

Prevalence of Study Related Anxiety among Medical Students: a Study from a Medical College in Central Nepal

*Praveen Bhattarai¹, Devavrat Joshi², Bhupendra Singh Gurung³

¹Consultant Psychiatrist, Mental Hospital, Lagankhel

²Associate Professor (Psychiatry), NAMS, Mental Hospital, Lagankhel

³Clinical Psychologist, Mental Hospital, Lagankhel

*Corresponding Author: Dr. Praveen Bhattarai, Kathmandu, Nepal; E-mail: drpraveen1@hotmail.com



ABSTRACT

Background: Medical education can lead to anxiety and depression that may cause negative academic and professional consequences on medical students. The objective of this study was to find out the prevalence of study related anxiety, its severity and frequency of different symptoms related to anxiety among medical students.

Results: Study-related anxiety was found in 73.33% of students. Anxiety was more common amongst final year medical students (83.33%) followed by 1st/2nd year students (76.67%). Prevalence of anxiety was found to be less among 4th-year medical students (63.33%). The majority of the students experienced a mild to moderate level of anxiety. i.e.44.31 % and 36.37 % respectively. The most common symptoms of study related anxiety were recurrent fearful thoughts about studies, constant tension about studies and panic feeling about exam in varying degree of severity.

Conclusion: There is a high prevalence of study related anxiety among medical students in the current study. Early identification and timely intervention of study related anxiety symptoms in medical students will prevent mental distress and negative effect on their academic pursuits.

Key Words: Prevalence, Medical Students, Study Related Anxiety

Access this article Online		Article Info.
Quick Response Code	Website:	How to cite this article in Vancouver Style?
 	www.jkahs.org.np	Bhattarai P, Joshi D, Gurung B. Prevalence of study related anxiety among medical students: a study from a medical college in central Nepal. Journal of Karnali Academy of Health Sciences 2020;3(2): 22-27
	DOI: https://doi.org/10.3126/jkahs.v3i2.29644	Received : 12 March 2020 Accepted : 26 May 2020 Published Online : 27 May 2020
		Conflict of Interest : None Source of Support : None

INTRODUCTION

Teaching and learning in medical field has always been regarded as highly stressful which can have negative impact on physical as well as psychological development and wellbeing of medical students. This stress usually leads to poor academic performance and possibly different types of adverse psychological attitude and behavior among students later in their life. Academic stressors among medical students include the extensive course load, long duration of course, academic performance and evaluation i.e. examination and continuous assessment.¹

Excessive worries, being depressed, increased nervousness and overthinking are diverse symptoms of exam anxiety based on one's experience, assessment and outcome.² Anxiety and depression associated with medical education can cause marked disturbance in academic and professional career of medical students.¹ A crucial period in medical training that act as a significant stressor is the shift from preclinical to clinical posting.³ Various studies have been found to reveal increased prevalence of anxiety and depression in medical students.^{1,4,5}

A systematic review carried out in 2014 across eleven studies found a prevalence of anxiety ranging between 7.7% and 65.5% among medical students.⁶ Based on another meta-analysis, prevalence of anxiety among medical students was found to be 33.8%, which was substantially higher as compared to general population.⁷ Anxiety can cause academic decline, increased dropout rates in medical school and also hampers professional pursuits.⁸ Finally, this could compromise quality of patient care as shown by studies where anxious medical students and doctors were found to have less empathy and enthusiasm while handling patients and they tend to show poor work efficacy.^{8,9}

There has not been any study highlighting prevalence of study related anxiety among medical students in Nepal and this study aims to bridge this gap, so that timely assistance and intervention could be provided. The objective of this study was to see the prevalence of study related anxiety, its intensity and frequency and severity of different study related anxiety symptoms among medical students.

MATERIALS AND METHODS

This cross sectional study was conducted in MBBS students of KIST Medical College in August 2017. A total of 120 students were randomly selected, 30 each from Basic science i.e., first professional level (1st/2nd year), 3rd year, 4th year and final (5th) year i.e., final professional level irrespective of their gender. A self-administered questionnaire was given to students, willing to participate in this study. This questionnaire was developed by Ishtiaq et al¹⁰ to screen for presence or absence of symptoms of anxiety related to study with no cut-off values mentioned for diagnosing a specific condition.

A total of ten questions (Table1) relating to different symptoms regarding studies and anxiety levels were asked from the students. Students have to grade their level of anxiety from zero to four in ascending order. Grade 0 represents no anxiety, grade 1 represents mild, grade 2 for moderate, grade 3 shows severe anxiety and grade 4 represents depression. Student participation was voluntary and they were explained about nature of survey and to ensure anonymity, respondents were asked not to put their personal information except for year of education. This survey was carried out during the mid-session when students did not have any major exam scheduled and are enjoying sports festival. Permission for conducting research and ethical approval was obtained from KIST Medical College. All data were recorded carefully and statistical analysis was carried out using Epi info version 6.0.

RESULTS

A total of 120 MBBS students from 1st year to final year have completed the questionnaire and all were included in the study. Study related anxiety was found in 73.33% (n=88) students, whereas about 21.67% (n=26) have no study related anxiety or depression and only 5% (n=6) shows study related depression (fig. 1). Similarly, figure 2 shows that 76.67% (n=23) have study related anxiety during 1st professional level (1st/2nd year) which dropped to 70% (n=21) and 63.33% (n=19) during 3rd and 4th year respectively, but again rise sharply up to about 83.33% among final year students.

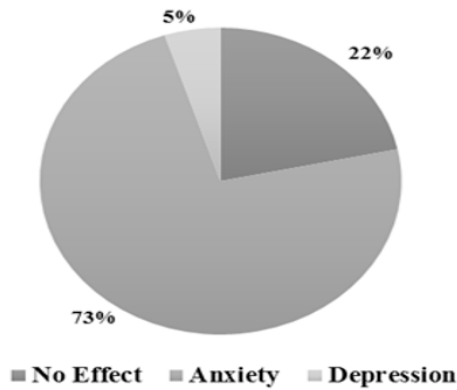


Fig. 1: Prevalence of Study Related Anxiety and Depression

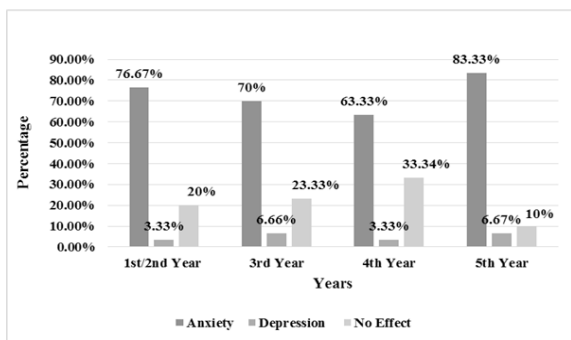


Fig. 2: Prevalence of Anxiety and Depression among Students of 1st to 5th Year

Similarly, about 3.33% (n=1) students have depression during 1st /2nd year which shows slight fluctuation during subsequent years and about 6.66% students were found depressed in final year MBBS. About 20% students have no study related anxiety or depression during first professional level, which gradually increases in 3rd year (23.33%) and students feel most relaxed during 4th year (33.33%) but this number sharply dropped during final year and only 10% students in final year have no effect of studies.

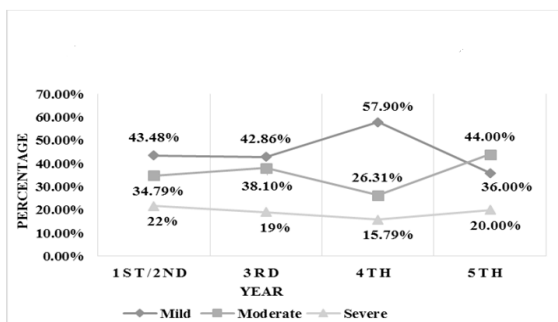


Fig. 3: Prevalence of Intensity of Anxiety among Students of 1st to 5th Year

Fig. 3 showed the distribution of intensity of anxiety i.e., mild, moderate or severe among students who

gave history of anxiety from 1st professional level to final professional level. Among them, in 1st/2nd year, majority of students suffered from mild or moderate degree of anxiety i.e., 43.47% and 34.78% respectively and this distribution remains almost same during 3rd year but in 4th year, majority of students (57.89%) have mild degree of anxiety and only 15.78% gave history of severe anxiety. In final year, majority of students (44%) again develop moderate degree of anxiety followed by mild degree among 36% students.

Overall, in all class majority of students (44.31%) have mild anxiety followed by moderate degree in 36.37% and only 19.32% student suffer from severe anxiety. Prevalence of anxiety is higher in final year students (28.40%). Regarding different symptoms of anxiety asked in questionnaire (Table 1), most of the students have moderate (n=41, 34.16%) to mild (n=38, 31.66%) severity of recurrent fearful thoughts about studies. About 40% (n=48) students have moderate severity of constant tension about their studies. Similarly, about half of the students have mild (n=33, 27.5 %) to moderate (n=30, 25%) severity of panic feelings about their exam.

Similarly, more than half of the students have moderate or mild severity of butterfly feeling in stomach i.e., (n=37, 30.83% and n=35, 29.16% respectively). About 36.66% (n=44) were having mild and 27.5% (n=33) were having moderate fear of being failed in examinations. Only 18.33% (n=22) and 20% (n=24) students do not think that they are constantly at war with themselves after entering medical college and only 20% (n=24) do not have feeling that they are wasting their time in socializing with colleagues. Majority of the students (average about 80%) are having mild to severe degree of those feelings which leads to anxiety.

Table 1: Prevalence of different anxiety symptoms among students: a questionnaire survey of 120 students

SN	Questions	Grade	Total n=120
1	Do you have recurrent fearful thoughts about studies which you want to avoid but cannot do so?	0	18 (15%)
		1	38 (31.66%)
		2	41 (34.16%)
		3	20 (16.66%)
		4	3 (2.5%)

2	Are you constantly tensed, worried or on the edge about your studies?	0	13 (10.83%)
		1	40 (33.33%)
		2	48 (40%)
		3	13 (10.83%)
		4	6 (5%)
3	Do you have fear of losing control or going crazy when you can't understand something written in your books?	0	41 (34.16%)
		1	36 (30%)
		2	25 (20.83%)
		3	15 (12.5%)
		4	3 (2.5%)
4	Have you started having difficulties in keeping up with your social relation at college since you do not find time away from books?	0	43 (35.83%)
		1	43 (35.83%)
		2	22 (18.33%)
		3	10 (8.33%)
		4	2 (1.67%)
5	Do you feel like danger and catastrophe are around every corner during exams?	0	28 (23.33%)
		1	41 (34.16%)
		2	25 (20.83%)
		3	17 (14.16%)
		4	9 (7.5%)
6	Do you experience sudden, unexpected attacks of heart pounding/panic when you think about tests and exams?	0	30 (25%)
		1	33 (27.5%)
		2	30 (25%)
		3	23 (19.16%)
		4	4 (3.33%)
7	Do you get sort of frightened feeling like "butterflies" in the stomach whenever a test is announced?	0	32 (26.67%)
		1	35 (29.16%)
		2	37 (30.83%)
		3	12 (10%)
		4	4 (3.33%)
8	Do worrying thoughts go through your mind all the time that you would fail?	0	9 (7.5%)
		1	44 (36.66%)
		2	33 (27.5%)
		3	22 (18.33%)
		4	12 (10%)
9	Do you think you are continuously at war with yourself after entering medical college?	0	22 (18.33%)
		1	32 (26.67%)
		2	29 (24.16%)
		3	28 (23.33%)
		4	9 (7.5%)
10	Do you feel that you are wasting time when you are doing normal activities and that you should be rather studying?	0	24 (20%)
		1	48 (40%)
		2	30 (25%)
		3	10 (8.33%)
		4	8 (6.67%)

DISCUSSION

Medical students usually come across numerous stressors and emotional challenges during their transition from a young student to a mature competent physician.³ Anxiety is experienced not by all but a good score of medical students as an emotional reaction and excessive fear interferes with academic performance.

Teaching and learning activities in medical school may negatively impact the mental capacities of medical students and make them more susceptible to anxiety and depression as compared to their non-medical peers.¹¹ In a study by Acosta et al., 37% of medical professional have the symptoms of depression or anxiety.¹² A review of 40 papers done by Dyrbye and colleagues in medical students of US and Canada revealed increased prevalence of anxiety and depression, with higher level of overall psychological distress by the later years of training.⁸ Various studies from Malaysia medical university¹³, Singapore¹⁴ and University of Mississippi School of medicine¹⁵ showed anxiety and emotional disorders in 41.9%, 57% and 23% of medical students, respectively. In a study from Pakistan, Rizvi et al reported that more than half of the medical students suffered anxiety symptoms like anorexia, insomnia, fatigue and nausea due to long working hours and tension of completing piled up course.⁵ Another study done by Khan et al⁴ and Inam et al¹ revealed that about 70% and 60% of medical students suffer from anxiety and depression in their studies. Study related anxiety was found in 72.2 % of students in a study by Ishtiaq et al.¹⁰ Our study shows prevalence of study related anxiety to be about 73.33% which corroborates with findings from these studies. In addition, various studies have shown that anxiety and emotional disturbances are more prevalent among medical students in comparison to non-medical university students.^{14,16,17,18.}

In a study conducted by Singh et al, it was reported that symptoms of depression are remarkably high in the students of first (59.3%) and second year (65.6%) in comparison to third (34.4%) and fourth year (37.2%).¹⁹ Similarly, Aktekin et al showed that anxiety and depression was increased significantly among first and second year medical students.²⁰ Furthermore, studies done by Inam¹ and Rab et al.²¹ revealed that anxiety and depression was

more prevalent among 1st and 2nd year medical students, attributed to new learning environment as compared to students that had already passed their first professional exam i.e. 3rd and 4th year students. Contrary to these findings, our study shows that 4th year students have less prevalence of study related anxiety and 5th year and first professional level (i.e. 1st/2nd year) students have highest prevalence among all students. This could be due to more study pressure during first professional level as students are encountering completely different subjects, curriculum, teaching methodologies and institutional atmosphere. The most probable reason for increase in prevalence of anxiety in final year is the lengthy course, clinical attachments, busy schedules and fear of forthcoming exam, which is a gateway to becoming practicing physician and challenges in practical life. Our study revealed that students from 4th year were found more relaxed among students of all classes.

The availability of data relating to causes of anxiety and distress among medical students and its impact on their academic performance and professional efficacy is limited.⁸ Studies show that medical students in their first professional level, having negative past life event and residing in university dormitories were found to be more anxious and depressed.²¹

The most common symptoms of anxiety found among medical students were tachycardia panic attack, disturbance in sleep, palpitation, anorexia, various emotional and behavioral disturbances and social dysfunction as shown by different studies.^{3,8,10,13,20} In our study, majority of students have recurrent fearful thoughts, constant worry and tension about study, symptoms of heart pounding and panic anxiety, frightened feeling of butterflies in stomach and feeling of catastrophe all around them especially before or during exam days. More than 50% of students also feel difficulty in keeping up social relations resulting from study pressure. Liu et al.²² revealed that factors such as introverted personality, frequent conflict with classmates, exam pressure and poor general health condition were independently associated with anxiety symptoms.

Study done by Al Nagar¹⁷ showed that majority of students with anxiety have symptoms of phobias

like speaking in front of crowd, difficulty in eating, phobia from snake etc. A study suggests that after beginning medical school, mental health of medical students worsens and remains poor throughout the training.⁴ One study also shows that anxiety and depression may have adverse influence on academic performance of students that may lead to increased incidence of substance abuse and negative effect on their personality.¹⁸ Hence, studies from different parts of world concluded that prevalence of anxiety, stress and depression is quite high among medical students, though medical education was assumed and prioritized by society for personal growth, prosperity and contentment, despite challenges to thrive in this profession.

This study was conducted in only one medical college and sample were randomly selected and those students with pre-existing anxiety disorder were not excluded from the study that leads to the selection bias and hence there is a limited generalizability; hence, further research should be warranted.

CONCLUSION

Current study shows a higher prevalence of study related anxiety among medical students and this may pose negative effect on their academic pursuits. Early identification and timely intervention can prevent mental distress. Hence, there is a need for large, prospective, multi center studies to find out magnitude of anxiety, depression and psychological distress among medical students and to explore association with medical education and related training.

Acknowledgements: We are thankful to all the medical students and hospital management committee of KIST medical college for their valuable support and time during data collection and allowing us to conduct research study.

REFERENCES

1. Inam SNB, Saqib A, Alam E. Prevalence of anxiety and depression among medical students of private university. *J Pak Med Assoc.* 2003; 53: 44–7. [[PubMed](#)] [[Google Scholar](#)]
2. Hashmat S, Hashmat M, Amanullah F, Aziz S. Factors causing exam anxiety in medical

- students. *J Pak Med Assoc.* 2008; 58:167–70. [[PubMed](#)] [[Google Scholar](#)]
3. Ahmed I, Banu H, Al-Fageer R, et al. (2009) Cognitive emotions: depression and anxiety in medical students and staff. *J Critical Care* 24(3): doi: 10.1016/j.jcrc. 06.003[[PubMed](#)] [[DOI](#)]
 4. Khan MS, Mahmood S, Badshah A, Ali SU, Jamal Y. Prevalence of depression, anxiety and their associated factors among medical students in Karachi, Pakistan. *J Pak Med Assoc.* 2006; 56:583–6. [[PubMed](#)] [[Google Scholar](#)]
 5. Rizvi AH, Awaiz M, Ghanghro Z, Jafferi MA, Aziz S. Preexamination stress in second year medical students in a government college. *J Ayub Med Coll Abbottabad.* 2010; 22(2):152–55. [[PubMed](#)] [[Google Scholar](#)]
 6. Hope V, Henderson M. Medical student depression, anxiety and distress outside North America: a systematic review. *Med Educ.* 2014;48(10):963–979.[[PubMed](#)] [[DOI](#)].
 7. Quek TTC, Tam WWS, Tran BX, Zhang M, Zhang Z, Ho CSH, et al. The global prevalence of anxiety among medical students: a meta-analysis. *Int J Environ Res Public Health.* 2019 Aug; 16(15): 2735. Published online 2019 Jul 31. DOI: 10.3390/ijerph16152735. [[PubMed](#)] [[DOI](#)]
 8. Dyrbye LN, Thomas MR, Shanafelt TD. Systematic review of depression, anxiety, and other indicators of psychological distress among U.S. and Canadian medical students. *Acad Med.* 2006; 81(4):354–373. doi: 10.1097/00001888-200604000-00009. [[DOI](#)] [[PubMed](#)]
 9. Khuwaja AK, Qureshi R, Azam SI: Prevalence and factors associated with anxiety and depression among family practitioners in Karachi, Pakistan. *J Pak Med Assoc.* 2004, 54: 45-49.[[PubMed](#)] [[Google Scholar](#)]
 10. Ishtiaq S, Khan M, Shaheen A, Mansoor S. Prevalence of study related anxiety among female medical students. *ISRA Medical Journal.* 2013; 5(2):110-14. [[Google Scholar](#)]
 11. Rosenthal JM, Okie S. White coat, mood indigo-
-depression in medical school. *N Engl J Med.* 2005;353(11):1085–8.[[PubMed](#)] [[Google Scholar](#)]
 12. Acosta J, Chavda A, Verma D, Marker M, Anzisi L. Prevalence of anxiety and depression among emergency department staff. *New York Medical Journal* 2007; 21(3): 321-7. [[Google Scholar](#)]
 13. Sidik SM, Rampal L, Kaneson N. Prevalence of emotional disorders among medical students in Malaysian University. *Asia Pacific Family Medicine.* 2003; 2: 213-17. [[Google Scholar](#)][[DOI](#)]
 14. Ko SM, Kua EH, Fones CS. Stress and the undergraduates. *Singapore Med J.* 1999; 40: 627–30. [[PubMed](#)]
 15. Mosley TH, Jr., Perrin SG, Neral SM, Dubbert PM, Grothues CA, Pinto BM. Stress, coping, and well-being among third-year medical students. *Academic medicine: journal of the Association of American Medical Colleges.* 1994; 69(9): 765-7. [[PubMed](#)]
 16. Dunn LB, Iglewicz A, Moutier C. A conceptual model of medical student well-being: promoting resilience and Preventing Burnout. *Academic Psychiatry.* 2008; 32:44-53. [[PubMed](#)]
 17. Al-Naggar RA. Prevalence and associated factors of phobia and social anxiety among university students. *ASEAN Journal of Psychiatry.* 2012; 13(2): 263-6. [[Google Scholar](#)]
 18. Amir M, Gillany AH. Self –reported depression and anxiety by students at an Egyptian Medical School. *Journal of Pakistan Psychiatric Society.* 2010; 7(2): 71. [[Google Scholar](#)]
 19. Singh A, Lal A, Singh S. Prevalence of depression among medical students of a private medical college in India. *Online J Health Allied Sci.* 2010; 9:8. [[Google Scholar](#)]
 20. Aktekin M, Karaman T, Senol YY, Erdem S, Erengin H, Akaydin M. Anxiety, depression and stressful life events among medical students: a prospective study in Antalya, Turkey. *Med Educ.* 2001; 35:12–7. [[PubMed](#)] [[Google Scholar](#)]
 21. Rab F, Mamdou R, Nasir S. Rates of depression and anxiety among female medical students in Pakistan. *La Revue de Sante’ de la Mediterranee’ orientale.* 2008; 14(1): 126-33. [[PubMed](#)]
 22. Liu XC, Oda S, Peng X, Asai K. Life events and anxiety in Chinese medical students. *Soc Psychiatry Psychiatr Epidemiol.* 1997;32(2):63-7.[[PubMed](#)][[Google Scholar](#)]