

Psychological Health of First-Year Health Professional Students in a Medical University in the United Arab Emirates

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الصحة النفسية لطلاب السنة الأولى للمهن الصحية في جامعة طبية بالإمارات العربية المتحدة

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الملخص: الهدف: تقييم الصحة النفسية ودراسة مصادر الإجهاد لطلاب السنة الأولى للمهن الصحية. **الطريقة:** تمت دعوة جميع طلاب السنة الأولى (125 طالباً) من جامعة الخليج الطبية في عجمان بالإمارات العربية المتحدة للمشاركة في مسح استبياني ذاتي تطوعي في يناير عام 2011. اعتمد تقييم الصحة النفسية في الدراسة على استخدام استبيان صحي عام يتضمن 12 بنداً، كما تم استخدام استبيان آخر يشمل 24 بنداً «مرتبطاً» بالمجالات الصحية والتعليمية والنفسية للتعرف على مصادر الإجهاد. استخدمنا في هذه الدراسة نوعين من الاختبارات الإحصائية وهما مربع كاي بيرسون واختبار مان-ويتني يو لاختبار الارتباط بين مصادر الإجهاد والاعتلال النفسي. **النتائج:** شارك 112 طالباً (89.6%) في هذه الدراسة وأظهرت النتائج أن نسبة انتشار الاعتلال النفسي بين الطلبة كانت 33.6%. وظهر أن المصادر الأكاديمية الرئيسية للقلق تشمل «تعدد الاختبارات» و«الضغط الأكاديمي» و«تنظيم الوقت». أما الضغوطات النفسية الاجتماعية الأخرى فشملت «الخوف من المستقبل» و«توقعات الوالدين» و«القلق» و«التعامل مع الجنس الآخر». وفيما يختص بالمصادر الصحية المسببة للاعتلال النفسي فقد شملت «عدم تنظيم مواعيد الطعام» و«قلة ممارسة الرياضة» و«المشاكل المتعلقة بالنوم». لم يرتبط المرض النفسي بأي من العوامل الديموغرافية التي شملتها الدراسة، غير أنه ارتبط بنسبة القلق النفسي ومجموع التحصيل الأكاديمي. **الخلاصة:** يعاني من الاعتلال النفسي واحد من كل ثلاث طلاب من طلبة السنة الأولى في جامعة الخليج الطبية. كانت المخاوف المرتبطة بالمستقبل وتوقعات الوالدين من مصادر القلق لعدد كبير من الطلاب، أما الاعتلال النفسي فقد ارتبط بشكل ملحوظ بالضغط الكلي ومجموع التحصيل الأكاديمي.

مفتاح الكلمات: الإجهاد النفسي، طالب طب، مهن صحية، تعليم طبي جامعي، الإمارات العربية المتحدة.

ABSTRACT: Objectives: The aim of this study was to assess the psychological health of first-year health professional students and to study sources of student stress. **Methods:** All first-year students (N = 125) of the Gulf Medical University (GMU) in Ajman, United Arab Emirates (UAE), were invited to participate in a voluntary, anonymous, self-administered, questionnaire-based survey in January 2011. Psychological health was assessed using the 12-item General Health Questionnaire. A 24-item questionnaire, with items related to academic, psychosocial and health domains was used to identify sources of stress. Pearson's chi-squared test and the Mann-Whitney U-test were used for testing the association between psychological morbidity and sources of stress. **Results:** A total of 112 students (89.6%) completed the survey and the overall prevalence of psychological morbidity was found to be 33.6%. The main academic-related sources of stress were 'frequency of exams', 'academic workload', and 'time management'. Major psychosocial stressors were 'worries regarding future', 'high parental expectations', 'anxiety', and 'dealing with members of the opposite sex'. Health-related issues were 'irregular eating habits', 'lack of exercise', and 'sleep-related problems'. Psychological morbidity was not significantly associated with any of the demographic factors studied. However, total stress scores and academics-related domain scores were significantly associated with psychological morbidity. **Conclusion:** Psychological morbidity was seen in one in three first-year students attending GMU. While worries regarding the future and parental expectations were sources of stress for many students, psychological morbidity was found to be significantly associated with only the total stress and the academic-related domain scores.

Keywords: Psychological stress; Medical student; Health professions; Undergraduate medical education; United Arab Emirates.

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ADVANCES IN KNOWLEDGE

- This study investigates psychological morbidity in health professional students in the Arab region.
- The association of psychological morbidity with total stress levels highlights the importance of addressing sources of stress in health professional students.
- While a number of stressors are similar to those experienced by medical students in other parts of the world, some sources unique to the region have also been found.

APPLICATION TO PATIENT CARE

- This study showed that early detection of psychological morbidity; appropriate support in the form of career counselling; teaching techniques to reduce stress and resolve conflicts; sessions with parents, if necessary, and creating sports and recreational opportunities on campus may help in improving the psychological health of the health professional students.

A UNIVERSITY STUDENT'S LIFE IS SUBJECT to many different kinds of stress. Sources of student stress can be academic pressures, social or personal issues, and financial problems. In recent years, there has been a growing appreciation of the stresses involved in the training of health professionals. Several studies have shown stress among medical students and qualified doctors to be higher than that of the general population and other college students.^{1,2} Health professional students not only have to face the challenge of a rigorous curriculum, but also have to learn to deal with emotionally difficult experiences. The pressures put on students by academics, an obligation to succeed, the difficulties of integrating into the system, and social, emotional and family problems are all potential stressors which can affect learning ability and academic performance.^{3,4} High stress levels have been reported in not only medical, but also in dental, pharmacy and physiotherapy students from various parts of the world.^{1,2,5-7} Studies from Arab countries also indicate high stress levels in medical and dental students.⁸⁻¹³

The Gulf Medical University (GMU) in Ajman, United Arab Emirates (UAE), is a 13-year-old international university where students from different cultures, educational backgrounds, and parts of the world study together. A large number of students are in the UAE for the first time. Many first-year students are adjusting not only to a new learning environment but also to a new culture during their training in GMU. Our objective was to assess the psychological health of the first-year health professional students and to study the various sources of psychological stress.

Methods

A cross-sectional survey using a voluntary,

anonymous, self-administered questionnaire was carried out in January and February 2011, about five months after the first-year students had joined GMU. All 125 first year undergraduate students were contacted for the survey. This study was approved by the Ethics Committee of GMU. Participants were informed about the study, verbal consent was taken, and participation was voluntary and anonymous.

The questionnaire had three parts. The first part obtained demographic details. The second part of the questionnaire was the well-validated 12-item General Health Questionnaire (GHQ-12).^{14,15} The GHQ-12 method of scoring (0-0-1-1) was used.¹⁶ Scores were summed up to give a total score for each student, with a maximum possible score being 12. Based on the mean and median values, a cutoff score of 4/5 was considered appropriate. Students with scores of 0-4 were coded as having no or very few signs of possible mental health problems (i.e. were in normal psychological health [N]), while students with scores of 5 and above were determined to be GHQ-12 cases and to have psychological morbidity (PM).¹⁷

Sources of stress were identified in the third part of the questionnaire, which was based on the studies by Sreeramareddy *et al.* and El-Gilany *et al.*^{18,9} It had 24 items grouped into three domains: academic-related, psychosocial, and health-related. It was developed with the help of experts in the field, checked for validity, and pilot tested before use. Students were asked to rate the frequency of occurrence of the stressor on the scale 'never/rarely', 'sometimes', or 'often/always'. 'Never/rarely' and 'sometimes' were given a score of 0 and responses of 'often/always' were scored as 1. Negatively worded questions were reverse scored. Data were entered into the Predictive Analytics SoftWare (PASW)

Table 1: Demographic variables and psychological health of the students

Variable*	Group	Normal Number (%)	Psychological Morbidity Number (%)	Total Number
Gender	Female	46 (63.4)	27 (36.6)	73
	Male	27 (69.2)	12 (30.8)	39
Programme	MBBS	28 (60.9)	18 (39.1)	46
	DMD	20 (69)	9 (31)	29
	Pharm D	14 (73.7)	5 (26.3)	19
Marital status	BPT	12 (66.7)	6 (33.3)	18
	Unmarried	64 (66)	33 (34)	97
	Married	10 (66.7)	5(33.3)	15
Language of instruction in high school	English	55 (68.8)	25 (31.3)	80
	Other	19 (59.4)	13 (40.6)	32
Accommodation	Living alone (hostel/apartment)	37 (69.8)	16 (30.2)	53
	Living at home	37 (62.7)	22 (37.3)	59
Family details	Parents living together	60 (64.5)	33 (35.5)	93
	Parents separated/divorced	14 (73.7)	5 (26.3)	19
Parent(s) in a health-related profession	Yes	21 (67.7)	10 (32.3)	31
	No	53 (65.4)	28 (34.6)	81
On financial aid/scholarship	Yes	7 (87.5)	1 (12.5)	8
	No	67 (64.4)	37 (35.6)	104
Self-reported academic performance	Satisfactory	27 (67.5)	13 (32.5)	40
	Unsatisfactory	47 (32.5)	25 (67.5)	72

Legend: MBBS = Bachelor of Medicine, Bachelor of Surgery; DMD = Doctor of Dental Medicine;

Pharm D = Doctorate in Pharmacy; BPT = Bachelor of Physiotherapy

*None of the variables were found to be significantly associated with psychological morbidity

Statistics software (Version 18, SPSS-IBM, Chicago, Illinois, USA) and analysed. Pearson's chi-squared test and the Mann-Whitney U-test were used for testing significance.

Results

All 125 first year undergraduate students were contacted for the survey. Of that number, 112 students completed the survey, giving a response rate of 89.6%. The characteristics of the participants are given in Table 1.

The students' psychological health is shown by the distribution of the GHQ-12 scores in Figure 1. The mean \pm standard deviation (SD) of the GHQ-12 score was 3.53 ± 2.57 , while the median GHQ-12

score was 3.0.

Using the GHQ-12 and a cutoff of 4/5, the prevalence of psychological morbidity was found to be 33.6% in the first-year undergraduate students at GMU.

As shown in Table 1, more psychological morbidity was seen in female students (36.6%) as compared to male students (30.8%). Psychological morbidity was also found to vary among students in the different programs. Morbidity was higher (40.6%) in students with other languages of instruction in high school compared to those who had been taught in English (31%). However, psychological morbidity was not found to be significantly associated ($P > 0.05$) with any of the demographic groups studied.

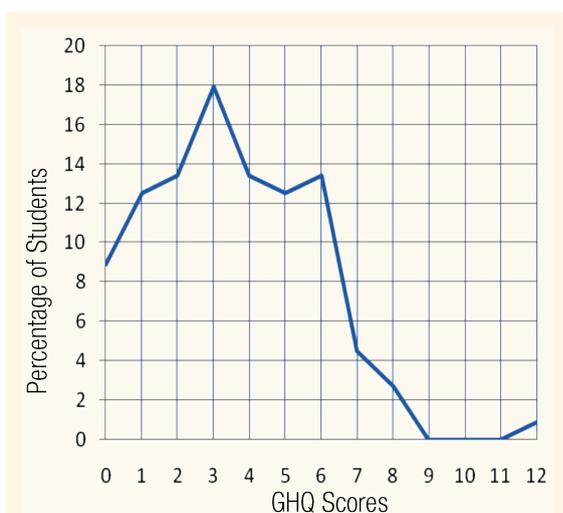


Figure 1: Distribution of General Health Questionnaire-12 scores of the first-year undergraduate students (N = 112)

The stressors were classified into three domains: academic-related, psychosocial and health-related. In the academic-related domain, the total student population identified the following as 'often' or 'always stressful': 'frequency of exams' (22%), 'academic workload' (19%), and 'time management' (19%). In the psychosocial domain, the main concerns were 'worries regarding future' (50.5%), 'high parental expectations' (45%), 'anxiety' (21%) and 'dealing with members of the opposite sex' (18%). Getting along with peers, loneliness, and financial or family problems were identified as stressors by less than 10% of the students. Among the health-related issues, 'irregular eating habits', 'lack of exercise', and 'lack of a healthy diet' were reported as 'often' or 'always stressful' by 39%, 35% and 22.5% of the total student population, respectively. Sleep-related problems were a concern for 25% of the students. Illness and tobacco/alcohol abuse were identified as stressors by only 6 and 4 students, respectively.

Table 2 compares the percentage of students in the normal and psychologically morbid groups reporting academic-related, psychosocial, and health-related stressors. Within the academic-related domain, only 'satisfaction with lectures/classes' and 'ability to concentrate' were negatively associated with psychological morbidity ($P < 0.05$). In the psychosocial domain, 'family problems' were found to be significantly associated with psychological morbidity, while in the health-related

domain, 'lack of regular eating habits' was associated with significantly more students in normal health compared to those with psychological morbidity. Between the two groups, none of the other stressors were found to be statistically different.

A total stress score and stress scores in each of the three domains were generated for each student. The median total stress score of the psychological morbidity group was 5 while that of the normal group was 4. This difference was statistically significant ($P < 0.05$). Among the three domains, only the median academic-related domain score was significantly different ($P < 0.05$) between the students in normal psychological health (0) as compared to those having psychological morbidity (2).

Discussion

Stress is a physical, mental, or emotional response to events that causes bodily or mental tension. In small amounts, stress is normal and can help us be more active and productive. However, very high levels of stress experienced over a prolonged period can cause significant mental and physical problems.

GMU has a very diverse student population with students of 35 different nationalities coming from 15 different educational systems studying in the university. Adjusting to a new country, culture, educational system, along with being away from home for the first time, can cause significant amounts of stress. Since students join GMU after high school, most of the students in the first year are very young, with 92% being less than 21 years old. Female students outnumber male students; this is a trend that can be seen in all healthcare-related programmes at all universities in the UAE. About 29% of first-year students have studied science in a language other than English in high school, usually in Arabic or Persian. None of the students work part-time due to UAE laws. Very few students receive financial aid or scholarships, with most supported by their families.

Using the GHQ-12, the prevalence of psychological morbidity was determined to be 33.6% in first-year students. This prevalence, although high, is lower than that seen in medical students from the UK (36%), Iran (40%), or Malaysia (46%);¹⁹⁻²¹ however, it is higher than that reported from Nepal (20.9%),¹⁸ and lower than that reported in dentistry

Table 2: Percentage of students identifying stressors in the normal health and psychological morbidity group

Type of stressor	Percentage of Students	
	Normal Health (n = 73)	Psychological Morbidity (n = 39)
Academic		
Academic workload too much	15.1	26.3
Satisfied with classes	97.3	*76.3
Too frequent examinations	17.8	28.9
Satisfied with performance in examination	87.7	73.7
Learning material available	90.4	84.2
Difficulty reading textbooks	12.3	21.1
Able to manage time	84.9	73.7
Able to concentrate	94.5	*81.6
Psychosocial		
Anxiety	17.8	26.3
Parental expectations too high	42.5	50
Worries about future	52.1	47.4
Problems adjusting to classmates	9.6	10.5
Loneliness	8.2	7.9
Financial problems	4.1	10.5
Family problems	1.4	*13.2
Difficulty getting along with members of the opposite sex	20.5	13.2
Lack of recreation	30.1	23.7
Health-related		
Lack of healthy diet	23.3	21.1
Irregular eating habits	45.2	*26.3
Sleep problems	21.9	31.6
Illness/health problems	2.7	10.5
Tobacco/alcohol/substance abuse	1.4	7.9
Lack of exercise	39.7	26.3

*Significant difference between the two groups ($P < 0.05$)

students from Jordan (70%) and Iraq (51%).^{12,13} We could not find any statistically significant difference in the prevalence of psychological morbidity between the genders [Table 1]. Conflicting reports are available in the literature, with some reporting a higher prevalence of psychological distress in females while others have reported no gender differences.^{1,2} There was no significant difference in the prevalence of psychological morbidity among students studying in different programmes at GMU. Some studies have reported higher stress

levels in dentistry students compared to medical students while others have found higher levels of stress in medical students as compared to other health-related professions.^{22–23} The prevalence of psychological morbidity was higher in students who had studied in a language other than English at school compared to those who had studied in English [Table 1]. This observation, though not found to be statistically significant, correlates well with the higher percentage of students reporting 'difficulty in reading textbooks' in the psychological

morbidity group [Table 2]. Even though the Test of English as a Foreign Language (TOEFL) is a mandatory requirement for admission into GMU, students who have studied in Arabic or Persian in high school often find it difficult to keep up with reading assignments in the first year. These findings are similar to the difficulty in reading textbooks and the translation of English terms reported by 44.8% of students from a medical college in Egypt where most of the students had studied in Arabic in high school, as well as the anecdotal references in a study from Saudi Arabia.^{24,8}

The total stress score was found to be significantly associated with psychological morbidity. Though academic-related stressors were concerns for fewer students than psychosocial or health-related issues, a significant difference was found between the median academics-related domain stress scores of normal students and those with psychological morbidity. This also correlates well with the finding that significantly more students with psychological morbidity were dissatisfied with lectures/classes and were unable to concentrate in classes [Table 2]. These findings are similar to those reported in literature where stress in medical students was found related to academic training rather than personal factors.^{8,25} While similar proportions of self-reported unsatisfactory academic performance were found in healthy students and those having psychological morbidity [Table 1], it is interesting to note that among those with self-reported unsatisfactory academic performance, 67.5% had psychological morbidity, which correlates well with the significantly higher academic domain stress scores in students with psychological morbidity.

In the psychosocial domain, about half the student population reported often or always worrying about the future. This was surprising considering that these students had just entered the university and joined a professional programme. 'High parental expectations' was also a cause of stress for 45% of the student population. This finding is similar to that reported from Asian countries like Nepal and Pakistan where 'high parental expectations' were a cause of stress for 52 and 63% students, respectively.^{18,26} In this context, it is also interesting to note that there was a significant association between family problems and psychological morbidity [Table 2]. Dealing with members of the opposite sex was reported

as stressful by 18% of the students. This was not unexpected since GMU is one of the few universities in the UAE with mixed gender classes. Most high school students in Arab countries study in single gender schools and young people do not have much interaction with members of the opposite sex in academic or social settings. Similar findings have been reported in a recent study from Australia where Saudi international students transitioning from a single gender to a mixed gender environment experienced stress.²⁷

Anxiety is an issue for many students (21%), but making friends at GMU does not seem to be a problem for most students as difficulty in getting along with peers and loneliness were concerns for less than 10% of the students. This is very encouraging since adjusting to a new environment is much easier if students can make friends. Since most of our students are supported by their families, financial problems were identified as a concern by less than 10% of the students.

Lack of recreation was identified as a stressor by 25% of the students. GMU is located in a small emirate in the UAE and affords few avenues for entertainment. Further, most students do not find time or opportunities to pursue their hobbies as is true for students in health-related professional training around the world.^{2,5}

In the health-related domain, the lack of a healthy diet and irregular meals were reported by many students. Young adults, especially those living away from home, often do not eat at regular times or eat healthily, so this is not unexpected. It is encouraging to note that they are aware that they are not practicing healthy lifestyles. Sleep-related problems were a concern for 1 in 4 students. This is significant and is similar to reports in literature regarding sleep problems in medical students and needs to be addressed.²⁸⁻³⁰ Illnesses and tobacco/alcohol abuse were reported by only 6 and 4 students, respectively. This is a small percentage of the student population, but is not unexpected since the UAE is an Islamic country with strict rules regarding alcohol consumption, and most of the first-year students are very young.

This study has some limitations. All data obtained was self-reported, including academic performance, so the results need to be interpreted with care. It is possible that some students might have been in denial about certain issues or, due to

cultural reasons, were not able to answer certain questions truthfully. The study was a cross-sectional survey taken midway through the first year and may not be representative of student behaviours over time. The conclusions drawn are based on the data obtained from GMU and may not be applicable to other universities. We did not study the psychological health of other university students in the UAE for comparison.

Conclusion

In the first year of undergraduate studies at GMU, one in three students had psychological morbidity when screened using the GHQ-12. There was no significant difference in psychological morbidity between the genders. High parental expectations and worries about the future were sources of stress for about half the students. Anxiety, sleep-related issues, lack of recreation, and poor eating habits were also reported by many students. Total stress was significantly associated with psychological morbidity, highlighting the need for measures to reduce stress in students. While academic-related sources of stress were significantly associated with psychological morbidity, no such associations were seen for the psychosocial or health-related sources of stress.

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CONFLICT OF INTEREST

This study was carried out in the Gulf Medical University, Ajman, UAE, in January-February 2011 and was a non-funded study. None of the authors has any conflict of interest.

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