



Mental Health Status Among Iranian Medical University Students: A Cross-sectional Study

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Abstract

Background: Mental health status of university students is a critical issue due to its essential role in students' academic performance. Therefore, this study aimed to evaluate the mental health status of first-year students at Hamadan University of Medical Sciences in 2020.

Methods: All first-year students of Hamadan University of Medical Sciences entered this cross-sectional study through census sampling. Two Questionnaires, the Goldberg's General Health Questionnaire-12 (GHQ-12) as a screening instrument, and a researcher-made questionnaire were used to collect demographic information. After data collection, the chi-square test and logistic regression coefficient were applied to analyze the data at a significance level of 0.05.

Results: The results showed that out of 875 students, 170 cases (19.4%) suffered from mental disorders, including depressed mood (93.5%) and anxiety attack (22%) as the most and least common disorders, respectively. Fitting the logistic regression model revealed that the highest educational degree ($P < 0.001$, medical residency), admission quotas other than the free quota ($P = 0.03$), high ($P = 0.04$) and low ($P = 0.01$) financial status, and fathers' unemployment ($P = 0.04$) increased the chance of mental health disorders.

Conclusion: Due to the high rate and negative consequences of mental health problems in university students, it is recommended that university counseling centers provide services for students with a focus on coping with more frequent mental disorders. Finally, it is suggested they have yearly follow-up surveys to recognize the effects of the university environment and different conducted programs on the students' mental status.

Keywords: Students, Mental health, GHQ-12

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Introduction

Despite the great importance of health from the early stages of human life, its mental dimension has been less considered and emphasized compared to the physical dimension (1). Physical health problems have exact definitions and clear signs and symptoms, while mental health has a wide and varied range in terms of different cultural, traditional, economic, and geographical beliefs and criteria (2). Different studies have confirmed the direct relationship between individual mental health and social progress in a way that providing bases for a healthy and dynamic life guarantees the health of a community for the coming years (3). Regarding the individual and social adverse effects of mental disorders, it is essential

to scrupulously consider the diagnosis, treatment, and prevention of mental health disorders (4). Mental health sufferers express their distress in different ways such as poor self-concept, academic failure, inability to communicate with peers and social exclusion, and lack of adherence to social rules (5). The prevalence of mental disorders in Iran is rising for many reasons, including the population growth and its problems, the collapse of the family foundation, the economic problems, and the like. According to previous studies, the prevalence of psychiatric disorders in studies using a screening tool was 31.03% (6).

It was observed that the students of medical sciences, who are from the most talented human resources of communities, often experience common problems such



as a lack of concentration, distraction, inappropriate behavior, lack of social skills, helplessness, impulsive behavior, and excessive anxiety (3). These problems often place obstacles in the way of their study, lectures, and seminars (7). In addition, factors such as being unfamiliar with the university environment upon arrival, living away from family members, showing no interest in the field of the study, being incompatible with other people in the living environment, and having insufficient welfare facilities and financial problems can cause psychological distress and academic failure among the students (8). One of the main concerns of the mental health management systems of different countries is to find the best strategies to treat mental health problems and improve the mental health status of their population, including university students (9). Recognizing the challenges and problems of student life is required for introducing a comprehensive mental health model with plans for prevention, diagnosis, and treatment of mental health disorders (10). Therefore, a comprehensive study of mental health in the community is of particular importance (11,12).

In Iran, all first-year students should complete standard questionnaires designed by the Vice-chancellery for the Cultural and Student Affairs of the Ministry of Health in a national screening program. Analyzing the gathered data by relevant software reveals the mental health status of each student. Counseling and psychotherapy are provided for mentally disordered students to improve their health status and prevent the students' academic failure, and waste of human resources, time, and energy. Accordingly, this study sought to find mental health disorders among the first-year students of Hamadan University of Medical Sciences in 2020.

Materials and Methods

This cross-sectional study was conducted to evaluate the mental health status of the students of medical sciences in 2020. All 875 first-year students of Hamadan University of Medical Sciences in 2020 were the research population. Admission to one of the bachelor's, master's, PhD, and medical residency programs at Hamadan University of Medical Sciences and completing the mental health questionnaire upon registration were the two inclusion criteria of the study. Due to the coronavirus disease 19 (COVID-19) pandemic and the impossibility of distributing and completing the questionnaire in person, the questionnaire was uploaded on the university website, and the necessary training was virtually given to students on how to complete data such as gender, age, students educational degree, program type, marital status, and the like.

The study tool was standard Goldberg's General Health Questionnaire-12 (GHQ-12) with 28-items in 4 areas of physical symptoms, anxiety symptoms, social dysfunction, and depression symptoms. Each area has seven items graded with a 4-point Likert-type scale ranging from 0 to 3, representing 'at all', 'normal', 'too normal', and 'too common',

respectively. The range of scores for each domain is from 0 to 21, and the total range of the scores of the questionnaire is from 0 to 84. The cut-off point is estimated at 25% based on previous studies (6,9) so that a higher score and total average are associated with the poorer mental health status. To test the reliability, the internal consistency of the questionnaire was measured using Cronbach's alpha coefficient. The alpha for the whole sample was found to be 0.87 and the same for both males and females, indicating satisfactory results. The validity of the instrument was determined by convergent validity. When the correlation between the GHQ-12 and global quality of life scores was investigated, as expected a significant negative correlation emerged ($r = -0.56$, $P < 0.0001$), indicating that those with more distress showed lower levels of global quality of life (13).

After data collection, the Chi-square test and logistic regression were employed to analyze the data. Eventually, data were analyzed using SPSS software (version 24) with a significance level of 5%.

Results

The frequency performance distribution of students' mental health status and the studied variables are presented in Table 1. Based on the data, out of 875 completed questionnaires (the response rate was 100%), 381 and 494 cases belonged to males and females, respectively. The mean (SD) age of participants was 20.94 (8.5) years. In terms of marital status, 823 (94%) and 52 (6%) students were single and married, respectively. Further, 576 (65%) of the students were under 20 years old. Ninety-four students were postgraduate students and 781 participants were studying general medical and bachelor's programs. Native and non-native students included 398 and 477 cases, respectively. As regards financial status, most of the participants declared their middle ($n = 691$) or low ($n = 140$) status, respectively, and only 44 of them stated a high financial status.

The findings of the study based on the GHQ-12 demonstrated that 170 students (19.4%), composed of 17.8% male and 19.8% female students suffered from different mental disorders. Among mentally disordered participants, 8.5% of them were married and 19.7% were single students. According to Table 1, there was no equal distribution of mental disorders among students admitted to the university based on free and Shahed and Isargar quota, 12.9% of the students admitted to the university with free quota and 77% of students with Shahed and Isargar quota suffered from mental disorders. Regarding financial status, 27.3%, 17.4%, and 24.3% of students with high, middle, and low status, were suspected of different types of mental disorders, respectively.

Table 2 summarizes the frequency distribution of different types of mental disorders based on the GHQ-12. According to the results, depressed mood, anxiety, anger, and obsessive-compulsive disorder with 159 (%93.5), 150 (%88.2), 120 (%70.6), and 122 (%71.8) cases were the most

Table 1. The Frequency Distribution of the First-year Students of Hamadan University of Medical Sciences in 2020

Variable	Levels	Without Mental Problems	With Mental Problems	P Value*
Gender	Male	313 (82.2)	68 (17.8)	0.460
	Female	396 (80.2)	98 (19.8)	
Age	18-20	459 (79.7)	117 (20.3)	0.590
	21-23	133 (83.1)	27 (16.9)	
	24-27	41 (80.4)	10 (9.6)	
	28-29	41 (85.4)	7 (14.6)	
	≥30	35 (87.5)	5 (12.5)	
Student's educational degree	Medical residency	4 (50)	4 (50)	0.090
	PhD	18 (85.7)	8 (14.3)	
	General medical	227 (78.5)	62 (21.5)	
	Master's	54 (90)	6 (10)	
	Continuous bachelor's	363 (81.2)	84 (18.8)	
	discontinuous bachelor's	29 (89.7)	3 (10.3)	
Program type	Associate's degree	17 (81)	4 (19)	0.080
	Fee-based	125 (76.2)	39 (23.8)	
Marital status	State-supported program	584 (82.1)	127 (17.9)	0.190**
	Married	43 (91.5)	4 (8.5)	
	Single	661 (80.3)	162 (19.7)	
Indigenous status	Others	5 (100)	0 (0)	0.190
	Native	330 (82.9)	68 (17.1)	
Admission quota	Non-native	379 (79.5)	98 (20.3)	0.080
	Free	108 (87.1)	16 (12.9)	
	Talented	4 (66.7)	2 (33.3)	
	Shahed and Isargar	144 (23)	143 (77)	
	Areas	441 (81.7)	99 (18.3)	
Housing	Others	12 (66.7)	6 (33.3)	0.420
	With family	400 (80.8)	95 (19.2)	
	In dormitory	267 (82.4)	57 (17.6)	
Financial status	Unknown	42 (75)	14 (25)	0.060
	High	32 (72.7)	12 (27.3)	
	Middle	571 (18.6)	120 (17.4)	
Parents' marital status	Low	106 (75.7)	34 (24.3)	0.810
	Married	668 (80.9)	158 (19.1)	
	Divorced	12 (80)	3 (20)	
Religion (religious denomination)	Widowed	29 (85.3)	5 (14.7)	0.960
	Shia	644 (81)	151 (19)	
	Sunni	65 (81.3)	15 (18.8)	
Death of parents	Yes	29 (85.3)	5 (14.7)	0.520
	No	680 (80.9)	161 (19.1)	
Father's education degree	Uneducated	50 (78.1)	14 (21.9)	0.700
	High school diploma	140 (82.4)	30 (17.6)	
	Theological	101 (75.9)	32 (24.1)	
	Associate's or bachelor's	191 (80.6)	46 (19.4)	
	Master's or doctorate degrees	225 (83)	46 (17)	
Mother's education degree	Uneducated	98 (81)	23 (19)	0.110
	High school diploma	156 (79.2)	41 (20.8)	
	Theological	51 (76.1)	16 (23.9)	
	Associate's/bachelor's	208 (82.5)	44 (17.5)	
Father's job	Master's or doctorate	196 (81.3)	45 (18.7)	0.110
	Retired	222 (81.6)	50 (18.4)	
	Unemployed	38 (95)	2 (5)	
	Employed	401 (79.6)	103 (20.4)	
	Financially supported	5 (62.5)	3 (37.5)	
Mother's job	Unknown	48 (80)	12 (20)	0.620
	Rtired	73 (84.9)	13 (15.1)	
	Housewife	492 (80.5)	119 (19.5)	
	Employed	145 (80.1)	36 (19.9)	
Living in	Others	4 (66.7)	2 (33.3)	0.460
	Village	86 (83.5)	17 (16.5)	
	City	628 (80.4)	153 (19.6)	

Note: Data are expressed as No. (%). *Chisquare test; **Fisher exact test.

Table 2. The Frequency Distribution of Different Mental Disorders Based on GHQ Test Result

Type of Disorder	Without Mental Problems		With Mental Problems	
	No.	%	No.	%
Depressed mood	11	6.5	159	93.5
Anger	50	29.4	120	70.6
High mood	77	45.3	93	54.7
Anxiety	20	11.8	150	88.2
Somatization	77	45.3	93	54.7
Self-harm thoughts	130	76.5	40	23.5
Psychosis	115	67.6	54	31.8
Sleep problems	86	50.6	84	49.4
Memory problems	94	55.3	76	44.7
Obsessive thoughts and behavior	48	28.2	122	71.8
Anxiety attack	148	87.1	22	12.9
Social anxiety	122	71.8	48	28.2
Severe stress	124	72.9	46	27.1
Problematic personality traits	49	28.8	121	71.2
Smoking, alcohol and drugs	141	82.9	29	17.1
Adaptation problems	66	38.8	104	61.2

Note. GHQ: the Goldberg's General Health Questionnaire.

frequent types of disorder, while anxiety attack with 22 cases was the least common mental health disorder among the participants.

The results of fitting the logistic regression model (Tables 1 and 3) revealed that educational level ($P < 0.001$, medical residency students 11.81 times more than master's students), university admission quota ($P = 0.030$, other quotas 3.56 times more than free quota), financial status (students with high and low financial status, respectively 2.11 [$P = 0.040$] and 2.85 [$P = 0.010$] times more than students with middle financial status), and father's job ($P = 0.040$, unemployed 5.26 times more than employed) increased the chance of developing mental disorders. Although other variables demonstrated increasing or decreasing effects on developing mental health disorders, they were not statistically significant ($P > 0.05$).

Discussion

This study was conducted to assess the frequency of different types of mental disorders in the first-year students of Hamadan University of Medical Sciences in 2020. The results indicated that depressed mood disorder ($n = 159$, %18), anger ($n = 120$, %13), anxiety disorder ($n = 150$, %17), psychosis ($n = 54$, %6), sleep disorder ($n = 84$, %10), obsessive-compulsive disorder ($n = 122$, %14), severe stress ($n = 46$, %5), and history of smoking and alcohol use ($n = 29$, %3) are the most frequent disorders in participants. Generally, 19.4% of the students admitted through the national exam at Hamadan University of Medical Sciences had suffered from at least one type of mental health disorder. Despite the lack of a comprehensive study on the mental health status of the

first-year students of different universities in Iran, the finding of this study is significant in comparison with those of studies conducted on (the mental health evaluation of) various groups of students in different universities; the result of the current study represented the involvement of 19.4% of the first-year students of Hamadan University of Medical Sciences with at least one type of mental disorder, which is in accordance with the result of Soltani et al, demonstrating that 72% of students were mentally healthy and 28% were suspected of suffering from one of the psychological symptoms (14). In the same vein, Shariati et al reported the prevalence of mental disorders from 12 to 33% in the general student population (15). In contrast with the findings of the present study, Jahani Hashemi et al measured the frequency of mental health disorders in the first- and last-year university students and found the presence of at least one mental disorder in 69% of students; they indicated that only 31% of the students were mentally healthy. In terms of the frequency of mental disorders, they observed no statistically significant difference between the first- and last-year students, implying that the university environment does not affect students' mental health status (16). In another study by Hosseini and Mousavi, 51.8% of the university students were suspected of mental health disorders (17), which is higher than the percentage reported in the present study. The increased number of mentally disordered students in the study by Jahani Hashemi et al, in comparison with the current study, may be attributed to the difference in research samples; they studied both the first- and last-year medical sciences students (16), while the population of this research was limited to the first-year students. The high frequency of depressed mood in students at the beginning of their studies at Hamadan University of Medical Sciences can be related to factors such as participating in a difficult university entrance exam, tough competition for university admission, tolerating family pressure to pass the university entrance exam, and having concerns about their future jobs and even failure in admission to their favorite universities and fields of study. However, further studies are needed to determine the exact factors in this respect (10-20). Regarding the effect of demographic characteristics on mental disorders, the results of this study showed that the students' higher educational degree, Shahed and Isargar admission quota, low financial status, and father's unemployment increase the chance of developing mental disorders in the participants.

Although the other variables had decreasing or increasing effects on developing mental health disorders, their effects were not statistically significant. One example was being a non-native student, away from family members and close friends, which represent no significant effect on increasing the rate of mental health disorders in the participants of this study. Considering that most of the study participants were native students or from neighboring provinces, with close cultural characteristics, justifies this result. This finding is in line with that of Sedighi et al. on mental health

Table 3. The Effect of Demographic Variables on the Probability of Developing Mental Disorders

Variable	Levels	OR	95% CI for OR		P Value
			Lower	Upper	
Gender	Male	1			0.270
	Female	1.14	0.85	1.77	
Living in	City	1			0.460
	Village	1.23	0.42	1.48	
Age	18-20	0.79			0.620
	21-23	1	0.39	4.85	
	24-27	1.37	0.33	4.49	
	28-29	1.22	0.23	4.16	
	≥30	0.99	0.22	3.62	
Student's educational degree	Bachelor's and Master's	1			<0.001
	Medical residency	11.81	2.21	63.24	
	Doctorate	1.22	0.82	1.80	
	Associate's	0.75	0.22	2.51	
University admission quota	Free	1			0.200
	Talented	3.73	0.51	27.45	
	Shahed and Isargar	1.83	0.90	3.69	
	Areas	1.30	0.68	2.50	
	Others	3.56	1.12	11.31	
Indigenous status	Native	1			0.170
	Non-native	1.32	0.89	1.96	
Housing	Dormitory	1			0.520
	Living with family	1.26	0.85	1.86	
Religion (religious Denomination)	Shia	1			0.940
	Sunny	1.03	0.53	1.99	
Financial status	Middle	1			0.040
	High	2.11	1.03	4.32	
	Low	2.58	1.24	4.55	
Parents' marital status	Married	1			0.820
	Divorced	1.17	0.29	4.67	
	Deceased	0.62	0.20	1.95	
Father's education	Master's or doctorate	1			0.770
	Uneducated	1.17	0.42	3.28	
	Theological	1.37	0.77	2.44	
	High school	0.87	0.45	1.70	
	Associate's or Bachelor's	1.16	0.71	1.90	
Father's job	Employed	1			0.980
	Retired	1.2	0.61	2.54	
	Unemployed	5.26	1.2	18	
	Financially supported	4.15	0.72	24.02	
	Unknown	1.1	0.45	2.23	
Mother's education degree	Uneducated	1			0.920
	Theological	0.94	0.29	3.04	
	High School	1.05	0.49	2.26	
	Associate's or Bachelor's	0.73	0.32	1.71	
	Master's or doctorate	0.89	0.34	2.34	
Mother's job	Employed	1			0.310
	Retired	0.68	0.32	1.44	
	Housewife	1.28	0.69	2.38	
	Other	2.03	0.32	13.09	
Student's marital status	Single	1			0.080
	Married	0.31	0.08	1.16	

Note. OR: Odds ratio; CI: Confidence interval.

status in the medical students of Rafsanjan University of Medical Sciences; they found the insignificant effect of variables such as age, gender, and marital status on students' mental health scores (21). Given that the first-year medical residency students in this study experienced more mental disorders, it seems that increasing age and the level of education, the time of graduation, and concerns about their future careers are factors causing mental health problems in students. In general, the first-year students at the beginning of their studies in university had more problems with depressed mood, necessitating taking professional measures by counseling centers to help students in adapting to campus life and dormitory conditions and providing life skill programs for students (7,8,21).

Our work has some limitations. The first one lies in the fact that the study was a cross-sectional one and did not consider the mental health history of the participants. Another limitation was the issue of gathering the data through self-reporting, the approach with two possible disadvantages of a lack of honesty and introspective ability of the reporters to assess themselves. In addition, the findings of this study may not apply to the students in universities under the supervision of the Ministry of Sciences with different rules and regulations from medical sciences universities. On the other hand, evaluating the mental health status as a critical factor in students' academic performance, finding the most frequent mental health problems, interfering with severe cases, and implementing programs to improve their mental status are the positive points of this study.

Conclusion

Overall, 19.4% of the new students entering Hamadan University of Medical Sciences suffered from different mental disorders. Of the Hamadan University students, 18% and 17% suffered from psychological distress and anxiety, respectively. Educational level, university admission quota, financial status, and father's job increased the chance of developing mental disorders. Due to the negative consequences of mental health disorders on the educational success of university students, it is recommended that mental health services be provided for students with a focus on coping with more frequent mental disorders.

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Authors' Contribution

Asgari S. Z. (First author): Introduction Writer/Main Researcher (25%); Seidmohamamdi A. (Second author): Main Researcher/Discussion Writer (25%); Roshanaie G. (Third author): Methodologist/Main Researcher (20%); Arbabpouri F. (Forth author): Data Collector (20%); Panahi S. (Fifth author): Methodologist/Assistant Writer (10%).

Conflict of Interests

There was no conflict of interests between the authors of this article.

Ethical Permissions

This study was approved by the Research Ethics Committee of Hamadan University of Medical Sciences with IR ethics (IR.UMSHA.REC.1400.08).

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