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A COMPARATIVE STUDY ON PREVALENCE OF DEPRESSION AMONG MEDICAL AND ENGINEERING UNDERGRADUATE STUDENTS OF GUNTUR DISTRICT ANDHRA PRADESH

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Abstract

Background: Depression is one of the leading causes of disease burden globally. Depression contributes to significant disease burden at national and global levels. Globally depression is the top cause of illness and disability among young and middle-aged populations. Objective: To estimate the prevalence of depression among Medical and Engineering undergraduate students. **Materials and Methods:** This cross-sectional study conducted among Medical undergraduate students from Guntur medical college and Engineering undergraduate students from Acharya Nagarjuna University College of Engineering & Technology in Guntur district. The study was conducted over a period of September 2015 to September 2017. **Result:** Overall prevalence of depression was found to be 51.7% among medical undergraduate students and 43.9% among engineering undergraduate students. Among medical students 48.3% scored as no depression, 25.6% as Minimal depression, 16.1% as Major Depression-Mild severity, 8.3% as Major depression- Moderate severity and 1.7% as Major Depression-Severe severity. Among engineering students, 56.1% scored as no depression, 31.7% as Minimal depression, 10.6% as Major depression- Mild severity, 1.7% as Major depression- Moderate severity and none as Major Depression-Severe severity. **Conclusion:** Overall prevalence of depression was found to be 51.7% among medical undergraduate students and 43.9% among engineering undergraduate students.

INTRODUCTION

Depression is a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness, and poor concentration. It can cause the affected person to suffer greatly and function poorly at work, at school and in the family.[2] Causes of depression are several, including biological, social, economic and cultural factors, which are triggered by environmental factors.[1]Depression is an extremely common illness affecting people of all ages, genders, different socioeconomic groups and religions in India. Depression affects people from all backgrounds across the life-course, from early childhood to the end stages of life, with an increased toll at certain time points. Much of the understanding in this area is centered on depression among adults, but it is essential to recognize the fact that children, adolescents and the elderly population

are susceptible and affected as well.[1]Depression is both a cause and consequence of several non-communicable diseases (NCDs) such as cancer, ischemic heart disease and diabetes, substance use disorders (alcohol and drugs) and nutritional disorders (under-nutrition, over nutrition and obesity). It is also adversely associated with chronic communicable diseases like tuberculosis (TB), Human immunodeficiency virus (HIV) and others.1Depression is a common illness worldwide, with more than 300 million people affected. Globally, the proportion of the population with depression is estimated to be 4.4%.1 Close to 8,00,000 people die due to suicide every year. Suicide is the second leading cause of death in 15-29 year olds.[2] India is home to an estimated 57 million people (18% of the global estimate) affected by depression.[1] Among individuals with depression, the proportion of mild, moderate and severe depression was 24.6%, 36.4% and 39.0% respectively. Nearly half of all individuals with depression (51.3%) had a co-morbid condition

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including other mental disorders.[1]Despite the considerable burden of depression in India, more than 80% had not received any treatment. 1 The burden of depression disability adjusted life year (DALY) increased by 67% between 1990 and 2013. As per National Mental Health Survey (NMHS) (2015-16) in India, one in 20 (5.25%) people over 18 years of age have ever suffered (at least once in their lifetime) from depression amounting to a total of over 45 million persons with depression in 2015.[1]The lifetime prevalence of depression in India was 5.25% among individuals aged 18+ years and the current prevalence was 2.68%, highlighting the fact one out of 20 adult individuals have suffered from depression in the past with half of them suffering at present.1 India is home to an estimated 57 million people (18% of the global estimate) affected by depression.1 It is projected to be the second leading cause of disease burden globally and third leading cause of disease burden in low- and middle-income countries(LMICs) by 2030.People with depression are 1.52 times more likely to die than the general population, probably due to their untreated mental or physical health problem.[1] A World Health Assembly resolution passed in May 2013 has called for a comprehensive, coordinated response to mental disorders at the country level.[2] "Depression – let's talk" is the slogan for World Health Day 2017.[1]Recognizing depression at an early stage is critical for reducing suicidal deaths and deliberate self-harm across the spectrum.1 Depression can in turn, lead to more stress and dysfunction and worsen the affected person's life situation and depression itself.[2] Depression and suicide are closely interlinked. At its worst, depression can lead to suicide.[1] People with depression are often stigmatized and are excluded from family and society. They also tend to under-perform in education and work, thereby remain increasingly deprived of economic and social opportunities, with a decreased quality of life.[1] Hence this study was conducted to estimate the prevalence of depression among Medical and Engineering undergraduate students.

MATERIALS AND METHODS

This cross-sectional study conducted among Medical undergraduate students from Guntur medical college and Engineering undergraduate students from Acharya Nagarjuna University college of Engineering & Technology in Guntur district. The study was conducted over a period of September 2015 to September 2017. A total of 360 students i.e 180 students from each group aged between 17-22 years from one government medical college and government engineering college were included in the study.

Inclusion Criteria
1. All the students who gave consent to participate in the study were included.

2. Students who attend the college on the day of the study were included.

Exclusion Criteria
1. Students who are not willing to participate were excluded.
2. Students who were already diagnosed and treated for any psychosocial disorders were excluded from the study.

Study Tools
The questionnaire included socio demographic details, Patient Health Questionnaire (PHQ9) is a reliable and valid measure of depression severity validated and it is a useful clinical and research tool. (44) Cut-off scores used were 0-4 for Normal range, 5-9 for Minimal depressive symptoms, 10-14 for Major depression, mild severity,15-19 for Major depression, moderate severity and 20 or higher for Major depression, severe severity. To score the instrument, tally each response by the number value under the answer headings, (not at all=0, several days=1, more than half the days=2, and nearly every day=3). Add the numbers together to total the score on the bottom of the questionnaire. This is a self-administered questionnaire which assists in screening, evaluating and provisionally diagnosing depression. It has been field tested and validated in large primary care patient samples. The nine items of the PHQ 9 are based directly on the nine diagnostic criteria for major depressive disorder in Diagnostic and statistical manual of mental disorders-IV. Information regarding various personal and academic factors was also collected. Ethical committee clearance was obtained from the institution before starting the study. Initially the purpose of the study was explained to the college principals and permission was taken for conducting the study in their respective colleges. Students from all four years of the Guntur medical college and Acharya Nagarjuna University college of Engineering & Technology were eligible to participate in this study. A total of 360 undergraduate students participated. Data was gathered by an anonymous self-reporting questionnaire, which was distributed separately to each student during an appropriate lecture period, and collected at the end of each session. Participation in the study was on a voluntary basis and informed consent was obtained from the students after the aims and objectives of the study were explained to them. Special attention was paid to ensure that the students clearly understand the instructions about answering the questionnaire. In addition, they were asked not to write their name or identifying information on the questionnaire in order to encourage them to provide more open and honest answers and questionnaires were filled using code number. Participants were assured of the confidentiality of their responses.

Statistical Analysis
Data entry and statistical analysis was performed with the help of epi-info software, Microsoft excel 2007 and SPSS version 16. Statistical test chi-square

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test was applied to test the association between variables and depression. The statistical significance level was fixed at p<0.05. Suitable diagrams and tables were used for the representation of the data.

RESULTS

Majority of study subjects in medical group belong to the age group of 19-20 years (48.3%) followed by 21-22 years (43.9%) and 17-18 years (7.8%). Similarly, in engineering group majority belong to 19-20 years age group (57.8%) followed by 17-18 years (40%) and 21-22 years (2.2%).

Table 1: Distribution of students according to age group (n=360)

Age Group(In Years)	Medical		Engineering	
	frequency	%	frequency	%
17-18	14	7.8%	72	40.0%
19-20	87	48.3%	104	57.8%
21-22	79	43.9%	4	2.2%
Total	180	100%	180	100%

Among medical students, males constitute 42.2% and females constitute 57.8%. Similarly, among engineering students, males constitute 53.9% and females constitute 46.1%.

Table 2: Distribution of students according to gender (n=360)

Sex	Medical		Engineering	
	frequency	%	frequency	%
Male	76	42.2%	97	53.9%
Female	104	57.8%	83	46.1%
Total	180	100%	180	100%

Majority of study subjects in medical group belong to Hindus (76.1%) followed by Christian (18.3%) and Muslim (5.6%). Similarly, in engineering group majority belong to Hindus (86.1%) followed by Christian (7.8%) and Muslim (6.1%)

Table 3: Distribution of students according to gender (n=360)

Religion	Medical		Engineering	
	frequency	%	frequency	%
Hindu	137	76.1%	155	86.1%
Muslim	10	5.6%	11	6.1%
Christian	33	18.3%	14	7.8%
Total	180	100%	180	100%

Majority of study subjects in medical group belong to upper class (65%) followed by upper middle (15%), lower middle (13.3%) and upper lower (6.7%). Similarly, in engineering group majority belong to upper class (41.7%) followed by upper lower (21.7%), lower middle (21.1%), and upper middle (15.5%).

Table 4: Distribution of students according to socioeconomic status (n=360)

Socioeconomicstatus	Medical		Engineering	
	frequency	%	frequency	%
Upperclass	117	65%	75	41.7%
Uppermiddle	27	15%	28	15.5%
Lower middle	24	13.3%	38	21.1%
Upper lower	12	6.7%	39	21.7%
Lowerclass	00	0%	00	0%
Total	180	100%	180	100%

Majority of study subjects in medical group belong to nuclear family (83.3%) followed by joint family (11.1%) and three generation family (5.6%). Similarly in engineering group, majority belong to nuclear family (75.5%) followed by joint family (16.7%) and three generation family (7.8%).Majority among medical students staying away from home (62.8%) followed by Home (37.2%). Similarly among engineering students majority staying away from home (87.8%) followed by Home (12.2%).Study subjects in medical group belong to urban area (67.8%) followed by rural area (32. 2%).Similarly in engineering group, majority belong to rural area (60%) followed by urban area (40%).Overall prevalence of depression among medical students was found to be 51.7%. and the prevalence of depression among engineering students was 43.9%

Table 5: Prevalence of depression among study population (n=360)

Depression	Medical		Engineering	
	frequency	%	frequency	%
Yes	93	51.7%	79	43.9%
No	87	48.3%	101	56.1%
Total	180	100%	180	100%

According to the cut off scores, among 180 medical students, 87 students (48.3%) scored as no depression, 46 (25.6%) as Minimal depression, 29 (16.1%) as Major depression-Mild severity,15 (8.3%) as Major depression-Moderate severity and 3 (1.7%) as Major depression- Severe severity. Among 180 engineering students, 101 students (56.1%) scored as no depression, 57 (31.7%) as Minimal depression, 19 (10.6%) as Major depression-Mild severity,3 (1.7%) as Major depression- Moderate severity and none as Major depression- Severe severity.

Table 6: Distribution of students according to severity of depression (n=360)

Depression	Medical		Engineering	
	frequency	%	frequency	%
No depression	87	48.3%	101	56.1%
Minimal depression	46	25.6%	57	31.7%
Major depression-Mild severity	29	16.1%	19	10.6%
Major depression-Moderate severity	15	8.3%	3	1.7%
Major depression-Severe severity	3	1.7%	00	00%
Total	180	100%	180	100%

DISCUSSION

The present study was conducted to compare the prevalence of depression and associated factors among the medical and engineering undergraduate students. A total of 360 study subjects were selected comprising of 173 males and 187 females. Study population belonged to 17-22 years age group. Among the 360 study population, 172 (47.7%) are having depression.Consistent with the economic changes in the country, medical and engineering student population is increasing every year. In this competitive era, this has enhanced the risk of developing various mental disorders like depression. Well-documented studies to determine the prevalence of depression and its associated factors among medical and engineering students are few at the global level.This study gives an idea of the magnitude of depression among medical and engineering students and some of its associated factors, which can be evaluated by further studies in depth by qualitative and quantitative methods. Since it is a cross-sectional study, it is hard to assess the direction of influence and it precludes from making causal inferences from our study findings. However, the sufficient sample size and using a valid scale to classify depressive symptoms of the students increases the validity of the study. The study found that the prevalence of depression was 43.9% among engineering students as compared to the higher 51.7% in medical students. The findings in this study that medical students were more frequent victims of depression than engineering students was expected considering the more intensive study demands of a medical programme compared to engineering. Prevalence of depression among medical students is a cause of concern as it may impair behaviour of students, diminish learning and

ultimately affect patient care after their graduation. Students in pursuit of higher professional education in a highly competitive environment such as that found in medical college are more vulnerable to depression than those with lesser challenges.Present results were in agreement with the several studies that have reported that depression was more common among medical students when compared to engineering students.In other study conducted by Chenganakkattil S et al.[3] the overall prevalence of depression among medical students was found to be 20.6% and it was found to be more than the prevalence of depression among engineering students (15.3%) which is similar to the present study.In other study conducted by Devi LS et al.[4] mean value of depression of medical students is 85.7666 and the mean value of depression of engineering students is 71.288. The level of depression indicates that medical students are more depressed as compared to the engineering students which is similar to the present study. In other study conducted by Naveen S et al.[5] the overall prevalence of depression among medical students was found to be 38.1% and it was found to be more than the prevalence of depression among engineering students (37.5%) which is similar to the present study. In other study conducted by Muddgal A et al.[6] showed that mean value of depression in medical and engineering students are 5.73 and 5.67 respectively. Engineering group had lower mean value 5.67 hence the engineering students exhibited low depression in comparison to medical students which is similar to the present study. In other study conducted by Fatimah N et al.[7]in Pakistan showed that amongst engineering students, 22.5% students were found to be suffering from clinical depression and amongst medical students, 15.0% of students had clinical depression. which is in contrast to the

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present study. This could be either due to the different instruments used in this study or it could be a real difference. In this study according to the cut off scores, among 180 medical students, 46(25.6%) scored as Minimal depression, 29 (16.1%) as Major Depression-Mild severity, 15 (8.3%) as Major depression- Moderate severity and 3 (1.7%) as Major depression- Severe severity. Among 180 engineering students, 57(31.7%) scored as Minimal depression, 19 (10.6%) as Major depression- Mild severity, 3 (1.7%) as Major depression- Moderate severity and none as Major depression- Severe severity. In other study conducted by Kumar GS et al.[8] majority (80%) had mild and moderate degree of depression and the prevalence of severe and very severe depression was 7.5% and 6.7% respectively which is similar to the present study. In other study conducted by Singh A et al.[9] among medical students mild symptoms of depression were found in 64.8% students, moderate in 27.8% and severe in 7.4% students which is similar to the present study.

In other study conducted by Fatimah N et al.[7] in Pakistan showed that among medical students 71.5% scored as low depression, 22.8% as moderate depression,5.7% as significant depression which is similar to the present study and among among engineering students 69% scored as low depression, 24.4% as moderate depression, 6.6% as significant depression which is similar to the present study.In this study more than half of the depressed students are having mild depression. Mild depression usually causes symptoms that are detectable and impact upon daily activities. Mild depression often goes undiagnosed because the symptoms are not considered to be 'bad enough' for people to think they may have depression and discuss it with their doctors or other people. However accurately diagnosing depression when it is mild and treating it effectively at this stage can prevent the condition from worsening to become moderate or severe. There are also more treatment options available for mild depression. Lifestyle changes such as regular exercise, relaxation, ensuring sufficient and regular sleep are often sufficient.

CONCLUSION

In conclusion, the current research shows that topical lignocaine when sprayed onto the back of the pharyngeal wall 3 minutes prior to propofol induction, provide excellent conditions for LMA insertion, without administering the neuromuscular blockers. It was observed that in group of topical lignocaine no of attempts for LMA insertion was significantly less. Even after the LMA was introduced, changes were insignificant. In HR, SBP, DBP and MAP. We therefore conclude that greater insertion conditions are provided by topical lignocaine. But with IV lignocaine hemodynamics' stability is the same as topical lignocaine.

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