (19.3%)
	Pharmacy	132 (26.0%)
GPA	3.5–4	14 (2.8%)
	3–3.5	107 (21.1%)
	2.5–3	234 (46.2%)
	2–2.5	135 (26.6%)
	< 2	17 (3.4%)
Residence	University Dormitory	247 (48.7%)
	Off-campus with Family	123 (24.3%)
	Off-campus not with Family	137 (27.0%)
Income Level	Low	28 (5.5%)
	Medium	261 (51.5%)
	High	218 (43.0%)
Smoking Status	Non-smoker	389 (76.7%)
	Smoker < 1 pack/day	80 (15.8%)
	Heavy smoker ≥ 1 pack/day	38 (7.5%)
Psychological History	Yes	89 (17.6%)
	No	261 (51.5%)
	I don't know	157 (31.0%)

Statistical analysis

Prior to the analysis, we excluded participant data with missing values. The Statistical Package for the Social Sciences (SPSS Inc.), version 25, was used during our data analysis. To summarize the demographic characteristics of the undergraduate students in our study, we used descriptive statistics. Nonparametric tests were used to analyze differences between groups, as the conditions for the assumption of normality (based on the Shapiro-Wilk test) were not met. Furthermore, the Mann-Whitney U test was used to compare two groups (e.g., gender), while the Kruskal-Wallis H test was used for comparisons between three or more groups (e.g., academic year, income level, smoking status, and psychiatric history). The significance level was set at $p < 0.05$ for all statistical tests.

Results

Characteristics of the study group

A total of 507 undergraduate students at University of Kalamoon were surveyed. Females predominated (65.5%), and most students were between the ages of 21 and 22 (39.4%). In this study, we sought to include students from all academic years to ensure a broad population is represented and to understand the prevalence of mental disorders. However, the fifth year was the most prevalent (29.4%). The sample was drawn from different colleges, with the largest proportion from the college of human medicine (54.6%). Regarding academic performance, (46.2%) of participants had a cumulative average grade (2.5–3). Almost half of the students lived in university housing (48.7%), the majority coming from middle-class backgrounds (51.5%) or high-income families (43%). Additionally, most participants were non-smokers (76.7%) and finally, (51.5%) had no previous history of psychiatric illness. For more details, see Table 1.

Percentages of insomnia, depression, anxiety and stress among students

Table 2 presents the severity distribution of insomnia, depression, anxiety, and stress among medical, dental, and pharmacy students using the ISI and DASS-21 scales. The most frequently reported severity level for insomnia was "mild" (44.8%), while depression was most commonly rated as normal (31.6%), followed by moderate (26.2%). Anxiety was most frequently classified as "normal" (32%), followed by "extremely severe" (24.9%). Regarding stress, nearly half of the participants falling into the normal category (42.8%), while (11.2%) experienced "extremely severe" stress levels.

Table 2 Severity distribution of psychological disturbances among university students

Severity Level	ISI *N* (%)	ISI Mean ± SD	Depression *N* (%)	Depression Mean ± SD	Anxiety *N* (%)	Anxiety Mean ± SD	Stress *N* (%)	Stress Mean ± SD
Normal	136 (26.8%)	4.79 ± 2.14	160 (31.6%)	4.45 ± 2.78	162 (32.0%)	3.07 ± 2.40	217 (42.8%)	7.81 ± 4.80
Mild	227 (44.8%)	11.02 ± 2.00	74 (14.6%)	11.11 ± 1.00	46 (9.1%)	8.00 ± 0.00	67 (13.2%)	16.87 ± 1.00
Moderate	130 (25.6%)	17.25 ± 1.88	133 (26.2%)	16.60 ± 2.42	117 (23.1%)	11.85 ± 1.64	90 (17.8%)	21.56 ± 1.58
Severe	14 (2.8%)	23.93 ± 1.94	57 (11.2%)	23.54 ± 1.60	56 (11.0%)	17.14 ± 1.00	76 (15.0%)	28.53 ± 2.10
Extremely Severe	–	–	83 (16.4%)	33.83 ± 5.01	126 (24.9%)	27.83 ± 6.91	57 (11.2%)	38.67 ± 3.03
Total	507 (100%)	11.30 ± 5.38	507 (100%)	15.57 ± 10.61	507 (100%)	13.25 ± 10.25	507 (100%)	18.02 ± 11.13

Table 3 Severity scores of Depression, Anxiety, Stress, and insomnia according to demographic characteristics of university students (*N* = 507)

Characteristic	Category	Statistics	Depression	Anxiety	Stress	Insomnia
Gender	Male	M ± SD	15.99 ± 11.36	12.14 ± 10.38	17.62 ± 11.41	11.54 ± 5.48
	Female	M ± SD	15.34 ± 10.20	13.84 ± 10.15	18.23 ± 10.99	11.18 ± 5.33
		P-value	0.788	**0.033**	0.605	0.477
Age Group	18–20	M ± SD	15.58 ± 10.49	14.30 ± 10.02	18.91 ± 11.34	11.32 ± 5.50
	21–22	M ± SD	14.92 ± 10.18	12.63 ± 9.76	17.01 ± 10.75	11.13 ± 5.21
	23–24	M ± SD	15.43 ± 10.73	12.96 ± 10.73	17.76 ± 10.79	11.07 ± 5.40
	≥ 25	M ± SD	19.28 ± 12.33	13.85 ± 11.81	21.03 ± 12.97	12.97 ± 5.68
		P-value	0.281	0.372	0.249	0.296
Academic Year	1st	M ± SD	18.00 ± 11.47	15.00 ± 10.95	17.86 ± 12.62	13.07 ± 5.76
	2nd	M ± SD	15.08 ± 9.91	14.46 ± 10.67	18.49 ± 10.82	11.35 ± 5.43
	3rd	M ± SD	16.22 ± 10.44	13.12 ± 9.36	18.55 ± 11.04	11.95 ± 5.77
	4th	M ± SD	15.23 ± 10.51	13.44 ± 9.76	17.91 ± 11.28	10.93 ± 4.96
	5th	M ± SD	15.81 ± 10.60	13.18 ± 10.17	18.35 ± 10.10	11.68 ± 5.22
	6th	M ± SD	14.16 ± 11.86	10.35 ± 11.68	15.96 ± 13.43	9.18 ± 5.57
		P-value	0.591	0.053	0.560	**0.005**
Faculty	Medicine	M ± SD	15.97 ± 10.80	13.63 ± 10.71	18.61 ± 11.50	11.51 ± 5.35
	Dentistry	M ± SD	12.10 ± 8.87	10.88 ± 8.61	15.12 ± 9.40	9.70 ± 5.18
	Pharmacy	M ± SD	17.29 ± 10.88	14.21 ± 10.18	18.94 ± 11.25	12.06 ± 5.39
		P-value	**0.001**	**0.042**	**0.033**	**0.006**
GPA	3.5–4	M ± SD	15.86 ± 12.37	13.43 ± 10.39	16.43 ± 11.13	11.43 ± 6.26
	3–3.5	M ± SD	15.44 ± 10.02	13.01 ± 9.81	17.68 ± 10.77	10.64 ± 5.22
	2.5–3	M ± SD	14.77 ± 10.57	12.85 ± 10.29	17.28 ± 10.85	11.02 ± 5.23
	2–2.5	M ± SD	16.28 ± 10.58	13.79 ± 10.46	19.50 ± 11.46	12.17 ± 5.35
	< 2	M ± SD	21.41 ± 12.53	15.88 ± 11.19	19.88 ± 14.04	12.41 ± 7.36
		P-value	0.156	0.740	0.382	0.142
Residence	University Dormitory	M ± SD	15.26 ± 9.88	13.55 ± 9.50	18.16 ± 10.76	11.62 ± 5.44
	Off-campus with Family	M ± SD	15.37 ± 11.18	12.62 ± 10.38	17.61 ± 10.68	10.59 ± 4.94
	Off-campus not with Family	M ± SD	16.29 ± 11.38	13.27 ± 11.42	18.13 ± 12.19	11.37 ± 5.63
		P-value	0.757	0.321	0.920	0.173
Income Level	Low	M ± SD	18.43 ± 10.14	14.29 ± 9.22	20.21 ± 10.42	11.79 ± 5.07
	Medium	M ± SD	16.45 ± 11.33	13.47 ± 10.66	18.54 ± 11.43	11.85 ± 5.40
	High	M ± SD	14.14 ± 9.59	12.85 ± 9.89	17.12 ± 10.81	10.59 ± 5.34
		P-value	**0.026**	0.588	0.234	**0.022**
Smoking Status	Non-smoker	M ± SD	14.72 ± 10.02	12.69 ± 9.68	17.36 ± 10.73	11.20 ± 5.19
	Smoker < 1 pack/day	M ± SD	16.28 ± 11.32	14.25 ± 11.17	19.08 ± 11.60	10.94 ± 5.24
	Heavy smoker ≥ 1 pack/day	M ± SD	22.68 ± 12.39	16.84 ± 13.02	22.53 ± 13.06	13.18 ± 7.14
		P-value	**0.001**	0.193	**0.033**	0.131
Psychological History	Yes	M ± SD	23.66 ± 10.87	21.01 ± 11.26	25.80 ± 11.56	14.48 ± 5.14
	No	M ± SD	10.74 ± 8.29	9.55 ± 8.27	13.58 ± 9.54	9.50 ± 5.02
	Not sure	M ± SD	19.01 ± 9.79	15.01 ± 9.75	20.99 ± 9.90	12.50 ± 4.94
		P-value	**0.000**	**0.000**	**0.000**	**0.000**

Note: Bolded values indicate statistically significant results ($p < 0.05$)

Relationships between demographic characteristics, and mental health

Table 3 shows the severity scores of depression, anxiety, stress, and insomnia among university students according to their demographic characteristics. The results indicated that Syrian female students had significantly higher levels of anxiety than male students ($p = 0.033$), while other gender-related differences were not statistically significant. Although the differences between age groups were not statistically significant, students aged 25 and older showed the highest average scores on all psychological indicators. Insomnia severity varied significantly by academic year ($p = 0.005$), with first-year students showing the highest scores. College affiliation was significantly associated with all psychological outcomes, with pharmacy students reporting the highest levels of depression, anxiety, stress, and insomnia (p-values range from 0.001 to 0.042), indicating academic stress specific to this

college. Although GPA did not indicate any statistically significant differences, students with low academic performance (<2 GPA) consistently showed higher scores, especially in depression. Student residence was not significantly associated with psychological outcomes, but it is worth noting that insomnia scores were slightly higher among university residence hall residents. Income level was significantly associated with depression and insomnia ($p = 0.026$ and $p = 0.022$, respectively), with lower-income students reporting greater psychological distress. Smokers had the highest rates of depression and stress, particularly heavy smokers (one pack of cigarettes or more per day), who scored significantly higher. Finally, participants' prior psychiatric disorder appeared to be a very strong predictor across all psychological domains ($p < 0.001$), with them reporting significantly higher levels of DAS, and insomnia than those without any psychiatric history.

Discussion

The findings of this study highlight the multifactorial nature of mental health disorders and underscore the need for awareness-raising on this topic, while urging targeted interventions that address vulnerable subgroups. This research focused on studying of prevalence of depression, anxiety, stress and insomnia among students at UOK especially in health related disciplines, through the DASS-21 scale and ISI scale. The level of "extremely severe" stress in our sample is higher than that found among university students in other countries, including studies in Pakistan [15], Spain [14], and India [16]. This may be due to the fact that our sample collection coincided with the outbreak of an Israeli-Iranian war in the Middle East, preceded by the fall of the Assad regime in Syria, the country's witnessing regime changes, and an attempted military coup [17, 18]. It is noteworthy that the distribution of anxiety intensity in our sample was bimodal, with (32%) of students falling into the "normal" category, followed by the "extremely severe" category at (24.9%). This aligns perfectly with a similar study conducted by Basudan et al. in Saudi Arabia on dental students, where the "normal" (33.2%) and "extremely severe" (25.1%) categories were the most prominent, which may be a result of the similarity of academic pressures and conditions in the Middle East in general, in addition to the existence of heterogeneous coping mechanisms among students [19].

Upon examining the regional context and utilizing firsthand evidence from Gaza, previous research demonstrates increased levels of anxiety, depression, stress, and post-traumatic stress disorder (PTSD) among medical students during wartime [11]. Furthermore, the humanitarian crisis in Gaza exemplifies the psychological impacts of conflict and instability. With a focus on university students, they face additional burdens stemming from substandard living conditions, threats to their personal safety, forced displacement, and the loss of loved ones. These factors collectively undermine not only their psychological well-being but also their ability to sustain academic engagement [20].

Females were the majority of participants representing (65.5%) of the sample, which aligns with regional mental health research showing higher participation and vulnerability among female medical students [21, 22]. Female students in our study also reported significantly higher anxiety scores ($p = 0.033$), consistent with findings from Burger et al. and Nag et al., which demonstrated higher anxiety levels among females [23, 24]. This may be attributed to several factors, including biological and hormonal influences related to estrogen, psychological factors linked to increased self-awareness, and greater sensitivity to social and emotional relationships. Genetic predispositions may also play a role.

Pharmacy students exhibited the highest scores in depression, anxiety, stress, and insomnia, likely due to theoretical workload, limited clinical exposure, low mental health literacy, and uncertain career prospects [25].

With respect to insomnia, Alsaggaf et al. (Saudi Arabia) found that among medical students in the clinical phase, (30%) reported poor sleep quality, with an average sleep duration of only 5.8 hours per night [26]. These results differ from our findings, where insomnia was more common among first-year students, likely due to the challenges of adapting to university life, the stress of leaving family, and the relocation to university housing, all of which are especially distressing for younger students.

Housing type (university/non-university) had no significant impact on psychological outcomes, although university residents scored slightly higher on insomnia. This may be due to their distance from their families and their complete dependence on themselves, which may be a contributing factor to their insomnia.

Alnofaiey et al. studied 2,819 medical students and found that those with abnormal levels of anxiety had significantly lower GPA scores [27]. On the other hand, although there were no statistically significant differences in our study regarding cumulative GPA, students with GPAs below 2.0 showed higher levels of depression than others. This suggests that untreated mental health disorders may negatively impact productivity and academic outcomes.

We also observed a significant association between socioeconomic status and levels of psychological disorders. In our study, students from low socioeconomic backgrounds recorded higher scores in depression and insomnia, and low income was also a predictive factor for anxiety. These results align with those of Eisenberg et al., who found that students from poor families were more

likely to suffer from anxiety, depression, and suicidal ideation [28].

For age, students aged 25 and older had higher mean scores across all psychological indicators. This may be because older students are approaching the end of their academic careers and are experiencing life's challenges and pressures, which can cause them psychological stress and tension.

Simultaneously, there was a strong correlation also between higher levels of stress and depression and heavy smoking (≥ 1 pack per day). This could be justified by the fact that students who are more distressed might use nicotine as a coping strategy, and nicotine itself might cause neurotransmitter dysregulation and worsen symptoms of anxiety and depression in a two-way process [29].

Students with previous psychological or psychiatric history recorded significantly higher scores across all distress domains ($p < 0.001$), this may be attributed to the possibility that this subgroup is more psychologically fragile than others, which could make even ordinary stressors impact them more severely [30]. In addition, they might experience ongoing anxiety about stumbling again and relapsing into their previous psychological struggles. Such vulnerability could be related to the likelihood that their earlier disorder was not managed adequately, nor was full recovery ensured, largely due to the limited availability of sufficient and appropriate mental health care within our society and under the current circumstances. Many studies have confirmed that baseline psychological symptoms lead to persistent or worsening mental health over university life [31].

Conclusion and recommendations

Due to the high rates of depression, anxiety, stress, and insomnia, we urge those responsible for mental health care in Syria to include awareness campaigns to help students adapt to the university environment, hold guidance seminars to encourage better sleep hygiene and improve time-management skills, especially for first-year students, and enhance psychological care through conferences while encouraging visits to psychiatrists when symptoms recur. Additionally, regular follow-ups should be ensured to monitor students' mental health development and prevent the negative effects of anxiety, stress, and depression on their lives, academic responsibilities, professional behavior toward patients, and interactions with healthcare staff in the future.

The limitations

This survey is limited due to its small sample size and limited access. It was made in a single university in Syria studying medical, dental and pharmaceutical students' psychological problems. Although results showed interesting hypotheses and causes further studies are required to attain full knowledge.

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Authors' contributions
All authors have participated in writing the manuscript and reviewed the literature. **Dr. Hamdah Hanifa** and **Dr. Nihad Assaf** conceived and supervised the conduct of the study. All authors read and approved the final manuscript.

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Data availability
The datasets generated and/or analysed during the current study are not publicly available due to privacy and ethical considerations but are available from the corresponding author on reasonable request.

Declarations

Ethical approval and consent to participate
All procedures performed in this study involving human participants complied with the institutional and/or national research committee ethical standards and the 1964 Helsinki declaration and subsequent amendments or equivalent ethical standards. The study was designed and conducted in accordance with the ethical principles established by University of Kalamoon. Therefore, ethical approval was obtained from the Institutional Review Board (IRB) Committee, Faculty of Medicine, University of Kalamoon, Syria (ID Number: 758:2025). Written informed consent was obtained from all the participants for the participation of this study and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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