Research Article

Survey on Mental Health of Iranian Medical Students: A Cross-sectional Study in Islamic Azad University

Khalil Alimohammadzadeh,[1,2,*] Meisam Akhlaghdoust,[3] Seyed Abdolmajid Bahrainian,[4] and Abasat Mirzaei[5]

[1]M.D., Ph.D., Associate Professor, Department of Health Services Management, North Tehran Branch, Islamic Azad University, Tehran, IR Iran
[2]Health Economics Policy Research Center, Tehran Medical Sciences Branch, Islamic Azad University, Tehran, IR Iran
[3]M.D., Pars Advanced and Minimally Invasive Medical Manners Research Center, Pars Hospital, Iran University of Medical Sciences, Tehran, Iran
[4]M.D., Ph.D., Associate Professor of Clinical Psycology, Shahid Beheshti University of Medical Sciences, Tehran, IR Iran
[5]Ph.D., Faculty Member of Islamic Azad University, Tehran Medical Sciences Branch, Tehran, IR Iran

[*]*Corresponding author*: Khalil Alimohammadzadeh, Associate Professor Department of Health Services Management, Tehran North Branch, Islamic Azad University, Tehran, IR Iran. E-mail: dr_khalil_amz@yahoo.com

Abstract

Mental health is the most important factor that influences all aspects of life including academic achievements. The present study aimed at evaluating students' mental health who started their education in September 2014 at Islamic Azad University of Medical Sciences in Tehran. The present cross-sectional study included 907 medical students (biology, health, medical, paramedical, medical engineering, nursing, and midwifery). All students in the first week of their university activities filled the mental health questionnaire. Subsequently, they were coded and their demographic information was analyzed by SPSS. Our results revealed that 19.5% of the medical students suspected to have a mental disorder.

Keywords: Mental Health, Medical Students, GHQ

1. Background

Mental health requires awareness of human basic requirements (1). Medical university students are special persons in a society, because they are usually more intelligent than their nonmedical peers; they can achieve better social and economic status, and benefit more from the funds of their country and frequent studies (2-4). Sometimes, the border between mental health and neurosis (mental disorders) interlace together, and thus unhealthy individuals are not detected properly (1-3). Therefore, many professionals and scientific centers try to suggest clear and precise definition of mental health (5).

University entrance is a highly sensitive stage during youths' life in every country, and it frequently accompanies with several changes in their social relationships (4). During this time, some stresses and anxieties are inflicted to the junior university students and affect their performance and efficiency (6). Many stressors threaten mental health of medical students such as educational debt, heavy studies and workload, information and data overload, sleep difficulty, medical school environments, poor learning devices, and financial and economic concerns (7-10).

The general health questionnaire (GHQ) was regulated by Goldberg in 1972 for the first time, and was applied widely to diagnose minor mental disorders in different situations (11). The prevalence of mental health disorders in the past studies were determined using the GHQ, ranging from 7.3% to 40.2% worldwide. A study conducted in Turkey showed that 47.9% of medical students had emotional disorders; and in a Malaysian study, it was found that 41.9% of medical students experienced emotional disorders (8, 9).

However, there is limited information in the literature on the survey of mental health of Iranian medical students at Islamic Azad University. Thus, this study, for the first time, was done at the Islamic Azad University with the aim of evaluating mental health among medical students of Islamic Azad University in Tehran during 2014.

2. Methods

2.1. Design, Participants, and Procedures

The present cross-sectional study was done to evaluate mental health among all students (907 students in different fields of study such as biology, health, medical, paramedical, medical engineering, nursing, and midwifery) of Islamic Azad University of Medical Sciences in Tehran, the capital of Iran during 2014. The census sampling method was applied and 907 participants were included in the study.

This study was approved by the research ethics committee of Islamic Azad University of Medical Sciences in Tehran and participants provided written voluntary informed consent. The present study was performed by a clinical psychologist and a senior psychiatry resident.

2.2. Measurement Method

The questionnaire consisted of 2 parts: (1) demographic information, (2) mental health tests. For this study, the general health questionnaire (GHQ) was distributed by project supervision among new students in September 2014, when they were enrolling. The questionnaire included 28 questions (with 4 subscales) about general symptoms of mental disorders. Every subscale included symptoms of physical, anxiety, depression, and social function. Likert scale was used to score the GHQ. Each question has 4 choices, which are scored between 0 and 3 (not at all, usual, mostly, almost always), and a score between 0 and 84 can be obtained. According to the Cronbach's alpha coefficient test, the cut of point of 23 was determined in the present study. GHQ test results were 90% and 88% for females and males, respectively, which is statistically acceptable.

2.3. Statistical Analysis

The questionnaires were completed by the students without any compulsion. All the obtained data were analyzed by SPSS version 19 (SPSS Inc. Chicago, IL, USA) and its results were reported by analytical methods such as Fisher test, Chi-square test, and correlation coefficient.

3. Results

In total, 907 students enrolled in this study (Table 1). Participants were females with a mean age of 21.3 ± 2.9 years and males with a mean age of 20.9 ± 2.7 years. Demographic characteristics of the participants are presented in Table 1.

According to the results, 81% of students had mental health and only 19% had mental problems. Frequency of GHQ subtests according to gender and marital status are demonstrated in Table 2.

The results revealed a significant difference in physical (P = 0.000), anxiety (P = 0.004), and total scores (P = 0.019) between female and male groups, but no significant difference was found in their social (P = 0.996) and depression (P = 0.503) scores. No significant difference was detected between single and married groups (Table 3). The results indicated no significant difference among physical, anxiety, social function, depression, and total scores in GHQ subtests (P = N.S).

Table 1. Characteristics of the Students

Variables	No. (%)
Gender	
Male	170 (19)
Female	737 (81)
Total	893 (100)
Marital Status	
Single	869 (95.8)
Married	38 (4.2)
Total	907 (100)
Family history of mental diseases	
Yes	35 (3.9)
No	859 (96.1)
Total	907 (100)
Educational level	
Bachelor	716 (78.9)
Master	63 (7)
Doctorate	128 (14.1)
Total	907 (100)
Field of study	
Biology	204 (22.6)
Health	62 (6.7)
Nursing	91 (10)
Midwifery	28 (3.1)
Medical engineering	135 (14.9)
Medicine	128 (14.1)
Paramedical	133 (14.7)
Psychology	126 (13.9)

The mental health of university students in different fields were compared together. According to the results of ANOVA test, a significant difference was obtained in subtests (Table 4).

The comparison of students with/without family history of mental disease has been demonstrated in Table 5. The results revealed a significant difference between the 2 groups.

According to the results, a group with family history of mental disease has faced more physical problems, anxiety, and depression, but there was no significant difference in social function among them.

Table 2. Frequency of GHQ Subtests According to Gender and Marital Status

	Physical	Anxiety	Social Function	Depression
Male	168 (19)	168 (19)	168 (19)	168
Female	720 (81)	720 (81)	718 (81)	718
Total	888	888	886	886
Single	832 (96)	832 (96)	830 (96)	830 (96)
Married	30 (4)	30 (4)	30 (4)	30 (4)
Total	862	862	860	860

Table 3. Comparison of the Gender of GHQ Subtests[a]

	Depression	Social Function	Anxiety	Physical	Total
Male					
Healthy	92.3	53.6	83.9	91.1	82.1
No healthy	7.7	46.4	16.1	8.9	17.9
Female					
Healthy	92.8	52.6	76.5	84.9	80.5
No healthy	7.2	47.7	23.5	15.1	19.5
	T = -0.669, df = 884, P = 0.503	T = 0.005, df = 884, P = 0.996	T = -2.891, df = 886, P = 0.004	T = -4.080, df = 886, P = 0.000	T = -2.354, df = 884, P = 0.019

[a]Values are expressed as %.

Table 4. Comparison of Mental Health Status of Students with Field of Study with ANOVA Test

Subtest	Mean $\pm$ SD	F	P Value
Anxiety	4.3 $\pm$ 3.4	1.897	0.027
Social Function	6.2 $\pm$ 2.7	1.897	0.040
Depression	1.9 $\pm$ 2.8	2.227	0.007
Total Score	16.3 $\pm$ 9.2	1.972	0.020

4. Discussion

The results revealed that 19.5% of students were suspected of having a mental disorder. Various studies have provided different results. Health and social care information centre (2009) reported that about 23% of adult students had at least one psychiatry condition [1]. In another study conducted in Oroumiyeh university (2010), it was reported that 6.2% of students were suspected of having a mental disorder [12]. Bahreynian and Ghasemi Borumand studies showed 28.6% of female students and 25% of male students were suspected to have mental disorder [13]. However, Tabrizizadeh et al. reported that 30.9% of medical and dentistry students at Yazd University were suspected of having mental disorders [14].

A survey on mental health of the medical students at London University and Cardiff Medical schools presented in international conference on physician health in London (2014), showed that 17% of the students completed the survey, 15% had depression, and 52% had anxiety disorder [1-6].

According to the study, 19.5% of female students suffered from mental disorder (15.1% physical disorder, 23.5% anxiety, 47.4% depression, and 7.2% social function). These findings match those of Karami and Tabrizizadeh studies. The rate of male students who had mental disorder was 17.9% and there was no significant difference between male and female students (P = NS). Of the male students, 8.2% suffered from physical disorder, 16.1% anxiety, 46.4% depression, and 7.7% from social function. Based on the obtained results, the most common disorders between male and female students were depression and anxiety, which was in agreement with those of Karami study in Zanjan University of Medical Sciences [15].

No significant difference was found between the students who had a family history of mental disorder and those without it. The existence of mental illness in the students' family can affect them in 2 ways: firstly, through gene transfer and inheritance; secondly through unfavorable family environment for normal communication. These problems can appear as a stress on students' life.

Table 5. The Comparison of Students with/without Family History of Mental Disease

GHQ		Free Degree	F	P Value
Physical	Intergroup	1	17.673	0.000
	Intragroup	892		
	Total	893		
Anxiety	Intergroup	1	28.318	0.000
	Intragroup	892		
	Total	893		
Depression	Intergroup	1	2.067	0.151
	Intragroup	892		
	Total	893		
Social function	Intergroup	1	35.329	0.000
	Intragroup	892		
	Total	893		
Total score	Intergroup	1	30.950	0.000
	Intragroup	892		
	Total	893		

There was no significant difference between female and male students with family history of mental illness in the subtest of GHQ and the total score. There was no significant difference among students, education degree, and mental health. These results matched those of Sadeghi at Qom University of Medical Sciences (12).

4.1. Limitations

It might have been possible that some students did not answer the questions due to anxiety and lack of knowledge. Besides, these findings showed only the suspected students with mental disorders, and thus they cannot represent the population of real mental patients.

4..2. Conclusions

The results of this study revealed that mental disorders were common among students of Islamic Azad University of Medical Sciences (students studying in the fields of biology, health, medical, paramedical, medical engineering, nursing and midwifery) and that mental disorders were more common among female students. Our results demonstrated that 19.5% of medical students were suspected to have a mental disorder. Academic stress could have a major effect on the mental health of medical students.

Acknowledgments

References

1. Health and Social Care Information Centre . Social Care Statistics. Adult psychiatric morbidity in England, 2007 Results of a household survey 2007. Available from: www.hscic.gov.uk/catalogue/PUB02931/adul-psyc-morb-res-hou-sur-eng-2007-rep.pdf.
2. Office for National Statistics . Integrated Household Survey, January to December 2013: Experimental Statistics 2013. Available from: www.ons.gov.uk/ons/dcp171778_379565.pdf.
3. Health and Social Care Information Centre . Lifestyle Statistics, Health and Social Care Information Centre. Statistics on Alcohol 2013. Available from: www.hscic.gov.uk/catalogue/PUB10932/alc-eng-2013-rep.pdf.
4. Mann J. British drugs survey 2014: drug use is rising in the UK-but we're not addicted 2014. Available from: www.theguardian.com/society/2014/oct/05/-sp-drug-use-isrising-in-the-uk-but-were-not-addicted.
5. Sayburn A. Why medical students' mental health is a taboo subject. *Student BMJ.* 2015;**23**.
6. General Medical Council and Medical Schools Council . Supporting medical students with mental health conditions 2015. Available from: www.gmcuk.org/Supporting_students_with_mental_health_conditions_0715.pdf_53047904.pdf.
7. Brazeau CM, Shanafelt T, Durning SJ, Massie FS, Eacker A, Moutier C, et al. Distress among matriculating medical students relative to the general population. *Acad Med.* 2014;**89**(11):1520–5. doi: 10.1097/ACM.0000000000000482. [PubMed: 25250752].
8. Jafari N, Loghmani A, Montazeri A. Mental health of Medical Students in Different Levels of Training. *Int J Prev Med.* 2012;**3**(Suppl 1):S107–12. [PubMed: 22826751].

9. Eisenberg D, Hunt J, Speer N. Mental health in American colleges and universities: variation across student subgroups and across campuses. *J Nerv Ment Dis.* 2013;**201**(1):60–7. doi: 10.1097/NMD.0b013e31827ab077. [PubMed: 23274298].

10. Kessler RC, Berglund PA, Chiu WT, Deitz AC, Hudson JI, Shahly V, et al. The prevalence and correlates of binge eating disorder in the World Health Organization World Mental Health Surveys. *Biol Psychiatry.* 2013;**73**(9):904–14. doi: 10.1016/j.biopsych.2012.11.020. [PubMed: 23290497].

11. Goldberg D. The detection of psychiatric disease by assessment oxford university. London: Oxford; 1972.

12. Sadeghi H, Abedini Z, Norouzi M. Assessment of relationship between mental health and educational success in the students of Qom University of Medical Sciences. *Qom Univ Med Sci J.* 2013;**7**(2):17–22.

13. Bahreynian A, Ghasemi Borumand M. Mental health in resident students of two dormitory of Shahid Beheshti University of Medical Sciences. *Teb va Tazkieh.* 2002;**14**(43):65–75.

14. Tabrizizadeh M, Ardakani Yasini SM, Rostamzade P, Zare M. The Mental Health Status of Students of Medicine and Dentistry; A Study in Shahid Sadoughi University of Medical Sciences, Yazd, Iran. *J Med Educ Dev.* 2012;**9**(1):153–61.

15. Karami S, Pirasteh A. Study of status of mental health in Zanjan University of Medical Sciences. *J Zanjan Univ Med Sci.* 2002;**35**.