

Psychological Distress in Undergraduate Medical Students

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Abstract

Introduction: Stress is a condition that affects a person's physical and mental health. It is a response of the person to the environmental condition including interaction with it, which can pose threat to physical and mental wellbeing of the subject. Every person has certain endurance to cope up with the impending stress but when it increases beyond it, leads to psychological stress.

Objective: To assess psychological distress among medical students.

Method: In this study which we planned on 200 medical students 197 participated. These students were admitted recently to the medical college. Using Kessler Psychological Distress Scale (K10) mental wellbeing of the participants was assessed. Participants were informed about the questionnaire and consent was taken as such. Standardised questionnaire was distributed and participants were asked to choose the most adequate option provided.

Result: 46.7% i.e. 92 of 197 students (50 female and 42 males, p value 0.283) scored below 20 that show no psychological stress or healthy status. 26.9% i.e. 53 (25 female and 28 males, p value 0.6002), students scored 20-24 which shows mild distress and no significant difference between prevalence in both gender. 16.7% i.e. 33 (13 female and 20 males, p value 0.1729) scored 25-29, which shows moderate stress and without any significant difference and students which showed severe distress were 19(9.6%) (11 female and 8 male, p value 0.4747) with no significant difference and scored ≥ 30 on Kessler's score.

Conclusion: Approximately half of students were found of healthy mental status. 38 female students were found in mild to moderate distress as compared to 48 male students. 11 female and 8 male students were found in severe distress.

Keywords: Kessler psychological distress (K10), Stress in medical students.

Introduction

Graduate medical studies are considered one of the most stressful professional courses in India and worldwide.^{1,2} Own high expectations with same expectations of family and peer group, coupled with the medical training for accepting a role for the well-being of the patient, make a medical student prone to psychological distress which may become excessive.³ In the meantime medical students while

being busy in their studies spare less time for other co-curricular activities that leads them to stress. Even health becomes neglected subject for few of medical students. Low physical activity, deprived sleep and irregular teaching and training schedules do play a role in stress building environment. The accumulating stress is likely to have several deleterious effects on medical students including academic jeopardy and poor quality of life.⁴ Thus, high rates of psychological stress, undue anxiety and depression creeping in can result in poor quality of life and high rates of psychological morbidity. Various studies on medical students worldwide showed medical students develop symptoms of anxiety, depression and stress during the training period.⁵⁻¹⁰ Indian medical

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education system starts from a procedure of online or offline medical entrance examination that checks the academic performance of the student only on the basis of multiple choice type questions. While in western countries academic qualification along with personalised interviews and discussion sessions, co-curricular records, social and voluntary services and even research potential is weighed. While Family pressure and influence rather have vital role in choosing medical profession in India versus a certain degree of autonomy in western countries to choose profession¹¹ combining with the pressure to secure residency training based on a single academic examination only leads to surmounting stress.¹²

Depression, anxiety and stress are the most common forms of psychological distress among university students. For example, a study of 1617 Turkish university students found that 27.1% had depression, 47.1% had anxiety and 27% had stress.¹³ Consistently, a study of 506 undergraduate from four public universities in Malaysia estimated the prevalence of moderate depression, anxiety and stress to be 27.5%, 34% and 18.6%, respectively.¹⁴ Moreover, higher estimates of depression (60.8%) and anxiety (64.3%) were reported in a study that included 442 medical students from Fayoum University (Egypt).¹⁵ This leads to the study to assess psychological stress among newly admitted medical students as undergraduate training time is crucial for further career planning and thus proneness to psychological distress increases. The first definition according to Butler suggests that stress results from pressure, the greater the pressure the more likely that the recipient, whether a person or a load-bearing beam will succumb. The second definition focuses on stress as a response to noxious or aversive stimuli and finally, if the stress continues beyond the capacity of the body to respond, the system is damaged and may collapse. This is the stage of exhaustion.¹⁶ Findings of this study may further help in identifying and understanding the problems that they face in due course of their training and further career.

Objective

The primary objective of the study was to assess the prevalence of psychological distress among medical students. Secondary objective was to assess the relationship based on gender in the prevalence of psychological stress.

Material and Method

The study was planned on 200 newly admitted undergraduate medical students of Pt. B D Sharma University of Health Sciences, Rohtak in state of Haryana India. 197 students of both the female and male sexes participated in the study finally. The structured questionnaire was distributed among the participants of the study. After explaining the purpose of the study verbal consent was taken. Written consent on the questionnaire itself was obtained. Confidentiality of the participants was assured and no supervision was done during the data collection.

The questionnaire consisted of the Kessler Psychological Distress Scale (K10) sourced from Kessler R. Professor of Health Care Policy, Harvard Medical School, Boston, USA. This is a 10-item questionnaire intended to yield a global measure of distress based on questions about anxiety and depressive symptoms that a person has experienced in the most recent 4 week period. The use of a consumer self-report measure is a desirable method of assessment because it is a genuine attempt on the part of the clinician to collect information on the patient's current condition and to establish a productive dialogue. When completing the K10 the consumer should be provided with privacy. This is a questionnaire for patients to complete. It is a measure of psychological distress. The numbers attached to the patients 10 responses are added up and the total score is the score on the Kessler Psychological Distress Scale (K10). Scores will range from 10 to 50. People who score

- a) Under 20 are likely to be well
- b) Score 20-24 are likely to have a mild mental disorder
- c) Score 25-29 are likely to have moderate mental disorder
- d) Score 30 and over are likely to have a severe mental disorder

Data thus obtained was compiled on Microsoft excel and statistical tests using SPSS, (Statistical Package for Social Sciences) applied. Chi square test was applied using SPSS and p- value calculated.

Table 1: Showing prevalence of psychological stress according to Kessler's scale.

Sr. no.	Score(K10)	Distress level	Male(98)	Female(99)	Chi-square value	p-value
1	10-19	Healthy	42	50	1.152	0.283
2	20-24	Mild	28	25	0.275	0.6002
3	25-29	Moderate	20	13	1.857	0.1729
4	≥30	Severe	08	11	0.511	0.4747

Results

197 out of 200 students responded i.e. 98.5%. Of these 98 were male and 99 were female student majority of which fall in age of 18-20 years (94%). 46.7% i.e. 92 of 197 students (50 female and 42 male) scored below 20 that showed no psychological distress (p value 0.283). 26.9% i.e. 53 (25 female and 28 male) students scored 20-24 on scale, which showed mild psychological distress (chi square value 0.275 and p-value 0.6002) i.e. >0.001 shows no statistically significant difference between prevalence of distress in male and female students. 16.7% i.e. 33 (13 female and 20 male) scored 25-29, which showed moderate level of distress with no statistically significant difference between the two genders (p value- 0.1729) and students which showed severe distress were 19 in number (9.6%) out of which 11 were female and 8 male students, scored between 30-50 on Kessler's score no significant difference was found statistically (p value- 0.4747). It shows there is no significant statistical difference between prevalence of psychological stress based on gender in medical students.

Discussion

World Health Organization defines stress as "the reaction people may have when presented with demands and pressures that are not matched to their knowledge and abilities and which challenge their ability to cope." Undergraduate medical learning is challenging and stressful as it comes with a load of eventful series of work and assessment that if not cope-up with becomes stressors and according to Butler through various processes of stimulus, response to stimulus and dynamicity can lead to stress.¹⁶ Cope-up strategies play important role in stress management. In some studies done in Saudi Arabia, psychological distress was mainly

studied among medical students, where the prevalence of mental distress is anyways high owing to the stressful medical education environment.¹⁷⁻¹⁹ The present study was conducted on 197 medical students and it was found that more than half of the students (53.3%) were in various stages of psychological distress. It confirms the findings of the researchers from the middle-east countries about the prevalence of stress among medical students. Increased levels of psychological distress in the student health service sample were found associated with increased disability and reduced capacity to carry out normal activities in studies. In this study female students were found to be more affected with severe psychological distress and lesser number of female students as compared to male students were found to be in mild to moderate distress (**table 1**) but other studies conducted worldwide on medical students reported more of female students affected with psychological distress overall as compared to male students.¹⁹⁻²¹ Findings in the present study roughly corresponded to the study reported in Singapore (55.5%).²² Though other study reported in Malaysia²³ (46.2%) roughly corresponded with the present study but prevalence of psychological distress among medical student were reported significantly lower in studies done in United States (31.2%) and Spain (30.0%).²⁴⁻²⁵ Dessie et al²⁶ reported 21.6% prevalence of stress in Ethiopian medical students.

In the present study more female students were found in severe stress based on Kessler's scale but in contrast male students were found more stressed in mild to moderate category. This can be due to various reasons as the newly admitted students have to face difficulties that become stressors and lead to stress disorders in medical students. Medical courses are considered among most challenging worldwide. In traditional societies like mid-east²⁷ countries and somewhat in India also starting

very early from inception of idea of choosing career in medicine and getting enrolment in medical colleges and further on it becomes difficult for the students to cope up with the stressors and thus psychological distress creeps in after the compensatory mechanisms exhaust. Medical students and medical practitioners remain continuously face to face with the life and death situations and an environment of regular academic performance and clinical stress. Peer pressure and demands of family and self in regard of further advancement in career and academic pursuits leads many a students in psychological distress.

Conclusion

This study concluded that more than half of newly admitted medical students undergo stress of varying degrees. Both male and female students were affected and no correlation based on gender can be established. Though more number of female students found affected by severe stress, But in contrast more male students were found in mild to moderate stress.

Limitations: This study was carried out on a small sample of students who were admitted recently. Moreover students of senior professionals can be included in the study. Also students of other medical streams like nursing, dental and pharmacy can be included. Other criteria and stressor factors can be studied with bigger sample size.

Conflict of Interest: No conflict of interest involved.

Source of Funding- No funds raised.

References

- Guthrie EA, Black D, Shaw CM, Hamilton J, Creed FH, Tomenson B, *et al.* Embarking upon a medical career: Psychological morbidity in first year medical students. *Med Educ* 1995;29:337-41.
- Radcliffe C, Lester H. Perceived stress during undergraduate medical training: A qualitative study. *Med Educ* 2003;37:32-8.
- Sood R. Medical education in India. *Med Teach* 2008;30:585-91.
- Paro HB, Morales NM, Silva CH, Rezende CH, Pinto RM, Morales RR, *et al.* Health-related quality of life of medical students. *Med Educ* 2010;44:227-35.
- Schwenk TL, Davis L, Wimsatt LA. Depression, stigma, and suicidal ideation in medical students. *JAMA* 2010;304:1181-90.
- Aktekin M, Karaman T, Senol YY, Erdem S, Erengin H, Akaydin M, *et al.* Anxiety, depression and stressful life events among medical students: A prospective study in Antalya, Turkey. *Med Educ* 2001;35:12-7.
- Dahlin M, Joneborg N, Runeson B. Stress and depression among medical students: A cross-sectional study. *Med Educ* 2005;39:594-604.
- Tomoda A, Mori K, Kimura M, Takahashi T, Kitamura T. One-year prevalence and incidence of depression among first-year university students in Japan: A preliminary study. *Psychiatry Clin Neurosci* 2000;54:583-8.
- Aniebue PN, Onyema GO. Prevalence of depressive symptoms among Nigerian medical undergraduates. *Trop Doct* 2008;38:157-8.
- Baldassin S, Alves TC, de Andrade AG, Nogueira Martins LA. The characteristics of depressive symptoms in medical students during medical education and training: A cross-sectional study. *BMC Med Educ* 2008;8:60.
- Pruthi S, Pandey R, Singh S, Aggarwal A, Ramavat A, Goel A, *et al.* Why does an undergraduate student choose medicine as a career. *Natl Med J India* 2013;26:147-9.
- Sarkar S, Gupta R, Menon V. A systematic review of depression, anxiety, and stress among medical students in India. *J Mental Health Hum Behav* 2017;22:88-96.
- Bayram N, Bilgel N. The prevalence and socio-demographic correlations of depression, anxiety and stress among a group of university students. *Soc Psychiatry Psychiatr Epidemiol* 2008;43:667-72.
- Shamsuddin K, Fadzil F, Ismail WS, Shah SA, Omar K, Muhammad NA, *et al.* Correlates of depression, anxiety and stress among Malaysian university students. *Asian J Psychiatr* 2013;6:318-23.
- Yusoff MS, Abdul Rahim AF, Baba AA, Ismail SB, Mat Pa MN, Esa AR. Prevalence and associated factors of stress, anxiety and depression among medical Fayoum University students. *Alexandria*

- J Med 2017;53:77-84.
16. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2560943/pdf/occpaper00115-0007.pdf>
 17. Ibrahim N, Al-Kharboush D, El-Khatib L, Al-Habib A, Asali D. Prevalence and predictors of anxiety and depression among female medical students in King Abdulaziz University, Jeddah, Saudi Arabia. *Iran J Public Health* 2013;42:726-36.
 18. Alkot M. Depression among medical versus non-medical students in Umm Al-Qura University, Makkah Al-Mukaramah, Saudi Arabia. *Am J Psychiatry Neurosci* 2017;5:1.
 19. Stallman HM. Prevalence of psychological distress in university students – Implications for service delivery. *Aust Fam Physician* 2008;37:673-7.
 20. Yusoff MS, Abdul Rahim AF, Baba AA, Ismail SB, Mat Pa MN, Esa AR. Prevalence and associated factors of stress, anxiety and depression among medical Fayoum University students. *Alexandria J Med* 2017;53:77-84.
 21. Amr M, Amin TT, Saddichha S. Depression and anxiety among Saudi university students: Prevalence and correlates. *Arab J Psychiatry* 2013;24:1-7.
 22. Ko SM, Kua EH, Fones CS. Stress and the undergraduates. *Singapore Med J* 1999;40:627-30.
 23. Zaid ZA, Chan SC, Ho JJ. Emotional disorders among medical students in a Malaysian private medical school. *Singapore Med J* 2007;48:895-9.
 24. Sender R, Salamero M, Vallés A, Valdés M. Psychological variables for identifying susceptibility to mental disorders in medical students at the University of Barcelona. *Med Educ Online* 2004;9:4350.
 25. Firth J. Levels and sources of stress in medical students. *Br Med J (Clin Res Ed)* 1986;292:1177-80.
 26. Dessie Y, Ebrahim J, Awoke T. Mental distress among University Students in Ethiopia: A cross sectional survey. *Pan Afr Med J* 2013;15:95.
 27. Hakami R M. Prevalence of Psychological Distress Among Undergraduate Students at Jazan University: A Cross-Sectional Study. *Saudi Journal of Medicine & Medical Sciences* ;2018; 6:82-88.