

Gender Difference in Depression and Suicidal Ideation of medical students

MAARIJ YOUSAF¹, SEEMA DAUD², MIAN M. SHAFIQUE³

ABSTRACT

Aim: To assess the gender difference in frequency of depression and suicidal ideation in students in the initial years of medical study

Study design: Descriptive cross-sectional study

Place and duration of study: Lahore Medical & Dental College (LMDC) Lahore, in July 2016.

Methods: Six items Kutcher Adolescent Depression Scale was used to screen second year medical students for depression and suicidal ideation. Depression was established if total score of KADS-6 was either 6 or more. Data was entered, cleaned and analysed in SPSS version 22. Association of gender of participants with depression and suicidal ideation was ascertained by applying chi square test, with $p \leq 0.05$ as cut off point for statistical significance.

Results: Among 114 study participants, 58(51%) were male, 56 (49%) were female and 72(63%) were depressed. Among depressed students, 30(52%) were male and 42(75%) were female ($p= 0.01$). Symptoms like perceived loss of fun in life was felt by 67% males and 71% females ($p 0.02$) and nervousness and tension were experienced by 62% males and 89% females ($p < 0.01$). Suicidal thoughts were present in higher number of female students (32%) compared with males (17%), though this difference was not statistically significant.

Conclusion: Multi-center studies are required to establish the gender differential in depression among female and male medical students that was highlighted in the present study. Interventions like increased individual counseling for students, faculty education, and identification and management of depressed students need to be created in medical schools.

Keywords: Depression, suicidal ideation, medical students, male, female

INTRODUCTION

Depression is a mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt, disturbed sleep or appetite, substantially impairing a person's ability to function at work or cope with daily life. In its most severe state, depression can lead to suicide¹.

The presence of depression is an important indicator to assess the mental health of a society. The greater the stress the more are the chances to develop depression. It is generally believed that the level of stress which a medical student faces is much higher as compared to students getting other types of educations.² The prevalence of depression and anxiety in the overall population of Pakistan is 34%.³ It is documented worldwide that a very high percentage of medical students develop depression ranging from 10% to 64% depending on area and culture⁵⁻⁹.

Gender difference in depression amongst the medical students is quite variable. In Saudi Arabia the overall prevalence of anxiety and depression in the females is much higher (61%) than the males (44%), having almost same ratio during all years of medical training.⁹ In contrast, the male students in Turkey had significantly high levels of depression as compared to females especially in the second year of medical graduation.¹⁰ Results of a study conducted in Cambridge, United Kingdom, showed that only a small proportion of medical students have depression. It also negates the view that there exists a difference in prevalence of depression between men and women¹¹.

Depression in adolescents and young adults is gaining a lot of attention. This is because depression is common in age group 15-19 years,¹² with its victims being more females than males.¹³ The most serious and important outcome of depression in this age group is suicidal ideation^{14,15}.

The main objective of our study was to assess the gender difference in frequency of depression and suicidal ideation in students in the initial years of medical study.

¹Lahore Medical & Dental College, Lahore

²Head, Department of Community Medicine, Director Medical Education, Lahore Medical & Dental College, University of Health Sciences, Lahore

³Head, Department of Ophthalmology, Lahore Medical & Dental College, University of Health Sciences, Lahore,

Correspondence to Dr. Maarij Yousaf, Email: maarij786@hotmail.com Cell: 00923004338187

MATERIAL AND METHODS

A descriptive cross sectional study was conducted in July 2016, among second year medical students at Lahore Medical & Dental College (LMDC), Lahore. The study participants were screened for depression by using six items Kutcher Adolescent Depression Scale (KADS-6). Depressive symptoms assessed in KADS-6 are depicted below:

1. Low mood, Sadness, Apathy (*Item 1*);
2. Low self-esteem/worthlessness (*Item 2*);
3. Tiredness, fatigue, de-motivation (*Item 3*);
4. Lack of pleasure and fun in life (*Item 4*);
5. Panic, worry, nervousness, tension, anxiousness (*Item 5*);
6. Thoughts, plans or actions about suicide or self-harm (*Item 6*);

Depression was established if total score of KADS-6 was either 6 or more.

Data was entered, cleaned and analysed in SPSS version 22 and was presented in the form of tables and graph. Association of gender of participants with depression and suicidal ideation was ascertained by applying chi square test, with $p \leq 0.05$ as cut off point for statistical significance.

RESULTS

Out of 142 medical students in second year MBBS, 114 participated in the study (response rate= 80.3%). Among the study participants, 58(51%) were male and 56 (49%) were female. Depression was present in 72(63%) of study participants. Table 1 shows the distribution of male and female students according to depression. Depression was present in 30(52%) of male and 42(75%) of female students. This difference was statistically significant ($p= 0.01$).

Table 2 presents the distribution of male and female students according to suicidal ideation. Suicidal thoughts were present in higher number of female students (32%) compared with males (17%), however his difference was not statistically significant ($p= 0.07$).

Figure 1 depicts the difference in depressive symptoms in students, which were comparatively higher in females than males. Low mood, sadness and feeling down were experienced by 72% male and 85% female students ($p 0.08$). Worthlessness and hopelessness were felt by 45% males and 63% females ($p 0.23$). Feelings of tiredness and fatigue were encountered by 78% males and 82% females ($p 0.68$). The statistically significant difference in males and females were seen in perceptions about loss of fun in life which was felt by 67% males and 71% females ($p 0.02$) and suffering from nervousness and tension experienced by 62% males and 89% females ($p < 0.01$).

Table 1: Depression in medical students according to gender (n=114)

Gender	Depression	
	Absent	Present
Male(58)	28(48.3%)	30(51.7%)
Female (56)	14(25%)	42(75%)

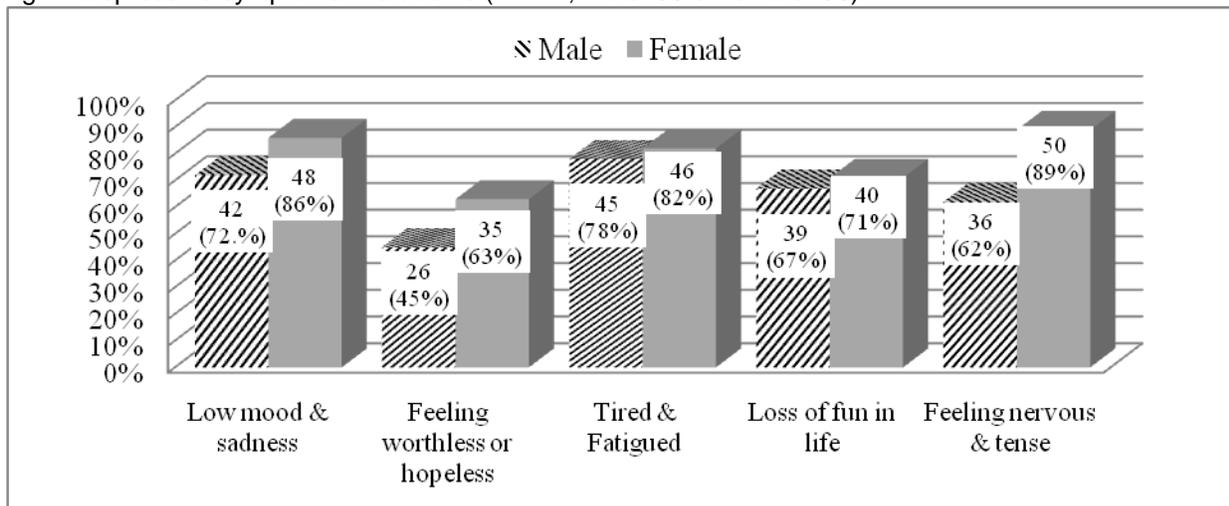
Chi Square (χ^2) 6.634 Pvalue=0.01

Table 2: Suicidal thoughts in medical students according to gender (n=114)

Gender	Suicidal thoughts	
	Absent	Present
Male(58)	48(82.8%)	10(17.2%)
Female (56)	38(67.9%)	18(32.1%)

Chi Square (χ^2) 3.414 Pvalue=0.07

Fig. 1: Depressive symptoms in students (n=114; Male=58 & Female=56)



DISCUSSION

The main purpose of our study was to establish gender difference in depression amongst the male and female students. In the present study, significantly higher number of females screened positive for depression than males ($p=0.01$). This finding was consistent with majority of researches in different parts of world. Bazmi (2007), reporting from Saudi Arabia, also found higher prevalence of depression in female medical students (61%) compared with the males (44%)⁹. In Canada based studies conducted by Dyrbe et. al (2006) and Afifi et al. (2005) reported higher preponderance of depression in adolescent females compared with their male counterparts^{16,17}, Greater rate of depression in female medical students was also reported from studies conducted in USA^{18,19}, Sweden²⁰, Brazil¹⁸, Hawai¹⁵, Iran²¹, India²² and Pakistan²³.

There could be several reasons why there is a greater number of female students experiencing depression than males. There is not much agreement among the researchers for precise causes of more depression in females except female hormonal changes.²⁴ However there are many social factors already studied in Pakistan which are thought to lead to more depression in female adolescents^{25,26}. In our society female medical students are absolutely dependent on their families. Majority of these female students do not have independence to go for recreational activities. If they ever find time it is only in the company of their family. Instead they are always busy in studies and exams. This makes them tired mentally and physically. And if there is any reason of failure in exams it acts as a major factor for development of depression. On the other hand, males, although economically dependent on their parents, they have full liberty for recreational activities. Hence, they hardly care of the result and find easy ways to get rid of any form of depression with much more ease. In addition poor social support may not only result in increases in depressive symptoms, but it might also result from feeling depressed²⁷. Sajjadi et al in a similar study in Iran has highlighted some more factors contributing to depression like poor inter-parental relationship, poor adolescent-parent relationship, low socio-economic status (SES), low level of parental education, and poor academic performance²⁸.

Considering suicide ideation the results of our study are quite alarming. Suicidal thoughts were present in higher number of female students (32%) compared with males (17%), however this difference was not statistically significant ($p=0.07$). Depression

in adolescents is a major risk factor for suicide, the second-to-third leading cause of death in this age group, with more than half of adolescent suicide victims reported to have a depressive disorder at time of death. Depression also leads to serious social and educational impairments¹². Higher reports of suicidal ideation in female medical students was reported from USA^{29,30}, Iran³¹ and Pakistan³².

The main limitation of the study was that it was confined to one class of MBBS in a private sector medical college of Lahore.

CONCLUSION

In the present study, higher number of female medical students was screened positive for depression and suicidal ideation compared with male students. Further multi-center studies are required to establish this gender differential. Interventions like increased individual counseling for students, faculty education, and specialized confidential identification and management of depressed students need to be created in medical schools.

REFERENCES

1. Depression: A Global Crisis [Brochure]. Occoquan, USA. World Federation for Mental Health. 2012.
2. Rodrigo C, Welgama S, Gurusinghe J, Wijeratne T, Jayananda G, Rajapakse S. Symptoms of anxiety and depression in adolescent students; a perspective from Sri Lanka. *Child Adolesc Psychiatry Ment Health*. 2010; 4:10.
3. Prasla M. Adolescence Depression in Pakistan: A New Horizon for Research. *J Pak Med Stud*. 2012; 2(4): 160-1.
4. Mirza I, Jenkins R. Risk factors, prevalence, and treatment of anxiety and depressive disorders in Pakistan: a systematic review. *BMJ*. 2004; 328(7443):794.
5. Rosal MC, Ockene IS, Ockene JK, Barrett SV, Ma Y, Hebert JR. A longitudinal study of students' depression at one medical school. *Acad Med*. 1997; 72(6):542-6.
6. Vaz RF, Mbajjorgu EF, Acuda SW. A preliminary study of stress levels among first year medical students at the University of Zimbabwe. *Cent Afr J Med*. 1998 Sep; 44(9):214-9.
7. Ko SM, Kua EH, Fones CS. Stress and the undergraduates. *Singapore Med J*. 1999 Oct; 40(10):627-30.
8. Givens GL, Tjia J. Depressed medical students' use of mental health services and barriers to use. *Acad Med*. 2002 Sep; 77(9):918-21.
9. Bazmilnam SN. Anxiety and Depression among Students of a Medical College in Saudi Arabia. *Int J Health Sci (Qassim)*. 2007 July; 1(2): 295-300.
10. Karaoglu N, Şeker M. Anxiety and Depression in Medical Students Related to Desire for and

- Expectations from a Medical Career. *West Indian Med J.* 2010;59(2):196-202.
11. Quince TA, Wood DF, Parker RA, Benson J. Prevalence and persistence of depression among undergraduate medical students: a longitudinal study at one UK medical school. *BMJ Open.* 2012 Aug; 2(4): e001519.
 12. Thapar A, Collishaw S, Pine DS, Thapar AK. Depression in adolescence. *Lancet.* 2012;379(9820): 1056-67.
 13. McFarlane S, Younger N, Francis D, Gordon-Strachan G, Wilks R. Risk behaviours and adolescent depression in Jamaica. *Int J Adolesc Youth.* 2015; 19(4): 458-67.
 14. Consoli A, Peyre H, Speranza M, Hassler C, Falissard B, Touchette E, et al. Suicidal behaviors in depressed adolescents: role of perceived relationships in the family. *Child Adolesc Psychiatry Ment Health.* 2013;7(8).
 15. Goebert D, Thompson D, Takeshita J, Beach C, Bryson P, Ephgrave K, et al. Depressive symptoms in medical students and residents: A multischool study. *Acad Med.* 2009; 84:236-41.
 16. Dyrbye LN, Thomas MR, Shanafelt TD. Systematic review of depression, anxiety, and other indicators of psychological distress among US and Canadian medical students. *Acad Med.* 2006;81(4):354-73.
 17. Affifi TO, Enns MW, Cox BJ, Martens PJ. Investigating Health Correlates of Adolescent Depression in Canada. *Can J Public Health.* 2005 November - December; 96(2):427-31.
 18. Hardeman RR, Przedworkski JM, Burke SE, Burgess DJ, Phela SM, Dovidio JF, et al. Mental well being in first year medical students: A comparison by race and gender. *J Racial Ethn Health Disparities.* 2015; 2: 403-13.
 19. Rosenthal JM, Okie S. White coat, mood indigo—depression in medical school. *N Engl J Med.* 2005;353(11):1085-88.
 20. Dahlin M, Joneborg N, Runeson B. Stress and depression among medical students: a cross-sectional study. *Med Educ.* 2005;39(6):594-604.
 21. Jafari N, Loghmani A, Montazeri A. Mental health of Medical Students in Different Levels of Training. *Int J Prev Med.* 2012 Mar; 3(1): S107-12.
 22. Iqbal S, Gupta S, Venkatarao E. Stress, anxiety & depression among medical undergraduate students & their socio-demographic correlates. *Indian J Med Res.* 2015 March; 141(3):354-7.
 23. Alvi T, Assad F, Ramzan M, Khan FA. Depression, anxiety and their associated factors among medical students. *J Coll Physicians Surg Pak.* 2010 Feb; 20(2):122-6.
 24. Lowe GA, Gibson RC. Depression in adolescence: new developments. *West Indian Med J.* 2005;54(6):387-91.
 25. Afzal S, Rana TF, Mehmood S. Determinants of depression in female adolescents and youth. *Professional Med J.* 2008;15(1):137-42.
 26. Ali TS, Azam P, Waheed H, Memon AA. Understanding of puberty and health related problems among female adolescents in Karachi, Pakistan. *J Pak Med Assoc.* 2006;56(2):68-72.
 27. Galambos NL, Leadbeater BJ, Barker ET. Gender differences in and risk factors for depression in adolescence: A 4-year longitudinal study. *Int J Behav Dev.* 2004; 28(1): 16–25.
 28. Sajjadi H, Kamal SHM, Rafiey H, Vameghi M, Forouzan AS, Rezaei M. A Systematic Review of the Prevalence and Risk Factors of Depression among Iranian Adolescents. *Global J Health Science.* 2013 Jan; 5(3):16-27.
 29. Schwenk TS, Davis L, Wimsatt LA. Depression, Stigma, and Suicidal Ideation in Medical Students. *JAMA.* 2010;304(11):1181-90.
 30. Thompson D, Goebert D, Takeshita J. A program for reducing depressive symptoms and suicidal ideation in medical students. *Acad Med.* 2010 Oct;85(10):1635-9.
 31. Ahmadi J, Ahmadi N, Soltani F, Bayat F. Gender differences in depression scores of Iranian and German medical students. *Iran J Psychiatry Behav Sci.* 2014; 8: 70-3.
 32. Osama M, Islam MY, Hussain SA, Masroor SMZ, Burney MU, Masood MA, Menezes R, Rehman R. Suicidal ideation among medical students of Pakistan: A cross-sectional study. *J Forensic Leg Med.* 2014;27: 65-68.