Original Research Article

PREVALENCE OF ANXIETY DISORDER AMONG MBBS UNDER GRADUATE STUDENTS DURING COVID-19 PANDEMIC IN TAMILNADU

ABSTRACT

Anxiety disorder is one of the most common psychiatric co-morbidity found to be prevalent in many pandemic situations or while experiencing a delimiting illness to self or community . This study was focused on screening undergraduate students perusing MBBS for anxiety disorder was focused on early diagnosis, intervention and create awareness among themselves and their community. Study was done among 272 undergarduate medical students from Tamil nadu during covid pandemic and was asked to fill a proforma and questionnaire and were screened with Hamilton Anxiety scale. The results revealed that 80.9% had mild , 11.8% had moderate, 2.2% had severe and 5.1% had very severe anxiety levels.

Aims:

To study the prevalence of anxiety among MBBS under graduate students during covid pandemic in Tamilnadu.

Study design: cross sectional online screening and assessment study.

Place and Duration of Study:

The study was done online from Meenakshi Medical college and Research Institute, Enathur, Kanchipuram, Tamilnadu, from December 2020 to January 2021.

Methodology:

The study included 272 MBBS undergraduate students of Tamilnadu (180 female and 92 male participants; age range 18-24). All the participants were asked to fill an online proforma questionnaire following an online consent form and were screened and assessed for anxiety disorder using Hamilton Anxiety scale. Students who had severe covid-19 infection or non consenting individuals were excluded from the study.

Results: 80% of study population belong to age group between 19-21 years of age . This study had more female(66.2%) participants when compared to male(33.8%) . Majority of the study population belong to Hindu religion (89%) followed by Christians(5.9%) and Muslims(5.1%) . Majority of the study population belong to upper socio-economic status (76.5%) . Most of the study population were not infected by Covid-19 infection (76.8%) followed by 14.7% with past history of Covid -19 infection and 8.5% were actively infected during the study period. Most of the study population reported on anxious mood (85.3%) with various severities ranging from mild (32.7%),moderate(34.9%), severe(13.6%), very severe(4%) while only 14.7% had no anxious mood. 67.6% of the study population reported of anxious mood from mild to moderate in severity. 84.2% of study population reported on tension with various severities ranging from mild(30.5%), moderate(31.3%), severe(16.2%), very severe(6.3%), whereas 15.8% reported on absence of tension.62.1% of the study population reported of having fearfulness with varying severities mild(27.2%), moderate (25%), severe(6.6%) and very severe(3.3%) while 37.9% did not report of fear. Majority of the study population reported of insomnia (63.6%) with varying severities of mild(26.5%), moderate(16.9%), severe(13.2%) and very severe(7%) while 36.4% did not report of insomnia.71% of the study population reported of impaired attention and concentration. 71% of the study population reported of depressed mood , mild(29.8%) , moderate(19.1%), severe (16.2%)and very severe(5.9%) while 29% had no mood symptoms. Majority of the study population did not report of somato-muscular symptoms (64.7%)and somato-sensory (71.7%) while 35.3% and 28.3% reported of somato-muscular and somato-sensory symptoms respectively.79.4% and 80.1% did not report while 20.4% and 19.9% of study population reported of respiratory symptoms and cardio-vascular symptoms

respectively.69.9% and 84.6% did not report while 31.6% and 15.4% reported of Gastro-intestinal and genito-urinary symptoms respectively.68.4% were asymptomatic while 31.6% reported of autonomic symptoms like mouth flushing , pallor etc.46% of the study population exhibited anxious behavior characterized by fidgeting, restlessness, tremors during interview while 54% were asymptomatic. Hamilton – Anxiety scale revealed that 80.9% had mild, 11.8% moderate, 2.2% severe and 5.1% had very severe anxiety levels.

Conclusion: Majority of the study population had anxiety ranging from mild to very severe. Pandemic situation had lead to an increase In the incidence of anxiety disorder even among medical students. Early screening and management of symptoms might lead to better prognosis.

Comment [AF1]: Abstract must reflect the entire contents of the thesis/dissertation by expressing the essence of the research problem, the approach used or framework, research methods, research findings, and conclusion. no more than 500 words each

*Keywords: anxiety disorder * covid-19* pandemic* anxiety and medical students* MBBS students and anxiety* anxiety among medical students during pandemic**

1. INTRODUCTION:

Comment [AF2]: The introduction must state the things that are the background of the election research topics, including the significance of the choice of research topics the; research can be lifted from empirical symptoms or practical problems and/or theoretical problems.

Comment [AF3]: The introduction must state and place the research carried out on a scientific map that is of concern to the researcher; shows previous studies conducted by researchers and other researchers that are relevant to the research to be carried out

Anxiety disorders were found to be one of the most common problems faced by students world wide. Despite the fact that medical students are the ones who are exposed to vast knowledge about diseases and mental illness, prevalence of anxiety disorder was found to be prevalent as one in three medical students according to a few studies.[1,2,4.] Covid-19 pandemic had undoubtedly increased the prevalence of anxiety disorder worldwide. Precautious or disease spread controlling measures like wearing mask, gloves, social distancing, washing hands and isolation had been a few behaviors which had been associated with worsening of anxiety symptoms. The surge is seen even among medical professionals and medical students.[1,4.] This study was focused on finding the prevalence of anxiety disorders among MMBS undergraduate students from Tamilnadu, India. An early detection or diagnosis of anxiety disorder facilitates early intervention and management which leads to better outcome.

2. MATERIAL AND METHODS / EXPERIMENTAL DETAILS / METHODOLOGY

Comment [AF4]: Research Methodology Should ; Describe the paradigm/approach/method used in the research. The description includes, but is not limited to, things
as follows:
1. A description of the selected research design.
2. Sampling/sampling procedure and unit determination
analysis.
3. Sources and techniques of data collection and research instruments.

Data processing and analysis including (testing) the validity of the data
according to the proposed research design. Location and time of research.

The present study is a cross sectional study conducted at Meenakshi Medical college and Research Institute, Enathur, Kanchipuram, Tamilnadu between the period December 2020 to January 2021. This was an online questionnaire and interview based study. The study population were determined to be 272 in number. Participants were MBBS undergraduate students studying in Medical colleges from Tamilnadu.

HAMILTON ANXIETY SCALE :

Gold standard scale for assessment of anxiety was developed in 1950s and originally published in 1959 with adequate internal reliability. We have used the 14 item version of Hamilton Anxiety scale for assessment which approximately took 15 minutes per participants through online interview.

PROFORMA:

We have used a semi structured socio-demographic questionnaire comprising of socio-demographic data, Covid -19 infection status, treatment status, substance use and dependence pattern, co-morbid medical condition, presenting complaints, past along with Hamilton anxiety scale scores and impression. 10 minutes was the approximate duration taken to complete the questionnaire.

INCLUSION CRITERIA:

- Participants were MBBS undergraduate students from Tamilnadu who were between 18 to 24 years of age.
- Participants who gave consent to participate in the study after signing an online informed consent were included.

EXCLUSION CRITERIA:

- Participants who did not consent to participate in the study were excluded.
- Participants who were seriously ill due to physical illness were excluded.

PROCEDURE:
Participants who satisfied the inclusion criteria and the ones who consented to participate in the study were asked to fill an online informed consent form. Participants were asked to fill a semi structured proforma and were assessed through online using Hamilton - Anxiety scale for about not less than 20 minutes each to complete all the above procedures.

STATISTICAL ANALYSIS:

Data entry was done using MS Excel 2010 and statistical analysis was done using SPSS Version 22. Means and proportions were calculated, describing the baseline characteristics. Chi square test was used to compare statistical difference in proportion with the above details. A p value of <0.05 was considered statistically significant.

ETHICAL CONSIDERATIONS:

Institute ethical committee approval and clearance was obtained before the study was started. Online Informed consent was obtained from all the participants in their own language, who participated in the study. No ethical issues were involved. The information of the participants were kept confidential.

3. RESULTS AND DISCUSSION:

RESULTS:

AGE:
The participants of the study were between the age 18 to 24 years of age. 80% of study population belong to age group between 19-21 years of age.
Table 1 : Distribution according to age of the participants.

AGE IN YEARS	NUMBER OF PARTICIPANTS	PERCENTAGE
18	14	5.1
19	61	22.4
20	98	36.0
21	71	26.1
22	22	8.1
23	4	1.5
24	2	0.7
TOTAL	272	100

GENDER:
Majority of the study population were females(66.2%) while the male participants were 33.8%.
Table 2: Distribution according to gender of the participants.

GENDER	NUMBER OF PARTICIPANTS	PERCENTAGE
FEMALE	180	66.2
MALE	92	33.8
TOTAL	272	100

RELIGION AND SOCIO-ECONOMIC STATUS:

Comment [AF5]: The results and discussion can be presented in several ways
chapters as needed. In connection with this, the number and title of the chapter also adapted to the needs. Description of results and discussion can be presented in separate chapters or sub-chapters or individual chapters or
sub-chapters can simultaneously present data and discussion according to with the topic/subject of the chapter/sub-chapter

Majority of the study population belong to Hindu religion (89%) followed by Christians(5.9%) and Muslims(5.1%) . Majority of the study population belong to upper socio-economic status (76.5%).

COVID INFECTION STATUS:
Most of the study population were not infected by Covid-19 infection (76.8%) followed by 14.7% with past history of Covid -19 infection and 8.5% were actively infected during the study period.

ANXIOUS MOOD:
Most of the study population reported on anxious mood (85.3%) with various severities ranging from mild (32.7%),moderate(34.9%), severe(13.6%), very severe(4%) while only 14.7% had no anxious mood. 67.6% of the study population reported of anxious mood from mild to moderate in severity.

TENSION AND FEARFULLNESS:
84.2% of study population reported on tension with various severities ranging from mild(30.5%), moderate(31.3%), severe(16.2%), very severe(6.3%), whereas 15.8% reported on absence of tension. 62.1% of the study population reported of having fearfulness with varying severities mild(27.2%), moderate (25%), severe(6.6%) and very severe(3.3%) while 37.9% did not report of fear.

INSOMNIA:
Majority of the study population reported of insomnia (63.6%) with varying severities of mild(26.5%), moderate(16.9%), severe(13.2%) and very severe(7%) while 36.4% did not report of insomnia.

ATTENTION AND CONCENTRATION:
71% of the study population reported of impaired attention and concentration.

DEPRESSED MOOD:
71% of the study population reported of depressed mood , mild(29.8%) , moderate(19.1%), severe (16.2%)and very severe(5.9%) while 29% had no mood symptoms.

SOMATO-MUSCULAR AND SOMATO-SENSORY SYMPTOMS:
Majority of the study population did not report of somato-muscular symptoms (64.7%)and somato-sensory (71.7%) while 35.3% and 28.3% reported of somato-muscular and somato-sensory symptoms respectively.

RESPIRATORY AND CARDIO-VASCULAR SYMPTOMS:
79.4% and 80.1% did not report while 20.4% and 19.9% of study population reported of respiratory symptoms and cardio-vascular symptoms respectively.

GASTRO-INTESTINAL AND GENITO-URINARY SYMPTOMS:
69.9% and 84.6% did not report while 31.6% and 15.4% reported of Gastro-intestinal and genito-urinary symptoms respectively.

AUTONOMIC SYMPTOMS:
68.4% were asymptomatic while 31.6% reported of autonomic symptoms like mouth flushing,pallor etc.

ANXIOUS BEHAVIOUR:
46% of the study population exhibited anxious behavior characterized by fidgeting, restlessness, tremors during interview while 54% were asymptomatic.

HAMILTON – ANXIETY SCALE:
Hamilton – Anxiety scale revealed that 80.9% had mild, 11.8% moderate, 2.2% severe and 5.1% had very severe anxiety levels.

ANXIETY LEVES CORELATION:
GENDER:

Table 3: Distribution based on gender

	TOTAL anxiety levels	Total

		0 to 17 Mild Anxiety	18 to 24 Mild to Moderate anxiety	25 to 30 Moderate to severe anxiety	31 to 34 very severe anxiety	
GENDER	MALE	84	7	1	0	92
	FEMALE	136	25	5	14	180
Total		220	32	6	14	272

Table 4: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.853[a]	3	.008
Likelihood Ratio	16.479	3	.001
Linear-by-Linear Association	11.603	1	.001
N of Valid Cases	272		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is 2.03.

RELIGION :

Table 5: Distribution according to religion

Religion	0 to 17 Mild Anxiety	18 to 24 Mild to Moderate anxiety	25 to 30 Moderate to severe anxiety	31 to 34 very severe anxiety	Total
Hindu	196	28	6	12	242
Christian	14	1	0	1	16
Muslim	10	3	0	1	14
Total	220	32	6	14	272

Table 6: Chi-Square Tests

Value		df	
Pearson Chi-Square	2.681a		6
Likelihood Ratio	3.196		6
N of Valid Cases			272

a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is .

SOCIO-ECONOMIC STATUS: below mentioned parameters were statistically significant.

Table 7: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.178[a]	3	.042
Likelihood Ratio	11.003	3	.012
Linear-by-Linear Association	.642	1	.423
N of Valid Cases	272		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is 1.41.

Table 8:Distribution based on socio-economic status:

		TOTAL anxiety levels				Total
		0 to 17 Mild Anxiety	18 to 24 Mild to Moderate anxiety	25 to 30 Moderate to severe anxiety	31 to 34 very severe anxiety	
SOCIO ECONMIC STATUS	UPPER CLASS	170	20	4	14	208
	LOWER CLASS	50	12	2	0	64
Total		220	32	6	14	272

COVID STATUS AND ANXIETY LEVELS:

Table 9: Distribution of Covid status

VALID	FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
AT PAST	40	14.7	14.7	14.7
CURRENTLY	23	8.5	8.5	23.2
NEVER INFECTED	209	76.8	76.8	100
TOTAL	272	100	100	

Table 10: Distribution If covid positive, treated or not treated :

If positive	Frequency	Percent	Valid percent	Cumulative percent
Treated	51	18.8	18.8	18.8
Not treated	221	81.3	81.3	100
total	272	100	100	

Table 11: Distribution based on total anxiety levels and Covid status:

Anxiety levels	At past	Currently	Never infected	Total
0-17	32	20	168	220
18-24	5	1	26	32
25-30	2	0	6	6
31-34	1	2	14	14
Total	40	23	209	272

Table 12: chi square test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.407a	6	.622
Likelihood Ratio	4.912	6	.555
Linear-by-Linear Association	.030	1	.863

N of valid cases	272		

7 cells (58.3%) have expected count less than 5. The minimum expected count is .51.

Table13: Distribution based on anxiety levels , if covid positive:

	Treated	Not treated	total
0-17	39	181	220
18-24	7	25	32
25-30	1	5	6
31-34	4	10	14
Total	51	221	272

Table 14: chi square test

	Value	df	Asymp.sing. (2-sided)
Pearson chi square	1.260a	3	.739
Likelihood ratio	1.161	3	.762
Linear –by-linear Association	1.004	1	.316
N of valid cases	272		

cells (37.5%) have expected count less than 5. The minimum expected count is 1.13.

DISCUSSION:

Majority of the study participants were reporting of anxiety symptoms irrespective of their covid status or socio-demographic differences. However prevalence of anxiety disorder was found to be more among the non infected group of study population both in severity and prevalence. Among the covid positive individuals in past and present prevalence of anxiety was more among the ones who did not receive any treatment. Prevalence of anxiety seems to be increasing with the emergence of pandemic which was congruent with the other studies. Our study results were congruent with other such similar studies.

4. CONCLUSION

Comment [AF6]: Sub-chapters should state research findings based on research results and discussion.

The above study indicated that despite of exposure to medical knowledge, there has been a significant rise and prevalence of anxiety disorder even among MBBS students. The entire study population had anxiety at some level irrespective of covid status or treatment.

An early screening of medical professionals and students would lead to early intervention and management of anxiety disorders

CONSENT (WHERE EVER APPLICABLE)

All authors declare that 'written informed online consent was obtained from the participants for publication of this case report and accompanying images. A copy of the online written consent is available for review by the Editorial office/Chief Editor/Editorial Board members of this journa.

ETHICAL APPROVAL (WHERE EVER APPLICABLE)

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

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