



STRESS, ANXIETY AND DEPRESSION AMONG STUDENTS OF SELECTED MEDICAL AND ENGINEERING COLLEGES, BANGALORE- A COMPARATIVE STUDY

Article ID-0023

Naveen S
Post Graduate, Dept. of
Community Medicine,
RajaRajeswari Medical
College and Hospital,
Bangalore
dr.naveennair@ymail.com

Swapna M
Assistant Professor,
Dept. of Community
Medicine, RajaRajeswari
Medical College and
Hospital, Bangalore

Jayanthkumar K
Professor, Department
of Community
Medicine, RajaRajeswari
Medical College and
Hospital, Bangalore

Shashikala
Manjunatha
Professor and Head,
Dept. of Community
Medicine, RajaRajeswari
Medical College and
Hospital, Bangalore

Abstract: Students of professional courses are under considerable amount of stress, owing to the ever-increasing study load and the burden of expectations from the society. Some of them go to the extent of falling into Depression and associated psychosocial disorders. This study was done to assess the proportion of students with stress, anxiety and depression in the 2nd, 3rd and final years of MBBS and Engineering courses, in selected medical and engineering colleges, Bangalore using the Depression Anxiety Stress Scale. Of the total 304 students in different years of each of the professional course, 33.6 % suffered from stress, 49.3% suffered from anxiety and 37.8% suffered from depression in varying levels of severity.

Index terms: Medical students, Engineering students, Stress, Anxiety, Depression

I. INTRODUCTION

Mental health refers to a broad array of activities directly or indirectly related to the mental well-being component included in the World Health Organization's definition of Health [1]. Mental Health problems are a major public health concern due to their high prevalence rates, difficulties related with identification, treatment and their tendencies to become chronic. A student of Medical and Engineering courses has to read many hours a day routinely to understand vast field of study. Family and

society has very high expectations from them [2]. Studies, related to anxiety and depression among students of such professional courses, have been reported from abroad, but such data from India is scarce [1]. Therefore, this study was undertaken to assess the level of perceived mental pressure among the students of the 2nd, 3rd and 4th years of the MBBS and Engineering courses.

OBJECTIVES:

- I. To assess and compare the proportion of students with Stress, Anxiety and Depression studying in the Second, Third and Final Years of a Medical and Engineering college, Bangalore.
- II. To describe the pattern of occurrence of Stress, Anxiety and Depression among medical and engineering students.

II. METHODOLOGY

This cross sectional study was carried out among the second, third and final year undergraduates of a medical and engineering college in Bangalore during the months of October and November 2014. The study was aimed at finding the effect of professional courses, its curriculum and the amount of hard work it demands, on the mental stress of the students and hence the First year MBBS and



Engineering students who had just joined the college and not adequately exposed to the syllabus or examinations of the courses were excluded from the study. Similarly, students who were already diagnosed and treated for any psychosocial disorders were also excluded from the study. Based on similar studies conducted by Modi K et al on medical students [2], the sample size was calculated as 152 each from medical and engineering students. Probability Proportionate to Population Sampling method was employed to select the study subjects. Data was collected using a standard questionnaire, which had 2 sections consisting questions for socio-demographic information and the Depression Anxiety Stress Scale developed by the Australian Psychology Foundation, Sydney and approved by the WHO [3].

Data was entered in Microsoft Excel and analyzed using SPSS-20.0. Chi square test of significance was employed. Fisher’s exact test was used when the cell frequencies were less than 5. Informed written consent was taken prior to the study. Institutional Ethical Clearance was obtained.

III.RESULTS:

The total strength of students in the second, third and final year MBBS and Engineering courses was 220 and 290 respectively. Out of the total students, 152 participants were selected each from MBBS and Engineering courses. The study subjects comprised of 50 boys and 102 girls in the MBBS course and 104 boys and 48 girls in the Engineering courses. Their ages ranged from 18 to 22 years.

In case of the MBBS course, the study subjects included 64 students from the second year (42.2%), 52 students from the third year (34.2%) and 36 (23.6%) students from the final year. In the engineering courses, 62 (40.8%) students were in the second year, 50(32.8%) students in the third year and 40 (26.4%) students were in the final year.

Of the 152 students in different years of the MBBS course, 50 suffered from stress, 71 suffered from anxiety and 58 suffered from depression in varying levels of severity. The highest proportion of students with stress and anxiety was in the Third year which amounted to 21 (42.0%) and 31 (43.7%) students respectively. In case of depression, the highest proportion of students was seen in the Second year where 26 (44.8%) students were suffering. In case of the 152 engineering students interviewed, 52 (34.2%) suffered from stress, 79 (52.0%) suffered from anxiety and 57 (37.5%) from depression. The highest proportion of students suffering from stress

and anxiety was seen in the Second year which was 19 (36.5%) and 33 (41.8%) respectively. Depression was seen in the highest proportion in the Third year affecting 21 (36.8%) students (Table No. I).

TABLE I PROPORTION OF STUDENTS WITH STRESS, ANXIETY AND DEPRESSION (N=304)

Medical course			
Year	Stress(n=50)	Anxiety(n=71)	Depression(n=58)
Second	20 (40.0)	29(40.9)	26(44.8)
Third	21(42.0)	31(43.7)	24(41.2)
Final	9 (18.0)	11(15.4)	8(14.0)
Total	50(100.0)	71(100.0)	58(100.0)
Engineering course			
Year	Stress(n=52)	Anxiety(n=79)	Depression(n=58)
Second	19 (36.5)	33(41.8)	19(33.3)
Third	17(32.7)	25(31.7)	21(36.8)
Final	16(30.8)	21(26.5)	17(29.9)
Total	52(100.0)	79(100.0)	57(100.0)
Grand total	102	150	115

Figures within parenthesis indicate percentages

Among the 50 MBBS students suffering from Stress, 14 (28.0%) were suffering from Severe levels and 18 (36.0%) each were suffering from Mild and Moderate levels. In case of the Engineering students, out of the 52 students suffering from Stress, 22 (42.3%) were suffering from Moderate stress, 18 (34.6%) from Mild and 12 (23.1%) from Severe levels. (Table No. II).

TABLE II PROPORTION OF STUDY SUBJECTS WITH STRESS (N=102)

Course	Mild	Moderate	Severe	Total	X ² value
					P value
MBBS(n=50)					
Second Year	10 (55.6)	03 (16.7)	07 (50.0)	20 (40.0)	2.61
Third Year	04 (22.2)	11 (61.1)	06 (42.9)	21 (42.0)	
Final Year	04 (22.2)	04 (22.2)	01 (07.1)	09 (18.0)	
TOTAL	18 (100.0)	18 (100.0)	14 (100.0)	50 (100.0)	0.27
ENGINEERING(n=52)					
Second Year	08 (44.4)	07 (31.8)	04 (33.3)	19 (36.5)	1.27
Third Year	06 (33.3)	07 (31.8)	04 (33.4)	17 (32.7)	
Final Year	04 (22.3)	08 (36.4)	04 (33.3)	16 (30.8)	
TOTAL	18 (100.0)	22 (100.0)	12 (100.0)	52 (100.0)	0.53

Figures within parenthesis indicate percentages



Out of the total 71 MBBS students suffering from Anxiety, 26(36.6%) students were suffering from Severe levels, 24 (33.8%) from moderate levels and 21(29.6%) from mild levels. In case of the Engineering courses, the numbers were 28 (35.4%), 32 (40.5%) and 19 (24.1%) respectively. (Table No. III)

TABLE III PROPORTION OF STUDY SUBJECTS WITH ANXIETY (N=150)

Course	Mild	Moderate	Severe	Total	X ² value
					P value
<i>MBBS (n=71)</i>					
Second Year	09 (42.8)	08 (33.3)	12 (46.2)	29 (40.8)	2.31
Third Year	08 (38.1)	13 (54.1)	10 (38.5)	31 (43.7)	
Final Year	04 (19.1)	03 (12.6)	04 (15.3)	11 (15.5)	0.31
TOTAL	21 (100.0)	24 (100.0)	26 (100.0)	71 (100.0)	
<i>ENGINEERING(n=79)</i>					
Second Year	09 (47.4)	15 (46.9)	09 (32.1)	33 (41.8)	0.83
Third Year	05 (26.3)	09 (28.1)	11 (39.3)	25 (31.6)	
Final Year	05 (26.3)	08 (25.0)	08 (28.6)	21 (26.6)	0.66
TOTAL	19 (100.0)	32 (100.0)	28 (100.0)	79 (100.0)	

Figures within parenthesis indicate percentages

Out of the 58 MBBS students suffering from Depression, 24 (41.3%) students were suffering from Moderate levels, 20 (34.5%) were suffering from Severe and 14 (24.2%) were suffering from Mild levels. In a total of 57 students in the Engineering course suffering from Depression, the proportion of students suffering from Severe, Moderate and Mild levels were 21(36.8%), 25(43.9%), and 11(19.3%) respectively (Table No. IV).

TABLE IV PROPORTION OF STUDY SUBJECTS WITH DEPRESSION (N=115)

Course	Mild	Moderate	Severe	Total	X ² value
					P value
<i>MBBS (n=58)</i>					
Second Year	09 (64.3)	09 (37.5)	08 (40.0)	26 (44.8)	2.61
Third Year	03 (21.5)	12 (50.0)	09 (45.0)	24 (41.4)	
Final Year	02 (14.2)	03 (12.5)	04 (15.0)	08 (13.8)	0.27
TOTAL	14 (100.0)	24 (100.0)	20 (100.0)	58 (100.0)	
<i>ENGINEERING (n=57)</i>					
Second Year	03 (27.3)	08 (32.0)	08 (38.1)	19 (33.3)	1.28
Third Year	05 (45.5)	09 (36.0)	07 (33.3)	21 (36.8)	
Final Year	03 (27.2)	08 (32.0)	06 (28.6)	17 (29.9)	0.53
TOTAL	11 (100.0)	25 (100.0)	21 (100.0)	57 (100.0)	

Figures within parenthesis indicate percentages

It was also observed that there was an increase in the occurrence of Stress and Anxiety in the MBBS students from the Second to the Third year which was followed by a decrease in the Final year. However, Depression was found to decrease in proportion from the Second to the Final years. This (Fig No.1).

In case of Engineering students, when Stress and Anxiety showed a decrease from the Second to Final year students, Depression was seen to be the highest in the Third year (Fig. No. 2).

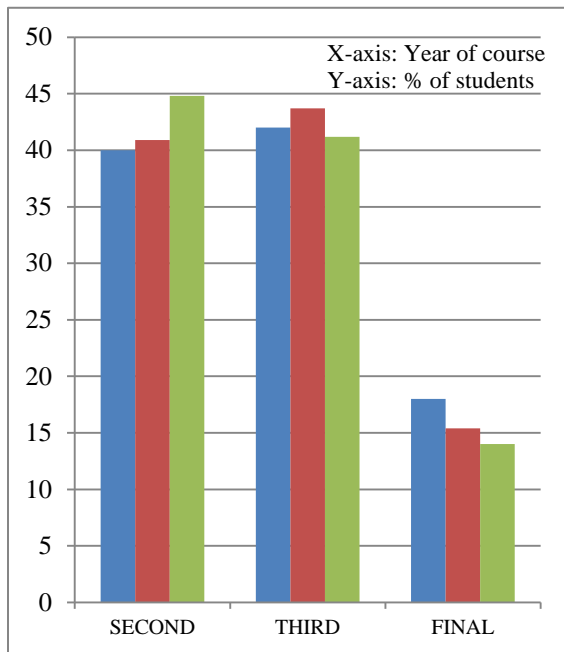


Fig 1 -Pattern of Stress, Anxiety and Depression with years of MBBS course

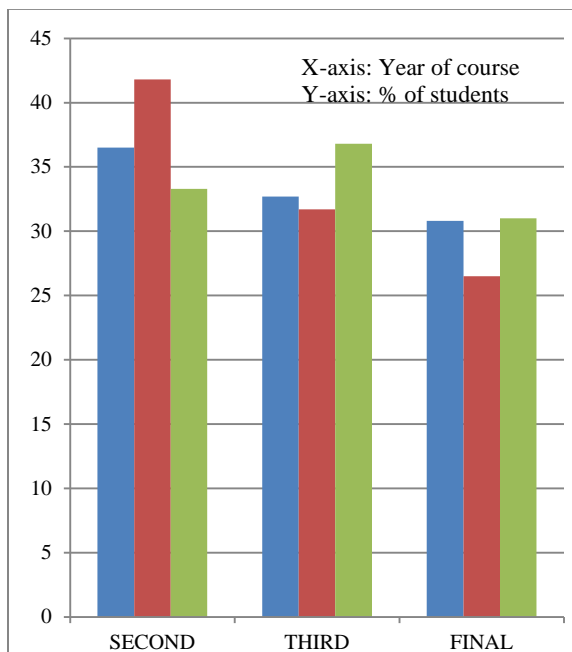
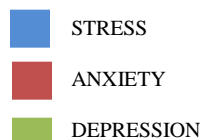


Fig 2 -Pattern of Stress, Anxiety and Depression with years of Engineering course



V.DISCUSSION:

The study reveals that both the medical and engineering students have considerable amount of perceived stress or mental pressure. In this study, 115 (37.82%) students of professional courses like MBBS and Engineering experienced various levels of Depression, which is comparable to a study done by Modi K et al [2] and other studies from Indian sub continent [4, 6, 7]. In this study it was seen that when 32.9% of Medical students suffered from stress, 34.2% of the engineering students suffered from stress. This was in contrast to a study done by Vivek B et al who found out that the proportion of stress in medical and engineering students were 25.1% and 19.7% respectively [5]. As the study tools used were different in different studies, these rates are not necessarily comparable but all point in the same direction. The proportion of stress, anxiety and depression among the 152 MBBS students was 32.9%, 46.7% and 38.2% respectively. These differ from the values obtained in the study done by Modi K et al among medical students of Gujarat [2]. The decrease in the occurrence of all the three psychosocial disorders in the Final year students of both courses could be due to the various student friendly programmes being done in the concerned colleges so as to motivate them.

VI.CONCLUSION & SUGGESTIONS:

The study concluded that out of the 304 selected students the proportion of students suffering from Stress, Anxiety and Depression was 102, 150 and 115 respectively. Stress and Anxiety was found to be the highest among Engineering students than the students of the MBBS course. However, the proportion of students suffering from Depression in both Engineering and MBBS courses were comparable. It was also observed that there was a decrease in the occurrence of all the three psychosocial disorders in the MBBS and Engineering students of the Final year. Institutes are required to proactively seek out those students who need counseling and arrange for the necessary services. Such strategies have been tried successfully abroad. Students support cells and mentorship services could be few such examples. It is also suggested that students of professional courses involve themselves in co-curricular and extracurricular activities at frequent intervals which help them to relieve their mental strain. The main limitation of



this study lies in the fact that the study was done in a single college in a small sample. More studies involving larger population must be done in this regard so as to benefit the students.

VI. ACKNOWLEDGMENT:

I would like to acknowledge the contributions made by the faculty and staff of the Dept. of Community Medicine, RajaRajeswari Medical College and Hospital towards the conduct of my study. I also acknowledge and thank all the participants of my study for their valuable time.

VIII. REFERENCES:

- [1]. WHO. Mental Health: New Understanding, New Hope. The World Health Report. World Health Organization. 2000[1]. Available at [http://www.who.int/whr/2000\[1\]/en/10.03.2003](http://www.who.int/whr/2000[1]/en/10.03.2003) accessed on 20th September 2013.
- [2]. K. Modi, D. Kumar. "Anxiety and Depression in Medical Students and its association with Coping Methods adopted by them".IJRRMS.2013;vol 32:pp 20-22
- [3]. S. H. Lovibond, P.F. Lovibond. Manual for the Depression Anxiety Stress Scales. Sydney Psychology Foundation. 1995. vol2.
- [4]. B. T. Shaikh, A. Kahloon, M. Kazmi. Students, stress and coping strategies: a case of Pakistani medical school. Educ Health (Abingdon). 2004;vol7:pp346-53.
- [5]. B. Vivek, B. Girish, R. Yugantara, Kadam, D. Alka. A study of stress among students of professional colleges from an urban area in India. Sultan Qaboos Univ Med J. Aug 2013; vol13:pp 429–436.
- [6]. T. S. Chandrashekhar, R. S. Pathiyil, V. S. Binu, C. Mukhopadhyay, B. Ray, R. G. Menezes. Psychological morbidity, sources of stress and coping strategies among undergraduate medical students of Nepal. BMC Medical Education.2007,vol7:pp26. Available at: <http://www.biomedcentral.com/11472-6920/7/26> accessed on 29th July 2014
- [7]. A. N. Supe. A study of stress in medical students at Seth G.S. Medical College. J Postgrad Med. 1998;vol 44: pp 1-6.
- [8]. Narasappa Kumaraswamy. Academic Stress, Anxiety and Depression among College Students- A Brief Review. International Review of Social Sciences and Humanities.2013;vol 5: pg135-143
- [9]. Singh, Ajit and Lal, Amar and Singh, Shekhar. Prevalence of Depression Among Students of a Private Medical College in India. Online Journal of Health and Allied Sciences.2011.available at [http://www.cogprints.org/725\[1\]/](http://www.cogprints.org/725[1]/) accessed on 29th July 2014