



Prevalence of Depression and Anxiety Among School and College Students

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Received: 08-04-2023; Revised: 20-06-2023; Accepted: 26-06-2023; Published on: 15-07-2023.

ABSTRACT

Two of the most widespread mental disorders seen among today's school and college students are depression and anxiety. Nowadays they are occurring more often and with high severity. They detrimentally affect students' education, relationships, and lives to a major extent. The objective of the study was to determine the prevalence of depression and anxiety in school and college students as such studies conducted in rural areas are very limited in number. The secondary objective was to determine the association of depression with anxiety among school and college students. This is using stratified sampling, this cross-sectional community-based survey was performed on 1550 students from various schools and colleges around the campus belonging to the age group of 14–24-year session, and anxiety was measured using Patient Health Questionnaire (PHQ-9) and Generalised Anxiety Disorder (GAD-7) scales respectively. The prevalence of both depression and anxiety turned out to be high even in rural areas which is quite alarming. Hence an initiative must be taken to detect and treat these conditions as soon as possible.

Keywords: Anxiety, Depression, School and college students, Prevalence.

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DOI:
10.47583/ijpsrr.2023.v81i01.020



DOI link: <http://dx.doi.org/10.47583/ijpsrr.2023.v81i01.020>

INTRODUCTION

The World Health Organization (WHO) defines health as "A state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity"^{1,2}. A lack of understanding of the connections between mental disease and other health conditions has probably led to an underestimation of the burden of mental disorders³. Millions of people are silently suffering from mental illness because it is still shunned, and they have no access to outside assistance or support^{2,4}. Depression and anxiety are seen as specific indicators of a person's mental health in the community⁵. They are very closely related⁶. Two of the most prevalent mental disorders are depression and anxiety⁷. Because of their detrimental impacts, mental diseases are drawing more and more attention worldwide.⁸ Additionally, their impacts on everyday functioning and well-being are significant and on par with those of serious chronic physical disorders^{9,10}. Anxiety and depression are more common in young people, particularly school and college-bound students².

A general definition of anxiety is a sense of tension accompanied by fear, concern, and nervousness that is typically linked to one or more potential threats¹¹. Although anxiety is common and even typical in human

behavior, it can be classified as a psychiatric condition³. Likewise, depression is a disorder that causes feelings of sadness and loss of interest in all activities⁶.

According to the World Health Organization (WHO), depression ranks fourth in terms of the global burden of disease and the number one cause of disability as calculated by Disability Adjusted Life Years (DALYs)¹². Because depressive symptoms are seen as a normal component of adolescent experience, depression is underrecognized among adolescents^{6,13}. They are known to have a significant impact on a student's academic performance⁹. They are frequently disregarded and seriously affect a student's social and personal life⁵. There are not many studies on depression and anxiety in rural setups. Hence this research primarily focuses on determining the prevalence of depression and anxiety in school and college students. The secondary objective was to determine the association between depression and anxiety.

METHODOLOGY

This cross-sectional and community-based study was carried out in eleven educational institutions which included 3 schools, 3 pre-university colleges, and 5-degree colleges across different streams (Medical, Pharmacy, Engineering, Nursing, and MBA) in B G Nagara. It covered about 1550 students aged 14-23 years who were sampled using a stratified sampling technique which comprised of age categories: 14-15,16-17,18-19,20-21,22-23. Of the total 1700 students, 1676 returned filled questionnaires, 126 submitted incomplete forms and 24 participants failed to submit the forms. Thus, a total of 1550 students were finally included in the study. This study received ethical



clearance from the Institutional Ethics Committee, of Adichunchanagiri Hospital and Research Centre (AH &RC) obtained before the commencement of the study. A pilot study was done on 100 students and subsequent suggestions were incorporated before the start of the study.

Data Collection and Measures of Depression and Anxiety

At a scheduled period, all questionnaires were distributed, and the researcher verbally explained the study to participants in a classroom setting, and after 10 minutes, the responses were collected on-site. To avoid bias, influence, or uncertainty, teachers left the classrooms during the 10-minute period.

The questionnaire contained three parts :

1. Sociodemographic information,
2. Patient Health Questionnaire (PHQ-9)
3. Generalised Anxiety Disorder (GAD-7)

Patient Health Questionnaire (PHQ-9) was used to assess depression with the cut-off being 10¹⁴. The tool used to assess anxiety was Generalised Anxiety Disorder (GAD-7) with the cut-off being 10¹⁵.

Statistical Analysis

The statistical analysis of the data collected was performed using SPSS version 20 software. Descriptive statistics were used to summarize demographic details and sources of information. The prevalence of depression and anxiety was described in terms of percentage. The Chi-square test was used to assess the association between depression and anxiety. In all calculations, the p-value under 0.05 was considered significant.

RESULTS

Sociodemographic Details

A total of 1550 participants were included in the study during the data collection period. The number of students belonging to the 14-15, 16-17, 18-19, 20-21,

and 22-23 age groups were 309(19.93%), 326(21.03%), 307(19.8%), 302(19.74%) and 306(19.74%) respectively. Out of the study sample of 1550 students, 52.1% percent were females, and the remaining were males (47.8%). 309(19.94%) of the total participants were school students, 326(21.03%) were doing their PU, 287(18.52%) were studying pharmacy, 81(5.23%) were doing their nursing, 103(6.65%) were MBBS students, 294(18.97%) were studying engineering and 150(9.68%) were doing their MBA (Table 1).

Table 1: Sociodemographic Details

Characteristics	Category	Frequency (n)	Percentage (%)
Age (years)	14-15	309	19.93
	16-17	326	21.03
	18-19	307	19.8
	20-21	302	19.5
	22-23	306	19.74
Gender	Female	809	52.19
	Male	741	47.81
Education	School	309	19.94
	PU	326	21.03
	Pharmacy	287	18.52
	Nursing	81	5.23
	MBBS	103	6.65
	Engineering	294	18.97
	MBA	150	9.68

Prevalence of Depression

Our research reveals that out of 1550 participants, the prevalence of depression was 45.2%(n=701) whereas 54.8%(n=849) had no depression. Out of 5 different age groups, our results showed that the prevalence of depression was highest in the age category 18-19(50.2%) and was the least in the 16-17 category (34.7%) which is depicted in Table 2.

Table 2: Prevalence of Depression based on age group.

Age		Depression		Total	p-value
		NO	YES		
14-15	Count	167	142	309	<0.001
	% within Age	54.0%	46.0%	100.0%	
16-17	Count	213	113	326	
	% within Age	65.3%	34.7%	100.0%	
18-19	Count	153	154	307	
	% within Age	49.8%	50.2%	100.0%	
20-21	Count	153	149	302	
	% within Age	50.7%	49.3%	100.0%	
22-23	Count	163	143	306	
	% within Age	53.3%	46.7%	100.0%	
Total	Count	849	701	1550	
	% within Age	54.8%	45.2%	100.0%	



Prevalence of Depression Based on age group and Severity.

Our result shows that the percentage of students who had mild depression was 33.3%, 28.3% had moderate depression, 12.1% had moderately severe depression and 4.8% of them were severely depressed. Among 5 different age categories, mild depression was highest in the 16-17 category(40.5%), moderate depression was highest in the 18-19 category and moderately severe depression was highest in the 14-15 age category and severe addiction was highest in the 14-15 category (Table 3).

Prevalence of Depression Based on Gender and Severity

Out of 809 females, 355 participants suffered from depression, whereas 346 out of 741 males were depressed. Hence males showed a higher percentage of depression (46.7%) than females (43.9%).

Results show that out of 809 females, 288(35.6%) had mild depression, 222(27.4%) had moderate depression, 87(10.8%) had moderately severe depression and 46 (5.7%) were severely depressed whereas out of 741 males, 228(30.8%) had mild depression, 216(29.1%) had moderate depression, 101(13.6%) had moderately severe depression and 29(3.9%) were severely depressed. Hence females were more severely depressed (5.7%) than males (3.9%) which is illustrated in Table 4.

Prevalence of Anxiety

Our research reveals that out of 1550 participants, the prevalence of anxiety was 48.2%(n=747) whereas 51.8%(n=803) had no anxiety. Out of 5 age groups, our results showed that the prevalence of anxiety was highest in the age category 14-15 (59.2%) and was the least in the 22-23 category (38.9%) which is depicted in Table 5.

Table 3: Prevalence of Depression based on age group and severity.

			Depression					Total	p-value
			Minimal	Mild	Moderate	Moderately severe	Severe		
Age	14-15	Count	63	104	70	47	25	309	<0.001
		% within Age	20.4%	33.7%	22.7%	15.2%	8.1%	100.0%	
	16-17	Count	81	132	82	26	5	326	
		% within Age	24.8%	40.5%	25.2%	8.0%	1.5%	100.0%	
	18-19	Count	65	88	102	40	12	307	
		% within Age	21.2%	28.7%	33.2%	13.0%	3.9%	100.0%	
	20-21	Count	64	89	87	43	19	302	
		% within Age	21.2%	29.5%	28.8%	14.2%	6.3%	100.0%	
	22-23	Count	60	103	97	32	14	306	
		% within Age	19.6%	33.7%	31.7%	10.5%	4.6%	100.0%	
	Total	Count	333	516	438	188	75	1550	
		% within Age	21.5%	33.3%	28.3%	12.1%	4.8%	100.0%	

Table 4: Prevalence of Depression based on gender and severity.

			Depression					Total	p-value
			Minimal	Mild	Moderate	Moderately severe	Severe		
Sex	Female	Count	166	288	222	87	46	809	0.061
		% within Sex	20.5%	35.6%	27.4%	10.8%	5.7%	100.0%	
	MALE	Count	167	228	216	101	29	741	
		% within Sex	22.5%	30.8%	29.1%	13.6%	3.9%	100.0%	
	Total	Count	333	516	438	188	75	1550	
		% within Sex	21.5%	33.3%	28.3%	12.1%	4.8%	100.0%	

Prevalence of Anxiety Based on age group and Severity.

Our result shows that the percentage of students who had mild anxiety was 31.3%, 31.5% had moderate anxiety and 16.7% of them were severely anxious. Among 5 different age categories, mild anxiety was highest in the 22-23 category(37.3%), moderate anxiety was highest in the 18-

19 category and severe anxiety was highest in the 14-15 category (Table 6).

Prevalence of Anxiety Based on Gender and Severity

Out of 809 females, 389 participants suffered from anxiety, whereas 358 out of 741 males had anxiety. Hence males showed a higher percentage of anxiety (48.3%) than females (48.1%).



Results shows that out of 809 females, 270(33.4%) had mild anxiety, 243(30.0%) had moderate anxiety and 146(18.0%) were severely anxious whereas out of 741 males, 215(29.0%) had mild anxiety, 245(33.1%) had moderate

anxiety and 113(15.2%) were severely anxious. Hence females were more severely anxious (18.0%) than males (15.2%) which is illustrated in Table 7.

Table 5: Prevalence of Anxiety based on age group.

			Anxiety		Total	p-value
			No	Yes		
AGE	14-15	Count	126	183	309	<0.001
		% within Age	40.8%	59.2%	100.0%	
	16-17	Count	146	180	326	
		% within Age	44.8%	55.2%	100.0%	
	18-19	Count	164	143	307	
		% within Age	53.4%	46.6%	100.0%	
	20-21	Count	180	122	302	
		% within Age	59.6%	40.4%	100.0%	
	22-23	Count	187	119	306	
		% within Age	61.1%	38.9%	100.0%	
Total		Count	803	747	1550	
		% within Age	51.8%	48.2%	100.0%	

Table 6: Prevalence of Anxiety based on age group and severity.

			Anxiety				Total	p-value
			Minimal	Mild	Moderate	Severe		
AGE	14-15	Count	43	83	109	74	309	<0.001
		% within Age	13.9%	26.9%	35.3%	23.9%	100.0%	
	16-17	Count	54	92	111	69	326	
		% within Age	16.6%	28.2%	34.0%	21.2%	100.0%	
	18-19	Count	72	92	104	39	307	
		% within Age	23.5%	30.0%	33.9%	12.7%	100.0%	
	20-21	Count	76	104	86	36	302	
		% within Age	25.2%	34.4%	28.5%	11.9%	100.0%	
	22-23	Count	73	114	78	41	306	
		% within Age	23.9%	37.3%	25.5%	13.4%	100.0%	
Total		Count	318	485	488	259	1550	
		% within Age	20.5%	31.3%	31.5%	16.7%	100.0%	

Table 7: Prevalence of Anxiety based on gender and severity.

			Anxiety				Total	p-value	
			Minimal	Mild	Moderate	Severe			
Sex	Female	Count	150	270	243	146	809	0.037	
		% within Sex	18.5%	33.4%	30.0%	18.0%	100.0%		
	Male	Count	168	215	245	113	741		
		% within Sex	22.7%	29.0%	33.1%	15.2%	100.0%		
	Total		Count	318	485	488	259		1550
			% within Sex	20.5%	31.3%	31.5%	16.7%		100.0%

Table 8: Association between Depression and Anxiety

			Anxiety		Total	p-value
			No	Yes		
Depression	No	Count	598	251	849	<0.001
		% within IAD	70.4%	29.6%	100.0%	
	Yes	Count	205	496	701	
		% within IAD	29.2%	70.8%	100.0%	
Total		Count	803	747	1550	
		% within IAD	51.8%	48.2%	100.0%	



Association between Depression and Anxiety

Results revealed that, out of 1550 participants, 701 participants had depression, 747 participants had anxiety, and 496 had both depression and anxiety. Hence there was an association between depression and anxiety that was statistically significant with the p-value being less than 0.001 ($p < 0.001$) which is depicted in Table 8.

DISCUSSION

A “prospective, cross-sectional study” was conducted among 1550 students in B G Nagara. The total participants were categorized based on age, gender, and education. The number of participants belonging to age groups 14-15, 16-17, 18-19, 20-21, and 22-23 were 309(19.93%), 326(21.03%), 307(19.8%), 302(19.5%) and 306(19.74%) respectively. Out of 1550 participants, 809 (52.19%) were females and 741 (47.81%) were males. 309 (19.94%) were doing their schooling (9th and 10th std), 326(21.03%) were in PU, 287(18.52%) were studying pharmacy, 81(5.23%) from nursing, 103(6.65%) were doing MBBS, 294(18.97%) were studying engineering and 150(9.68%) from MBA. Our research reveals that out of 1550 participants, the prevalence of Depression was 45.2%($n=701$) and the prevalence of anxiety was 48.2%($n=747$). The current study also demonstrated that 33.3% ($n=516$) had mild depression, 28.3%($n=438$) has moderate depression, 12.1%($n=188$) has moderately severe depression and 4.8%($n=75$) of them were severely depressed. Similarly, it was found that 31.3% ($n=485$) had mild anxiety, 31.5%($n=488$) has moderate anxiety and 16.7%($n=259$) of them were severely anxious.

These findings were like the study conducted among 400 students of D.Y. Patil University, Navi Mumbai, Maharashtra in 2022 which showed the prevalence of depression and anxiety were 48.30% and 50% respectively². Another study conducted by Khadka R et al 2022 reported the prevalence of depression and anxiety to be 39.88% and 53.97% respectively where the prevalence of anxiety was more than that of depression¹⁶. Also, our study is congruent with a recent study that reported the overall prevalence of depression and anxiety to be 38.2% and 46.9% respectively¹⁷. Furthermore, a study conducted in Jhansi, Uttar Pradesh in 2016 showed depression was 57% prevalent whereas anxiety was 71% which is higher than ours¹⁸. Our study also revealed that depression was higher in males compared to females which is like a study conducted by¹⁶, but the prevalence of anxiety was also high in females which contrasts with a few of the previous studies^{16,12}.

A significantly strong association was noted between depression and anxiety ($p < 0.001$). It was observed that as age increases, the prevalence rates reduce, and the severity pattern becomes stronger.

The results of the current study are consistent with those of the preceding studies. All the studies including the current study demonstrated the higher prevalence of anxiety among school and college students as compared to depression. The percentages though less are of grave importance in terms of their effect on students' quality of

life. The high rates of depression and anxiety among high school and college students have significant repercussions on not only psychological morbidity, which will negatively affect students' health, development, educational aspirations, and quality of life, but also on their own families, institutions, and even on other people's lives. This emphasizes the extreme and urgent need for diagnosing and treating depression and anxiety as earliest as possible.

CONCLUSION

This study aids in establishing the necessity of early screening with simple questionnaires to determine the degree of anxiety and depression that is frequently experienced by the youth population. School and college students in BG Nagara were found to have significant rates of both anxiety and depression. Contrary to the common belief that those who live in isolated rural settings have lower rates of psychiatric disease, many college students are at risk for developing anxiety and depression, which is also linked to several lifestyle illnesses. Universities are in a good position to support young student's mental health because they touch on many significant areas of their lives. As a result, they must equip themselves to take the required actions to prevent or treat depression and anxiety in their students. The government and other concerned bodies should pay attention to this area.

Funding:

There was no dedicated grant for the evaluation from any public, commercial, or non-profit organization.

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Source of Support: The author(s) received no financial support for the research, authorship, and/or publication of this article.

Conflict of Interest: The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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