

Prevalence of anxiety among pre-clinical medical students: A cross-sectional study

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ABSTRACT

Introduction: A major worldwide health problem, anxiety disorders have detrimental morbidity and death rates. The study aimed to assess the status of generalized anxiety disorder and its association with related explanatory variables among medical college. **Methods:** A cross-sectional study was conducted among MBBS students of Gandaki Medical College studying in 1st and 2nd years using a self-administered questionnaire. The study was conducted from February 14 to 28, 2024. The study used a scale to measure anxiety levels using a 4-point Likert-scale Generalized Anxiety Disorder (GAD) with scores ranging from minimal 0 to maximum 21. Chi-square tests were applied at a 5% level of significance to find out the association of anxiety categories with respondents' characteristics. **Results:** Out of 100 total respondents, 51% of the respondents were male, 41% were at age of 20 or below, and 94% were from the Hindu religion. Of total, over 25% of respondents reported daily nervousness, anxiety, and worry, while 31% experienced excessive worry and 25% experienced easily annoyed or irritable symptoms. The study found that 67% had generalized anxiety disorder including 27% had mild anxiety, 17% had moderate anxiety, and 23% had severe anxiety. Out of the total 21 scores, the GAD score in the study was found to have a mean score of 8.86. In addition, the study found a significant association of respondents' sex and screen time with anxiety, but no significant association was found with age, academic year, caste, family type, or sleep hour. **Conclusions:** This study highlights a relatively higher level of generalized anxiety disorder among medical students, emphasizing the need for early detection, preventative measures, and treatment programs to improve their quality of life.

Keywords: Generalized Anxiety Disorder, medical college, students.

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INTRODUCTION

Stress and anxiety are commonplace in everyday life for people. Approximately half of those with anxiety disorders say their symptoms started when they were young.¹ Research has shown that around one-third of the population suffers from an anxiety problem at some point in their lives.¹ A chronic ailment that significantly impairs day-to-day functioning is generalized anxiety disorder (GAD), as stated by the National Health Service.² Anxiety disorder has the highest prevalence compared with other common mental health disorders, with a lifetime prevalence of over 15%.³ Among college students, anxiety is the most common issue. It impacts 41.6% of students, of whom 36.4% suffer from depression.⁴ GAD is prevalent in all populations. It is one of the most prevalent anxiety disorders among college students worldwide, especially medical students, and is more common among females than males.^{5,6}

Among first year medical students, the prevalence was 89.7% in females and 60% in males, although no suicidal ideation was reported by either males or females.⁷ Stress is a particularly important issue in education because it has the potential to impede learning and performance.⁸ A study suggested that high levels of

stress and anxiety can interfere with and negatively affect students' academic performance, clinical practice, dropout rates, and professional development.^{3,9} If left untreated, it is an extremely serious condition that may lead to other disorders such as anxiety-related depression.¹⁰ Students are exposed to a totally new environment in medical school: staying away from family, spending maximum time on screens and sitting in chairs for study purposes, eating unhealthy processed and fast foods, which predisposes them to developing anxiety disorders. Also, medical students suffer from GAD as they come across higher stress levels, academic pressure, family financial problems, and many medical as well as psychological illnesses.¹¹ An anxiety-free life is a major and important need of the present generation. A life without anxiety attenuates physical, psychological, mental, and social disorders and improves every aspect of health as well as life. A person with no anxiety disorder achieves better career goals, better health, and better social relationships. Thus, this study aimed to assess the status of generalized anxiety disorder and its association with related explanatory variables among preclinical undergraduate students of a medical college in Pokhara.

METHODS

A cross-sectional study was conducted among preclinical undergraduate students of Gandaki Medical College, Pokhara. Preclinical students consisted of MBBS students who were studying in their first and second years. The study was conducted from February 14 to February 28, 2024. Fifty percent of each batch was selected for the sample size. So, the sample size was 100. A self-administered questionnaire was used to collect the data. Independent variables include age, sex, ethnicity, religion, current living status, type of family, number of family members, average monthly income in the family, sleep hours per day, and screen hours per day. The dependent variable was GAD which was measured using the GAD-7 questionnaire. It consists of seven items that were rated on a 4-point Likert-type scale ranging from "not at all" (score-0), "several days" (score-1), "more than half the days" (score-2), and "nearly every day" (score-3) with a score ranging from 0 to 21 for the total score of the scale.¹² The degree of was indicated by the scores on this scale, which are 0-4 indicate 'minimal/no anxiety', 5-9 indicate 'mild anxiety', 10-14 indicate 'moderate anxiety', and 15-21 indicate 'severe anxiety'. The scores of GADs will be calculated by summing the scores for the relevant items.¹² Statistical Package on Social Sciences (SPSS) version 21.0 was applied for data entry, cleaning, and analysis. All inferential analyses were conducted at a 5% level of significance. For inferential analysis, no anxiety, very little anxiety, and mild anxiety were grouped into

the normal group; and moderate and severe anxiety were grouped into the presence with anxiety group. A chi-square test was applied to show an association of each independent variable with the outcome variable. Ethical approval was obtained from the Gandaki Medical College Institutional Review Committee (Ref. No. 29/080/081-F). Written informed consent was obtained from each participant. The objectives of the study were made clear to the participants, and confidentiality and the autonomy of the respondent was ensured.

RESULTS

Out of total respondents, 51% were male and 49% were aged 20 years and below. The majority (77%) of the respondents were Brahmins and Chhetri. Most of the respondents (94%) followed the Hindu religion. About three-fourths (74%) were from the nuclear family. Forty-three percent (43%) had farming or foreign employment as a main source of income, followed by business and service. More than half (53%) had fifty thousand or less in monthly income. Most of the respondents (83%) reported that they had more than 2 hours of screen time daily. More than one-third (36%) had claimed that they had insufficient sleep. (Table 1)

Table 1: Socio-demographic characteristics of respondents (N=100)

Characteristics	Frequency (N=100)	Percentage(%)
Sex of the respondents		
Male	51	51%
Female	49	49%
Age of the respondents		
≤20	59	59%
>20	41	41%
Academic Year		
First	50	50%
Second	50	50%
Caste of the respondents		
Brahmin/Chhetri	77	77%
Other than Brahmin/Chhetri	23	23%
Religion of the respondents		
Hindu	94	94%
Other than Hindu	6	6%
Type of family		
Nuclear	74	74%
Joint/Extended	26	26%
Main occupation of family		
Business	32	32%
Service	25	25%
Other (farmer/foreign employment)	43	43%
Average monthly income		
≤ 50 thousand	53	53%
>50 thousand	47	47%
Time spent on screen		
≤ 2 hours	17	17%
>2 hours	83	83%
Sleep hour		
Insufficient (6 hour or less)	36	36%
Sufficient (7-8 hours)	64	64%

More than one-fourth (26%) of respondents reported that they experienced feeling nervous, anxious, or on edge every day. Likewise, 24% of respondents reported that they experienced not being able to stop or control worrying every

day. About one-third (31%) of respondents reported that every day they had experienced worrying too much about different things. Becoming easily annoyed or irritable was the symptom that students reported experiencing every day, at 25%. (Table 2)

Table 2: Responses of respondents on each item of GAD-7

Items of GAD	Not at all n(%)	Several days n(%)	More than half of days n(%)	Nearly every day n(%)
Feeling nervous, anxious, or on edge	25(25%)	35(35%)	14(14%)	26(26%)
Not being able to stop or control worrying	33(33%)	30(30%)	13(13%)	24(24%)
Worrying too much about different things	24(24%)	33(33%)	12(12%)	31(31%)
Trouble relaxing	42(42%)	30(30%)	16(16%)	12(12%)
Being so restless that it's hard to sit still	43(43%)	25(25%)	19(19%)	13(13%)
Becoming easily annoyed or irritable	28(28%)	32(32%)	15(15%)	25(25%)
Feeling afraid as if something awful might happen	27(27%)	39(39%)	11(11%)	23(23%)

Overall, the mean GAD-7 score among participants was 8.86. Out of a total score of 21, among total, 33% were normal, 27% had mild anxiety, 17% had moderate anxiety, and 23% had severe anxiety. Based on the results, the prevalence of GAD was found 67% including mild, moderate, and severe. (Figure 1)

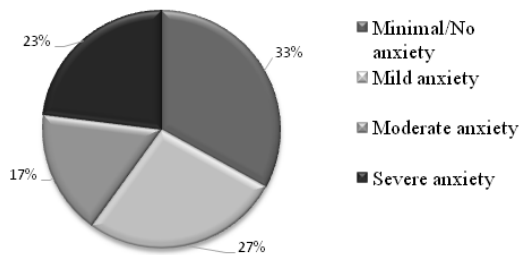


Figure 1: Distribution of generalized anxiety disorder

Table 3 shows the association between anxiety and sociodemographic variables. For bivariate analysis, no anxiety/minimal anxiety and mild anxiety were group as normal and moderate and severe were grouped as presence of anxiety. The sex of the respondents and time spent on screen had a statistically significant association with anxiety. While age, academic year, caste, family type, and sleep hours of respondents had no significant association with the presence of anxiety.

Table 3: Association of anxiety with sociodemographic characteristics of respondents

Characteristics	Generalized Anxiety Disorder (GAD)		Chi-square value	p-value
	Minimal/Mild n(%)	Moderate/Severe n(%)		
Sex				
Male	36 (70.6)	15 (29.4)	4.862	0.027*
Female	24 (49)	25 (51)		
Age (in years)				

≤20	37 (62.7)	22 (37.3)	0.441	0.507
>20	23 (56.1)	18 (43.9)		
Academic Year				
First	31 (62)	19 (38)	0.167	0.683
Second	29 (58)	21 (42)		
Caste				
Brahmin/Chhetri	43 (55.8)	34 (44.2)	2.409	0.121
Other than Brahmin/Chhetri	17 (73.9)	6 (26.1)		
Type of family				
Nuclear	48 (64.9)	26 (35.1)	2.807	0.094
Joint/Extended	12 (46.2)	14 (53.8)		
Time spent on screen				
≤ 2 hours	14 (82.4)	3 (17.6)	4.264	0.039*
>2 hours	46 (55.4)	37 (44.6)		
Sleep hour				
Insufficient (6 hour or less)	18 (50)	18 (50)	2.344	0.126
Sufficient (7-8 hours)	42 (65.6)	22 (34.4)		

*p<0.05 denotes statistical significance

DISCUSSION

One of the most prevalent anxiety disorders is GAD, which can cause serious complications, including depression. The key to solving this issue and raising quality of life is early detection. In several fields, the GAD-7 scale, which was created by Spritzer and associates in 2006, is recognized as a reliable instrument for identifying GAD and gauging its severity.^{12,13} We chose the GAD-7 scale as our instrument to assess GAD and ascertain its prevalence in a sample of medical students, as it has been used in several prior studies.¹³⁻¹⁷ Therefore, this study used this version of the questionnaire to assess the prevalence of GAD among students.

The study found that 67% of respondents had some level of anxiety including 17 of moderate and 23 of severe anxiety. According to earlier studies, it is normal for medical and health sciences students to have a higher than average prevalence of anxiety.¹⁸⁻²¹ Numerous variables, including socio-demographic ones, might account for this. Compared to their male peers, female students in our sample showed higher levels of anxiety. Similar results were shown in the study conducted in Nepal, Egypt, and Hong Kong that found high levels of anxiety among women.²²⁻²⁴ Other researchers, however, have not shown any significant association between gender and psychological issues. In our study, there was no significant association between academic year and level of anxiety. In contrast, a prior study found that among a sample of college students, upperclassmen had the greatest anxiety and depression scores.²⁵ According to different research on college students, anxiety peaked in the first year and then started to decline until the sixth year.²⁵

A study showed that among medical students, screen time was associated with anxiety. Studies have shown that

excessive screen time is positively associated with mental health status among university students.^{26,27} During screen time, one might engage in social comparisons between fictitious characters and actual individuals who appear to be at a higher social status than the viewer. Negative social comparisons on social media are linked to greater anxiety and depression levels.²⁸ In spite of the variables examined, the study found that students had alarmingly high levels of anxiety. Assessing this scenario will require larger sample numbers and cohort studies for intervention.

It is a cross-sectional study that does not allow for establishing causality. As the study was conducted in medical students, it may lack generalizability in other streams.

CONCLUSIONS

Generalized anxiety disorder is quite common, as this study has proven among medical students. Early detection of anxiety is crucial for preventing its growth and improving the quality of life for medical students. In order to control anxiety symptoms and reduce the percentage of students who experience them, our findings point to the necessity of preventative and treatment programs.

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