Original article

Correlates of psychiatric morbidity among Pakistani medical students: A cross sectional survey

Rafia Zubair, [1] Umar Farooq Dar [2].

1. MBBS Student, Gujranwala medical college, Gujranwala, Pakistan

2. Assistant professor, Department of family and community medicine, College of medicine, Jouf University, KSA

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Corresponding author: Dr. Umar Farooq Dar, FCPS (Community medicine)
Assistant professor (Department of family and community medicine,
College of medicine, Jouf University, KSA)
Email:ufdar@ju.edu.sa

ABSTRACT

Aim & Background:
Cultural variations among medical students is one of the factors causing stress and psychological morbidity. This study was carried out to determine presence of psychological morbidity and its association with different sociodemographic characteristics among medical students of a public sector college.

Methods:
This cross-sectional study was carried out in Gujranwala Medical College, Gujranwala. Eighty-six students out of one hundred selected students by simple random sampling completed the self-administered proforma. It contained socio demographic profile, 12- item General Health Questionnaire (GHQ-12) and standardized sources of academic stress. Psychological morbidity or stress was labelled if student scored GHQ score ≥ 21.

Results:
Twenty-three students (26.7%) were GHQ-12 cases (i.e., scored ≥21) i.e. suffering from severe stress. Among these students, majority were female (73.91%), in their clinical years (73.91%) and living in hostel (56.52%). Academic concerns and psychosocial factors like feeling of being lonely, mood swings and being worried about expectations of parents were major stressors among all the students. Hostelers were worried about the quality of food in mess and feeling of homesickness.

Conclusion:
It is noteworthy, that in our study population, academic demands were additional sources of psychological morbidity besides other personal and psychosocial issues. It is the need of the hour to intervene at the psychological, social and academic level to improve the quality of life for medical students. This will help in avoiding many psychological problems in the future.

Keywords: Academic stress, psychiatric morbidity, medical students, medical education, GHQ 12,

الملخص

خلفية البحث و الهدف:
الاختلافات الثقافية بين طلاب الطب هي واحدة من العوامل التي تسبب التوتر والاعتلال النفسي. لقد أجريت هذه الدراسة لتحديد وجود اعتلال نفسي و مدى ارتباطه مع الخصائص الاجتماعية والديموغرافية المختلفة لطلاب الطب في الكلية الحكومية.

الطريقة: أجريت هذه الدراسة المقطعية في كلية الطب بمدينة جوجرانوالا., والتي كانت في صورة استبيان ذاتي الإدارة, عدد ستة وثمانون طالبًا من بين مائة طالب تم اختيارهم عن طريق أخذ عينات عشوائية بسيطة. احتوى الاستبيان على المعلومات الديموغرافية و الاجتماعية، ١٢ بندًا الخاصة باستبيان الصحة العامة (GHQ-١٢) والمصادر القياسية للتوتر الأكاديمي. تم حديد التوتر والاعتلال النفسي إذا سجل الطالب درجة أعلى من أو تساوي ٢١ على مقياس GHQ.

النتائج:
ثلاثة وعشرون طالبًا (٢٦,٧٪) كانوا من حالات GHQ-١٢ (سجلوا درجة أعلى من أو تساوي ٢١) أي يعانون من توتر شديد. من بين هؤلاء الطلاب ، كانت الغالبية من الإناث (٧٣,٩١ ٪) ، في سنوات الدراسة السريرية (٧٣,٩١ ٪) أو الذين يعيشون في نزل (٥٦,٥٢ ٪). الاعتبارات الأكاديمية والعوامل النفسية والاجتماعية مثل الشعور بالوحدة وتقلب المزاج والقلق بشأن توقعات أولياء الأمور كانت الضغوطات الرئيسية لجميع الطلاب. ساكنوا النزل كانوا أيضا قلقين بشأن نوعية الطعام المقدم لهم بالإضافة الى الشعور بالوحدة.

الخلاصة:
تجدر الإشارة إلى أنه في المجتمع قيد الدراسة ، كانت المطالب الأكاديمية مصادر إضافية للاعتلال النفسي بالإضافة إلى القضايا الشخصية والنفسية الاجتماعية الأخرى. إننا بحاجة الى التدخل على المستوى النفسي والاجتماعي والأكاديمي لتحسين جودة الحياة لطلاب الطب حيث أن هذا سوف يساعد على تجنب العديد من المشاكل النفسية في المستقبل.

INTRODUCTION

In a medical or biological context stress is explained as a physical, mental, social, environmental or emotional element that causes bodily or mental strain and unease [1]. It is an unavoidable part of medical college experience that can affect students at any time and place [2,3].

Medical students are burdened under high expectations from the society. They are expected to be the master of their skills and learn a large amount of information [4]. They have to make personal and social sacrifices to do well in a competitive environment which places them under a lot of stress [5, 6]. Moreover, in recent years due to rising awareness about quality of life issues and increased demand of quality thereof, medical students feel stressed. This phenomenon of being constantly under strain may be due to awareness of the fact that they are carrying a huge responsibility.

The process of learning and cognitive functioning in medical students can be adversely affected by high levels of stress [7]. Previous studies suggest that in the beginning, some medical students develop mental health problems that are worse in the beginning but regresses with passage of time[7, 8]. One article stated that"they experience multiple fears in metamorphosis from insecure student to an expert physician" [9]. As a matter of fact, change of environment has a great negative influence on a person's psychological condition [10-12].

Distress experienced during medical school can not only cause immediate morbidity but can also foretell later problems in a doctor's life. It may possibly lead to personal suffering and may effect quality of health care provided to the patient. Due to awareness of this issue amongst the medical community, there have been many studies worldwide on psychosocial problems of the medical students but local data is scarce.[14-17] Most of them have focused on psychosocial problems e.g. stress, burnout and depression.[15-17] However, the current study aims to find out the prevalence and causes of stress focusing on stressors like academic as well as psychosocial and other factors in relation to psychiatric morbidity. We are experiencing a revolutionary change in medical education in Pakistan. The emphasis on mental health issues among medical students have been very less so far. A search of local studies on the subject did not yield any data which could be used as a baseline for comparison purpose.

Methodology :

This cross-sectional observational survey was carried out among the male and female undergraduate students of Gujranwala Medical College, Gujranwala from 1st May 2015 to 30th January 2016. The college has an enrollment of one hundred students each year (500 total students) and an annual system of examination, which is structured into 5 years i.e. first two foundation years and three clinical course years. Required sample size was 93 rounded off to one hundred, taking expected prevalence of severe stress 20.9% [13] at 7.5% mar-

gin of error and total population of 500. Taking sampling frame of all enrolled students in medical college, 100 male and female students were selected from all five years using simple random probability sampling. These students were approached for voluntary participation in the study after ethical approval. Eighty-six students (86%) responded to the self-administered data collection tool which included the sociodemographic profile, 12 item General Health Questionnaire (GHQ-12) and 28-item source of stress questionnaire.

General Health Questionnaire (GHQ-12) is a standard screening instrument to detect current, diagnosable psychiatric disorders and is intended for use in general practice and community settings.[18-21] The GHQ scoring method (0-1-2-3-4) was adopted, and a cut-off point of 21 was used in accordance with previous studies (and is noted as "psychiatric morbidity' in the result section).[14, 15] The 28-item source of stress questionnaire previously used by Sreeramareddy et al was adapted with subtle adjustments to the contents. [13] In majority of the questions the frequency of occurrence of each potential stressor was rated as 'never', 'rarely', 'sometimes', 'frequently' and 'always' and scored using Likert scale as 0,1,2,3 and 4. To allow for inferential statistical calculation, the 5-way Likert responses were reduced to binomial responses of 'less' (i.e. 'never'/'rarely'/'sometimes') and 'more' (i.e. 'frequently'/'always').

Data was entered and analyzed using the statistical package for social sciences version 21 (SPSS 21, IBM, Illinois). Categorical variables like sex, psychological morbidity, source of stress was presented as frequencies and percentages. The continuous variable like score on GHQ-12 was presented as mean ± standard deviation. Data was stratified to determine the effect of different characteristics on psychological morbidity using Chi-square test of significance (Fischer exact test in case of any cell expected count less than five). A p value of $\leq$ 0.05 was considered as significant.

Results

The total sample size of this study was 100 out of which 86 (86%) responded. There were 65 (75.6%) females and 21 (24.4%) males, 23 (26.7%) were in their foundation years and 63 (73.3%) were in their clinical years. In our study, 30 (34.9%) were day scholars and 56 (65.1%) were living in hostels, 5 (5.8%) of them were living with single parent and 81 (94.2%) were having both of their parents alive and living together. All of them were Muslims. According to GHQ-12 categorization, 17.4% of the students fall in the category of low distress, 55.8% in typical distress, 20.9% in psychosocial distress and 5.8%, in severe distress. Among sampled population, twenty-three students scored ≥21 on the general health questionnaire (GHQ-12) and were considered as having psychological morbidity i.e. cases. The mean score on GHQ-12 was 17.56±5.112. Academic concerns (e.g. dissatisfaction with teaching methodology (55.8%) and pre-exam tension (41.9%)) and psychosocial factors (e.g. experiencing high

expectations from parents (53.5%), mood swings (40.7%) and headache (29.1%)) were major stressors among all the students and being worried about the quality of food in mess (52.3%) and feeling of homesickness (17.4%) were major stressors in the students living in hostel. (Table I).

Table I: 12-Item General Health Questionnaire (GHQ-12) and Sources of stress in students

Categorization of Psychological morbidity	Low distress	15(17.4%)
	Typical distress	48(55.8%)
	Evidence of psychosocial distress	18(20.9%)
	Severe distress	5(5.8%)
Possible Causes of stress	Response	n (%)
Any sibling doctor or a medical student	Yes	20 (23.3%)
Family setup of living	Joint	18(20.9%)
	Nuclear	68(79.1%)
Headache	Frequently, always	25(29.2%)
Social circle	Limited	58(67.4%)
Reason of studying medicine	Forced by parents Influenced by siblings	8(9.3%) 9(10.5%)
Can your parents afford your studies/fulfill all requirements?	Not easily Not at all	8(9.3%) 1(1.2%)
Being satisfied with academic score	Somehow Not at all	56(65.1%) 8(9.3%)
Being worried about expectations of parents and family	Yes	46(53.5%)
Satisfied with hostel life	Somehow Not at all	39(45.3%) 13(15.1%)
Difficulty in adjusting with roommates	Somehow Yes	20(23.3%) 9(10.5%)
Satisfied with quality of food in mess	Somehow Not at all	15(17.4%) 45(52.3%)
How often do you visit your home?	Every weekend Twice a month Once a month After 3-4 months	40(46.5%) 12(14%) 6(7%) 2(2.3%)
Feeling of homesickness	Frequently, always	15(17.4%)
How often do you fall sick?	Once a week Twice a month	5(5.8%) 17(19.8%)
Difficulty in study	Frequently, always	24(27.9%)

Satisfied with teaching methodology	No	48(55.8%)
Feeling of being lonely in gathering	Frequently, always	12(14%)
Feeling of nausea, vomiting, diarrhea, palpitations etc. during exams	Frequently, always	36(41.9%)
Feeling of being dumb	Frequently, always	12(14%)
Suicidal thoughts	Frequently, always	2(2.3%)
Any voices in mind/hallucinations	Frequently, always	3(3.5%)
Mood swings	Frequently, always	35(40.7%)
Difficulty in sleeping	Frequently, always	15(17.4%)

Table II: Effects of sociodemographic data on General Health Questionnaire (GHQ-12) categories

Variables	Categories	Psychological morbidity n (%)	No psychological morbidity n (%)	P Value using chi square test
Gender	Male Female	6(26.08%) 17(73.91%)	15(23.8%) 48(76.19%)	0.828
Class	Foundation years Clinical years	6(26.08%) 17(73.91%)	17(27%) 46(73%)	0.934
Living status	Day scholar Living in hostel	10(43.47%) 13(56.52%)	20(31.74%) 43(68.25%)	0.312
Current status of parents	Both alive and living Single parent	20(86.95%) 3(13.04%)	61(96.82%) 2(3.17%)	0.116

Among the students who had psychological morbidity, 73.91% were females and 26.08% males (p=0.828). 73.9% were in their clinical years and 26.08% were in their foundation years (p=0.934). Among 23 students with psychological morbidity, 56.52% were living in hostel and 43.47% were day scholars (p=0.312). Among GHQ cases, 86.95% had both their parents alive and living together and 13.04% had single parents (p=0.116). All of the results were non-significant.

Students with morbidity compared to those with no morbidity demonstrated significant differences as assessed on the GHQ-12 scores. Values which led to psychiatric morbidity was significantly associated with feeling of being lonely (83.3%, p=0.000), mood swings (45.7%, p=0.001), feeling of being dumb

(66.7%, p=0.002), being sick (p=0.002), being worried about expectations of parents (37%, p=0.022), family setup of living (p=0.033), difficulty in adjusting with roommates (22.2%, p=0.035) and being satisfied with academic score (50%, p=0.041). In addition there were non-significant differences related to any voices in mind/hallucinations (33.3%, p=1.000), suicidal thoughts (50%, p=0.466).

Discussions

In our study, twenty-three students (26.7%) scored ≥ 21 on the GHQ-12 and were considered as having psychological morbidity. 17.4% of the students fall in the category of low distress, 55.8% in typical distress, 20.9% in psychosocial distress and 5.8%, in severe distress. GHQ cases came out to be 26.6% and so the rest of them i.e. 73.3% were GHQ non-cases. The mean score on GHQ-12 was 17.56±5.112. Based on the results analysis, we may suggest that the stress level is high among our sampled population. In previous studies, similar results were reported. In a study by Yussuf et al., researchers found overall prevalence of stress about 25.9% among Nigerian medical students. They utilized GHQ-12, and 40 item stressor questionnaires. From the various factors involved to cause stress the students perceived academic requirements to be the most stressful (among 58.2% of the participants). In their cross sectional study, Yussuf et al reported that students who had morbidity increased the risk four times if the learning materials were not adequate and competition with their peers raised the risk to nine times as compared to others.[16] Sreeramareddy et al reported psychological morbidity prevalence about 20.9% .The commonly reported causative factors were ethnicity (Indian origin), medicine as family profession and preclinical years.. [13]

The observed similar psychological morbidity in male and female medical students in our study was inconsistent with previous findings which reported higher stress in female medical students [26-28]. In a study by Shaikh et al [29] stress level in male students came out to be higher as compared to female students. The reason behind this could possibly be due to the fact that in our study we collected data for a smaller sample. Consistent with our finding, one study has reported equal levels of stress in both the sexes. [24] The high morbidity level among the students living in hostels as compared to the day scholars is consistent with the findings of previous studies which have also reported the same [24,30]. It is also a possibility that students feel more stressed because they face homesickness as they are away from their localities.

Another variable which we took into account was the current status of parents of these children. We wanted to find out whether the students living with single parent feel more stressed as compared to those living with both of their parents. However, we observed that the students living with both of their parents were more stressed as compared to those having single parent. Miller & Surtees [31] used the GHQ-30, Dahlin et al [10] used a Higher Ed-

ucation Stress Inventory (HESI). In addition, Sreeramareddy et al [13] and Ko et al [30] used a cut off 4/5 for GHQ-12 and AD Yousaf, BA Issa used a cut off value of 3 for GHQ-12. While present study used a cut off value of 21 for GHQ-12. Contrary to previous studies that identified academic issues as more common sources of stress to medical students [13, 26, 30, 32-34] The current study observed that both academic (e.g., 'dissatisfaction with teaching methodology', and 'pre-exam tension') and psychosocial issues (e.g., 'experiencing high expectations from parents', 'mood swings' and 'headache') were common to the cohort. According to other studies, academic issues (i.e., 'being disturbed about competing with peers' and 'being worried about lack of special guidance from the college') were particularly of concern among students who had morbidity [13, 26, 30, 32-34]. In contrast with earlier findings, psychosocial issues ('feeling of being lonely', 'mood swings', 'feeling of being dumb', 'being sick', 'being worried about expectations of parents', 'difficulty in adjusting with roommates' and 'being satisfied with academic score') were particularly of concern among students who had morbidity. In our study, among sources of stress, the worry of high expectations from parents carried a great weightage corresponding to the results obtained by previous studies. This could possibly be due to the facts that parents want their children to share their burden, they want their children to stand on their feet or there could be another possible explanation that to have medical gradates in one's household is a societal glamour in itself. These could overburden the students with undue pressures that could possibly result in negative psychological consequences, thus explaining why 'expectations from parents' could be perceived as a highlighted source of stress. Similarly, a large number of students showed difficulty in adjusting with roommates which is manifested in a way that they feel lonely. Being away from home adds to the stress. A large number of students have reported that they are not satisfied with their academic score so they have a feeling of being dumb. Being sick and having mood swings are also among significant causes. Surprisingly though, our cohorts (and those who had morbidity) expressed no financial difficulties despite previous reports of association of financial concerns and debts with psychological morbidity.

Conclusion

We may conclude that psychological morbidity is noteworthy among medical students. Besides the psychosocial/personal issues, academic demands were additional sources of psychological problems in our cohort. It is the need of the hour to make interventions regarding social and psychological support and academic excellence to improve the quality of life in these medical students. The proposed interventions include stress relieving exercises, workshops to cope with academic stress, time management workshops for students in the start of medical school and mentorship program. With the help of promotion of prin-

ciples of mental health education, the effect of these sources can be reduced and psychological problems arising in the future can be avoided. These students would be able to offer their services more efficiently and effectively in their practical lives. Limitations:
Limitations of current study include single center study with a small sample size. Smaller sample size lead to unequal distribution of sociodemographic characteristics (gender, living with family or in hostel).

Conflict of interest:

We declare no conflict of interest. The study was not funded.

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