Original article

The relationship between mental health status with academic performance and demographic factors among students of university of medical sciences

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(Received: 5 Jul 2016; Accepted: 29 Oct 2016)

Abstract

Background and Purpose: The students studying at the universities of medical sciences deal with numerous stressors during their educational experiences in the healthcare settings, which lead to poor mental health status and low performance. These stressors include the psychological pressures of the environment, the hospital settings, diseases, patients, heavy course load and training, economic and family problems, and no hope for the future career. Regarding this, the present study aimed to investigate the relationship between mental health and academic performance among the students of Golestan University of Medical Sciences, Iran, in 2015.

Methods: This descriptive-analytical cross-sectional study was conducted on the undergraduate students of Golestan University of Medical Sciences using quota sampling method. For the purpose of the study, a total of 270 students were entered into the study from the medicine, nursing and midwifery, health, and paramedical schools. The data collection was performed using a demographic form and the 28-itemed General Health Questionnaire. Additionally, the academic performance was determined using the grade point average (GPA). The data were analyzed using the Spearman correlation coefficient and Chi-square test through the SPSS version 16.

Results: According to the results of the study, the GPA was found to be 15.9±1.54. The means of the somatic symptoms, anxiety/insomnia, social dysfunction, severe depression domains, and total mental health were 3.52±6.57, 6.99±3.97, 8.61±2.95, 4.24 ±4.12, and 27.47±10.55, respectively. The Spearman correlation test demonstrated a positive correlation between the mental health and age ($P<0.001$, r=0.289). Furthermore, the Chi-square test revealed that the total mental health had a significant relationship with the gender ($P=0.013$) and field of study ($P=0.013$). However, no significant relationship was observed between the total mental health and GPA ($P=0.76$).

Conclusion: Considering the importance of the mental health issue in the students of medical sciences, the authorities should pay more attention to solving the students' mental health problems and provide them with more student counseling centers.

Keywords: Academic performance, GHQ, Mental health, University student

Introduction

According to the World Health Organization (WHO), mental health "is not just the absence of mental disorder". It is considered as the state of well-being in which people can cope with normal stresses of life. In other words, mental health includes all aspects of life from home to school, university, workplace, and so forth. The WHO has defined the mental health as the ability to establish harmonious relationships with others, modify the personal and social environments, and resolve the conflicts and personal desires logically, righteously, and properly (1).

Little attention is paid to the mental aspect of health in many countries, especially the developing countries, due to focusing on other health priorities such as epidemics of infectious diseases in the past and chronic diseases in the present era. However, as indicated in the statistics on the prevalence of

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mental disorders in different countries, the mental health status is at a critical level (2).

The experts in the WHO believe that the amount of behavioral and mental issues is on a growing trend in the developing countries. This increase is largely dependent on the population growth and social modifications such as urbanization, changes in people's lifestyle, emotional problems, and mild mental illnesses. Some of these problems are directly related to evolutionary factors of late adolescence. The rate of mental illness is reported to be 10-12% among the students studying in the developed countries. The mental illness is considered as one of the reasons for the students' expulsion, academic failure, and dropout regardless of its severity (3).

According to the literature, the prevalence of mental disorders in Iran is not less than that in other countries (2). In Iran, the prevalence rates of mental disorders have been reported to be 21%, 17.6%, and 15.6% among the adults, the people with 15-24 years of age, and students and university students, respectively (4). Mental health has important role in different periods of life, including young age. At this age, the individuals are encountered with important issues such as fostering relationships, continue studying, finding a favorite career, and marriage, the results and effects of which should be considered in terms of mental health (5).

Adolescents and young adults are more vulnerable to psychological stress. Poor mental health prone this population to negative thinking, direct and indirect aggression, apathy, depression, anxiety, and other behavioral problems in daily life and academic performance. Accordingly, these disorders can affect the various areas of life in this population, particularly their academic performance (6). The students, as thoughtful and creative human resources, have special place in any society. Therefore, measures targeting towards the improvement of mental health among this population, which facilitate their learning and achievement of scientific knowledge, is of fundamental importance.

The university admission is a critical time in the life of the youth in every nation, which exposes them to a stressful situation and affects their performance and efficiency. This new situation embodies some conditions that can be difficult for these individuals or creates psychological discomfort and declines their performance. This conditions include the unfamiliarity of the students with college on admission, detachment from family, lack of interest in the admitted field, incompatibility with other people in the living environment, lack of facilities, as well as financial and other problems (7).

The medical and paramedical students face with numerous stressors in their university life such as economic burden, family problems, poor outlook for career in future, heavy theoretical courses and practical training in hospitals, and working with patients and their issues; therefore, all of these issues make them vulnerable and reduce their efficacy (4).

Mental health plays an important role in ensuring the dynamism and efficiency of each community. Since the students are selected from different strata of society, who are considered as the builders of tomorrow in every country, the issue of improving the mental health in this population has particular importance in facilitating their learning and increasing their scientific knowledge (3).

A study demonstrated a negative significant relationship between depression and academic performance (8). In a study conducted by Walker, which investigated the impact of school-based health center and effectiveness of mental health services on student performance, the use of health services in schools increased the student academic performance (9). In a study, there was no relationship between the mental health and gender, marital status, field of study, and residential status. However, the mental health positively correlated with the interest in the field of study, socioeconomic status, and academic degree (4).

Attending to the mental health of the students as future builders of the country is an important issue because the promotion of mental health in the students can facilitate them to take effective steps in the fields of science and literature. There are a number of studies examining the student mental health. However, the number of the studies investigating

the relationship between mental health and students' academic performance in medical sciences and the importance of mental health on students' academic performance is handful. Regarding this, we decided to investigate the relationship of the mental health with academic performance and some demographic factors among the students of medical sciences in Golestan University.

Materials and Methods

This descriptive-analytical cross-sectional study was conducted on the students of Golestan University of Medical Sciences. The undergraduate students (i.e., BS or MD), who were studying for at least one semester and had no history of chronic physical or mental illnesses were included in the study. On the other hand, those leaving the university for any reason during the research period were excluded from the study.

Based on the sampling formula for descriptive-analytical studies, the sample size was determined to be 226 individuals. Subsequently, the subjects were recruited from the nursing and midwifery, medicine, health, and paramedical schools using quota sampling method. Then, to select the members of each cluster (school), the simple random sampling was performed. After obtaining the approval of the University Research Council (code No.: 931016200) and Ethics Committee, the researchers and co-investigators started data collection. To this aim, the researchers explained the process to the students and obtained their informed consents.

The data collection tool included two parts: I) demographic information: age, gender, marital status, semester, educational level, residential status (i.e., whether the hometown is in Golestan province or other provinces), field of study, and grade point average (GPA), and II) the Persian version of the Goldberg and Hiller's General Health Questionnaire (GHQ-28; 1979). The GHQ-28 has been translated into several languages and used internationally. This questionnaire consists of 28 items and four subscales.

Each of these subscales includes seven items covering: A) somatic symptoms (items 1-7), B) anxiety/insomnia (items 8-14), C) social dysfunction (items 15-21), and D) severe depression (items 22-28). The items of this scale are scored on a four-point Likert scale (i.e., 0-1-2-3), and a higher score indicates poorer mental health status. The estimated alpha coefficient for the translated version of the questionnaire was 0.9. The maximum and minimum scores of this questionnaire were 0 and 84, respectively. The maximum and minimum scores in each subscale were 0 and 21, respectively (10).

The data were checked for normality of distribution using the Kolmogorov-Smirnov test through the SPSS version 16. The data were described using mean, standard deviation, and percentile, and then analyzed by Pearson product-moment correlation and Chi-square tests to find the relationship between the total mental health and demographic data.

All of the ethical principles of research were considered in this study. The research proposal was confirmed by the University Ethics Committee (code No.: 25181693102139). The informed were informed about the confidentiality of information, accessibility to their findings, and their unconditional rights for leaving the study anytime they wish without affecting the academic issues.

Results

Out of the 270 university students participated in this study, 97 (35.92%) individuals were males. Regarding the field of education, 97 (35.9%) and 92 (34.1%) subjects were studying medicine and nursing, respectively, and the rest were majoring in other fields (30%). As the results indicated, 226 (83.7%) and 44 (16.3%) individuals were single and married, respectively. Considering the place of residence, 180 (66.7%) and 90 (33.3%) particicpants were dormitory and non-dormitory students, respectively. In terms of the economic status, 80 (29.6%), 176 (65.2%), and 14 (5.2%) subjects were in good, average, and weak conditions, respectively.

Furthermore, the results indicated that 225 (83.3%) participants were interested in their academic fields. The GPA for academic performance was 15.9±1.54. The means of the somatic symptoms, anxiety/insomnia, social dysfunction, severe depression domains, and total mental health were 3.52±6.57,

Table 1. Demographic Information of the students

Demographic information		Mental health		*P*
		Moderate/Poor	Good	
Sex	Female	55(55%)	119(70%)	0.013
	Male	45(45%)	51(30%)	
Marital status	Single	79(79%)	148(87.1%)	0.081
	Married	21(21%)	22(12.9%)	
Residential status	University dormitory	70(70%)	111(65.3)	0.427
	Living with family	30(30%)	59(34.7)	
Economic status	Good	25(25%)	54(34.8%)	0.177
	Average	67(67%)	110(64.7%)	
	Poor	8(8%)	6(3.5%)	
Interest in the field of study	Interested	83(83%)	145(85.3%)	0.615
	Not interested	17(17%)	25(14.7%)	

6.99±3.97, 8.61±2.95, 4.24±4.12, and 27.47±10.55, respectively.

The Kolmogorov-Smirnov test was used to determine the normality of each of the variables. Since such variables as age, education level, and GPA were not normal, the Spearman correlation coefficient test was used for the analysis. The results of this test demonstrated a positive correlation between the mental health and age ($P<0.001$, r=0.289), indicating that the students' mental health improves with increasing age. The Chi-square test was used to determine the relationship of the total mental health with gender, field of study, educational level, place of residence, and academic interest. This test revealed that the total mental health had significant relationships with gender (*P=0.013*) and field of education (*P=0.013*).

Furthermore, the female students had better mental health than their male counterparts. In addition, the nursing students had better mental health, compared to the other students who were majoring in other fields. The Chi-square test revealed that the average mental health (*P=0.763*), semester (*P=0.45*), marital status (*P=0.08*), place of residence (*P=0.427*), economic status (*P=0.177*), and interest in the field of study (*P=0.615*) were not significant in this regard.

The Chi-square test demonstrated that the total mental health had no significant relationship with GPA (*P=0.763*), semester (*P=0.45*), marital status (*P=0.08*), residential status (*P=0.427*), economic status (*P=0.177*), and interest in the field of study (*P=0.615*).

Discussion

As the findings of this study indicated, the total mental health score (7.47±10.55) was similar to that obtained in some other studies (4, 11). Based on the mental health questionnaire scores, the students enjoyed good mental health. The medical and paramedical students spend long time on educating in the hospitals, which are potentially stressful environments. Consistent with other studies, the social dysfunction and depression subscales had the highest and lowest mean scores, respectively (4, 11-14). The high mean score of the social dysfunction may be caused by the effect of the environmental education and its related stressors that affect social functioning more than any other factors.

Since the students lack sufficient experience, they need to utilize the counseling, social skill training, and coping methods to deal with various difficulties they face in different environments such as school. According to the findings of the present study, there was a significant relationship between the total mental health scores and academic achievement

(i.e., GPA), which is in line with the findings of Yosofi et al. (3) and inconsistent with those of some other studies (15-17). A study in Chile showed that the mental health can be an important predictor of the students' academic performance (18).

In the present study, the relationship between the total mental health and age was significant, i.e., the mental health was improved with increasing age. Similarly, in a study carried out in Denmark, it was demonstrated that the mental health was significantly associated with age (19). According to the findings of the current study, the female students had better mental health scores than their male counterparts. While some studies do not support this finding (3, 15), there is evidence that is consistent with our result (14). We are not certain about the reason of lower mental health scores in male students; perhaps, it is a context-based and common phenomena.

Furthermore, there was a significant relationship between the total mental health score and filed of study, showing that the nursing students had better score than the others. This finding can be attributed to the fact that the nursing profession has fundamental differences with other medical and paramedical vocations. Nevertheless, there are studies (with similar context and different study groups) that do not support this finding (4, 12, 17).

The mental health score showed no significant relationships with the marital status, semester, residential status, interest in the field of study, and economic situation, which is in line with the findings of some studies (4, 12, 17). However, several studies revealed that the total mental health score had significant relationships with the field of study and economic status (4, 12, 17, 20). The results of a study carried out in Denmark indicated that the mental health had no relationship with the economic status and gender (19). This discrepancy can be due to the differences in the cultural context as well as social and economic status in Iran as compared to other countries.

Limitation of the study is that in this cross-sectional study, we fell short of determining the causal relationships among the mental health, academic achievement, and demographic variables. Since academic achievement and mental health are influenced by many underlying known and unknown factors, performing a longitudinal prospective study is recommended.

Conclusion

As the findings of the present study demonstrated, the mental health scores had significant relationships with age, gender, and field of study. Considering the importance of the mental health issue in the students of medical sciences, the academic stakeholders should pay more attention to this issue among the university students and provide them with psychological support systems and counseling centers.

Conflicts of interest

There is no conflict interest.

Authors' contributions

H. Manchri, A. Sanagoo, L. Jouybari, Z. Sabzi, and SY. Jafari contributed to conceiving the idea of the study, collecting data, as well as analyzing and editing the manuscript.

Acknowledgements

This project was approved at the 26th meeting of Research Council of Golestan University of Medical Sciences (code NO.: 931016200) and Ethics Committee (code NO.: 25151693102139). Hereby, the researchers express their gratitude to the Education Development Center for their supports and the students for participating in this study.

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