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Original Research Article

Prevalence of anxiety and depressive traits among medical students – A cross-sectional study

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ABSTRACT

Introduction: Depression and anxiety are among the most commonly prevalent mental disorders most of which are treatable. They are the most common causes of morbidity, social dysfunction and reduced academic performance in students. Identifying such students who are at risk and providing them with care would result in better outcome.

Objectives: To find out prevalence of depression and anxiety among medical students.

Methodology: A cross sectional study of 450 medical students enrolled into MBBS degree of age group between 18 – 21 years. Data was collected by means of 2 questionnaires. A. Patient Health Questionnaire - 9 (PHQ – 9) for depressive traits and B. Hamilton Anxiety scale (HAM-A) for anxiety. The HAM-A is a clinician-based questionnaire; consists of 14 symptom-defined elements, and caters for both psychological and somatic symptoms. The PHQ-9 is the 9-item depression module from the full PHQ. Data entry was done using Microsoft Excel and descriptive statistics with SPSS Version 16.

Results: Approximately 13% of the students fall under Category 4 & 5 of PHQ-9 score which is significant. A higher percentage of males 14.58% had depressive traits as compared to 13.22% in females. 6.2% of the total study population suffers from severe anxiety issues. Females (11.29%) had a statistically significant higher values of anxiety as compared to males (8.88%).

Conclusion: PHQ-9 scores of >20 was associated with major depression. PHQ-9 score in the 0–4 range is less associated with depression. Similar data was recorded with HAM- A scale were scores of 25–30 were associated with anxiety episodes whereas lower scores (< 17) were not associated with any anxiety related issues.

Keywords: Depression, Anxiety, Medical Students

Introduction-

Depression and anxiety are among the most commonly prevalent mental disorders that are treatable. They are the most common causes of morbidity, social dysfunction and reduced academic performance in college students. In addition to coping with the academic pressure, some students have to deal with the stressful task of separation and individualization from their family of origin. As a result of these factors many of the students tend to develop depression or anxiety. Certain measures like improving the surveillance for identifying such students who are at risk and providing them with care would result in better outcome. Short screening tools can help reach larger populations of students efficiently. Thus the purpose of this study is to assess in medical

students the psychometric properties of Patient Health Questionnaire 9, a brief screening tool for depression and symptoms of perceived anxiety using Hamilton Anxiety rating Scale a screening tool for anxiety.

The Hamilton Anxiety Rating Scale (HAM-A) developed back in 1959,[1] was one of the foremost rating scale which measured the severity of the symptoms of perceived anxiety. It finds its application even to this day and is considered as one the widely used rating scale. There have been many scales developed since then to rate anxiety yet Hamilton anxiety scale is considered as the benchmark. Due to its efficacy the scale has been often used in clinical research.[2,3] In a study done by Donzuso G et. al. using neuro imaging modalities in healthy population, Hamilton anxiety scale has proved its efficiency as a screening instrument in clinically significant degrees of anxiety as compared to State-Trait Anxiety Inventory.[4]

The Patient Health Questionnaire (PHQ) was developed as a self-administered version of the PRIME-MD diagnostic instrument for common mental disorders. The PHQ-9 is the depression module, which scores each of the 9 DSM-IV criteria as "0" (not at all) to "3" (nearly every day).[5]Zimmerman M et.al. in their study have shown the usefulness, reliability and validity of short measures of symptom severity, psychosocial functioning, and quality of life. They also have said that such short measures of analysis are not a burden on patients and that patients complete these assessments and can be easily incorporated into a busy clinical practice in order to collect data on treatment effectiveness.[6] Wittkampf K et.al. in their study have also found PHQ -9 to be useful in detecting depression and measuring depression severity in high-risk groups in primary care.[7]

We undertook this study in order to find out the prevalence of such anxiety and depressive traits among our medical students so that we can help the effected students to have a better outcome.

Objectives-

- To find out prevalence of depression among medical students.
- To find out prevalence of anxiety among medical students.

Methodology-

This was a cross- sectional study done at Kanachur Institute of Medical Sciences, Mangalore after obtaining due ethical clearance from the Institutional ethics committee. The study population consisted of the three batches of medical students admitted to MBBS course in the institute. Universal sampling technique was adopted and a total of 450 students were considered for the study of which 386 students both males and females in the age group 18-21years participated in the study. There were no specific exclusion criteria.

Data collection procedure – Students were briefed about the purpose and nature of the study. A written informed consent was taken from the participants who are willing to participate in the study. Participants were required to fill out two questionnaires – A. Patient Health Questionnaire - 9 for depressive traits and B. Hamilton Anxiety scale for anxiety in the presence of the investigator. Time duration given to fill the two questionnaires was about twenty minutes.

The HAM-A is a clinician-based questionnaire; consists of 14 symptom-defined elements, and caters for both psychological and somatic symptoms, comprising anxious mood; tension (including startle response, fatigability, restlessness); fears (including of the dark/strangers/crowds); insomnia; 'intellectual' (poor memory/difficulty concentrating); depressed mood (including anhedonia); somatic symptoms (including aches and pains, stiffness, bruxism); sensory (including tinnitus, blurred vision); cardiovascular (including tachycardia

and palpitations); respiratory (chest tightness, choking); gastrointestinal (including irritable bowel syndrome-type symptoms); genitourinary (including urinary frequency, loss of libido); autonomic (including dry mouth, tension headache) and observed behaviour at interview (restless, fidgety, etc.).[8]

Each item is scored on a basic numeric scoring of 0 (not present) to 4 (severe): with a total score range of 0–56, where <17 indicates mild severity, 18–24 mild to moderate severity and 25–30 moderate to severe.[8]

The PHQ-9 is the 9-item depression module from the full PHQ. Major depression is diagnosed if 5 or more of the 9 depressive symptom criteria have been present at least "more than half the days" in the past 2 weeks and 1 of the symptoms is depressed mood or anhedonia. Other depression is diagnosed if 2, 3, or 4 depressive symptoms have been present at least "more than half the days" in the past 2 weeks and 1 of the symptoms is depressed mood or anhedonia. One of the 9 symptom criteria ("thoughts that you would be better off dead or of hurting yourself in some way") counts if present at all, regardless of duration.[9]

For most analyses, the PHQ-9 score ranges from 0- 27 was divided into the following categories of increasing severity: Category 1 – scores from 0–4, Category 2 scores from 5–9(minimal symptoms), Category 3 scores from 10 –14(minor depression), Category 4 scores from 15–19 (moderate), and Category 5 score 20 or greater as severe depression.[9]

All the questionnaires were coded to maintain the privacy and confidentiality of the participants.

Analysis/ statistical tools: Data entry was done using Microsoft office Excel 2003 Descriptive statistics will be done using or IBM SPSS Ver 23.

Results:

A total of 386 students participated in the study of which 242 (65.76%) were females and 144(34.24%) were males.

Table 1 – PHQ-9 Categories

Category	Frequency(n)	Percent(%)
Category 1	128	33.2
Category 2	137	35.5
Category 3	67	17.4
Category 4	43	11.1
Category 5	11	2.8
Total	386	100.0

Approximately 13% of the students fall under the Category 4 and 5 with scores ranging from 15-27

Table 2 – PHQ-9 Gender vs Categories

Gender	Category 1	Category 2	Category 3	Category 4	Category 5	Total
Female	78	90	42	26	6	242
Male	50	47	25	17	5	144
Total	128	137	67	43	11	386

Of the total, 13.22% of females fall under category 4 and 5 whereas 14.58% of males fall under category 4 and 5.

Table 3 - PHQ 9 Mean scores

	Gender	N	Mean	Std. Deviation	p-value
PHQ 9	Female	242	7.93	5.338	0.693
	Male	144	7.70	5.471	

p value < 0.05 is significant

Mean PHQ-9 scores for depressive traits and standard deviation are almost similar in males and females.

Table 4 – HAM-A Categories

Categories	**Frequency**	**Percent**
Mild	328	85.0
Moderate	34	8.8
Severe	24	6.2
Total	386	100.0

HAM-A categories for anxiety shows that 6.2% of the study population is suffering from anxiety related traits.

Table 5 – HAM-A Mean scores

	Gender	N	Mean	Std. Deviation	p-value
HAM -A	Female	242	11.29	7.688	0.0037
	Male	144	8.88	7.527	

p value < 0.05 is significant

Females have a higher mean value as compared to males and are statistically significant .

Discussion:

This questionnaire based study done in our institute aimed at finding out the prevalence of anxiety and depressive traits among our medical students. PHQ-9 was used for depressive traits and Hamilton anxiety score was used for anxiety related traits. Both these tests are validated as a very good screening tests for depression and anxiety.[2] In our study we found out that 13% of the students were falling under Category 4 and 5 of PHQ- 9 questionnaire for depression which was on a higher side as compared to Arroll B et.al. who has quoted major depression of 6.2% in their study. [2] This signifies that a small portion of the study group are in the vulnerable category.

PHQ-9 mean scores between males (7.70) and females (7.93) were almost same without any significant difference (p value 0.693). The mean scores are slightly higher as compared to Lotrakul M. et. al. who had an overall mean score of 4.93 in their study.[3] Hamilton Anxiety questionnaire was categorised into 3 categories. In our study we found 6.2% of the participants in the severe anxiety and is on similar lines with Biswas S. et. al. who has reported 5.13% severe anxiety category in the age group [10] which needs to be addressed for better outcome of our medical graduates.

The mean scores with HAM-A showed statistically significant difference between males (8.88) and females (11.29), (p value 0.0037) indicating that females were having more anxiety issues than males similar to the study by Biswas S. et. al. [10] where there was a significant difference in anxiety issues with females as compared to males.

Limitations of this study: The study population is small in number representing the medical students. There is a need for a study to be done on a larger scale. Sensitivity and specificity were not done for this particular study.

Scope for further study: A detailed qualitative study is indicated to come up with the possible causes so that it can be addressed effectively

Conclusion: The likelihood of PHQ-9 scores of >20 for major depression were high. PHQ-9 score in the 0–4 range is less associated with depression. High scores were associated with incidence of major depression. Similar data was recorded with HAM- A scale where scores of 25–30 were associated with anxiety episodes whereas lower scores (< 17) were not associated with any anxiety related issues.

Implications: Students who come into medical graduation will be exposed to a totally new form of environment compared to school and pre university education. Medical course curriculum is said to be very tough as

compared to other professional courses. Even brilliant students may at times fail to cope up and may fail to deliver their best. They may end up with depression or anxiety. Such potential students have to be identified and counselled so that they will end up with better performance and also to have a better quality of life.

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Conflict of Interest: Authors declare that this no conflict of interest.

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