

## Study on Stress, Anxiety and Depression in First year M.B.B.S Students

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### Abstract

**Background:** Medical students are constantly exposed to stress which when present in a small amount is beneficial as it brings out the potential of the student; but a lot of stress is injurious to the well being of the student as it exerts a negative effect on the mental health, physical health and academics of the student. **Objective:** To study stress, anxiety, and depression levels perceived by the 1<sup>st</sup> year M.B.B.S students. **Materials and Methods:** A cross-sectional study was done at Andhra Medical College from November 2020 to December 2020. This Study included 1<sup>st</sup> year M.B.B.S Students who satisfied the inclusion and exclusion criteria and were willing to give consent. Information regarding Age, Gender, Place of residence (hostel/day scholar), Motivation to take M.B.B.S course (Self-interest / Family pressure), Socioeconomic status using Kuppuswamy's socioeconomic status scale were collected. DASS -42 questionnaire was given to the students which was used to assess the stress, anxiety, and depression levels. The data was entered into Excel 2016 and SPSS version 21 was used for analysis. Independent t-test and ANOVA tests were used to find the association between socio-demographic characteristics and DASS scores. **Results:** A total of 108 1<sup>st</sup> year M.B.B.S students participated in the study, belonging to the age group 18 – 20 years. The percentage of females was 55.6%. 95.4% of the students took the course with self-interest. 57.4% of students were residents of the hostel. The mean stress, anxiety and depression score was found to be  $12.45 \pm 5.92$ ,  $4.98 \pm 2.81$ ,  $5.31 \pm 3.42$  respectively in this study. In this study, 49% of students were found to be in the mild stress category. **Conclusion:** This study showed a high prevalence of stress and a considerable amount of anxiety and depression among 1<sup>st</sup> year M.B.B.S students. A student help desk comprising of a psychologist, psychiatrist, parent representative and a senior faculty member can be formed who will help the students in addressing their negative emotional states.

**Keywords:** Stress, Anxiety, Depression, 1<sup>st</sup> year M.B.B.S students.

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### INTRODUCTION

Psychological stress is defined as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" by Lazarus and Folkman (1984) [1]. Stress is a constant companion in today's world. Medical students are no exception. Life in a medical college is quite challenging. The First year M.B.B.S student is exposed to stress because of the transition from Intermediate course to the Undergraduate Graduate course; added to this is the vast M.B.B.S curriculum, peer pressure, exposure to a new environment, busy schedule, long lecture hours. In the First year of M.B.B.S, students have 3 basic subjects which are Anatomy, Physiology and Biochemistry, in which students learn in detail about the structure and functioning of the human body at cellular and tissue levels. Learning and understanding

the concepts in detail causes mental stress to the student. Hans Selye, who is known as the Father of Stress Research, said that unless met by adequate adaptive responses, anything that causes stress endangers life [2]. Stress amongst medical students is often overlooked [3]. Among medical students there is a considerable amount of stress, anxiety, and depression [4]. Studies conducted on medical students have shown that stress is associated with anxiety and depression [5]. Anxiety, if not tackled may negatively impact the well-being of an individual and impair their academic performance. Some amount of anxiety is beneficial to the student as it helps out in bringing out the potential of the student but anxiety if unchecked may lead to a decrease in performance. The long-term effects of unchecked and untreated Anxiety and Depression may have deleterious effects on the individual's personal and professional life. Distress among medical students can

lead to substance abuse, broken relationships, suicide and attrition from the profession [6]. Socio-economic status is an important determinant that affects the medical student's admission process because socioeconomic disadvantage is a current handicap [7]. Because of the disparity in the socio-economic status among students, sometimes it might cause students to miss out on opportunities that can help them to learn better. We undertook this study to determine the stress, anxiety and depression levels perceived by First Year M.B.B.S students.

## MATERIALS AND METHODS

### Study Design

This was a cross-sectional study conducted among 108 first-year M.B.B.S students of Andhra Medical College. The study was conducted from November 2020 to December 2020.

### Inclusion Criteria

First-year M.B.B.S students belonging to the age 18 years and above; students willing to give consent for the study.

### Exclusion Criteria

Students with a history of psychiatric illness and/ or on psychiatric treatment were excluded from the study.

### Ethical Consideration

Ethical committee approval was taken before the commencement of the study and written informed consent was taken from the participants.

### Study Procedure

Information regarding Age, Gender, Place of residence (hostel/day scholar), Motivation to take M.B.B.S course (Self-interest / Family pressure), Socioeconomic status using Kuppuswamy's socioeconomic status scale modified for the year 2007 [8] were collected. The Kuppuswamy's socio-economic status scale modified for the year 2007 is based on education, occupation of the head of the household and family income per month (modified for 2007). The individual is asked to select the option in the three parameters. The score is calculated by adding all the individual scores obtained in the three parameters. Based on the final total scores, the socio-economic class is given as Upper, Upper – Middle, Lower – Middle, Upper – Lower and Lower. DASS -42 questionnaire [9] was given to the students which were used to assess the stress, anxiety and depression levels. All the students who gave consent for the study were briefed about the

questionnaire and their doubts were duly clarified. The copies of the DASS- 42 questionnaire were distributed to the students. The DASS- 42 is a 42-item questionnaire designed to measure the negative emotional states of depression, anxiety and stress. Each of the three DASS scales contains 14 items, divided into subscales of 2-5 items with similar content. The Depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia, and inertia. The Anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The Stress scale is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive, and impatient. Individuals are asked to use 4-point severity/frequency scales to rate the extent to which they have experienced each state over the past week. Scores for Depression, Anxiety and Stress are calculated by summing the scores for the relevant items. The score for each individual over each subscale is then assessed as per the severity – rating index of DASS scoring.

## STATISTICAL ANALYSIS

The data was entered into Excel 2016 and SPSS version 21 is used for analysis. Continuous variables are represented as Mean  $\pm$  SD and categorical variables are represented as frequency (percentage). Independent t-test and ANOVA tests are used to find association between Socio-demographic characteristics and DASS score.

## RESULTS

Total of 108 students belonging to 1st year M.B.B.S participated in the study belonging to the age group 18 – 20 years. As shown in Table 1 below, out of the 108 students, 47 were 18 years old, 46 were 19 years old and 15 were 20 years old. Among the 108 participants, 60 were female ( 55.6%) and 48 were male ( 44.4%). 103 students took the M.B.B.S course with self-interest and 5 selected the course on account of family pressure. 62 students out of the total 108 students were residents of the hostel and the remaining 46 were day scholars. Based on the Kuppuswamy's socio-economic status scale modified for the year 2007, 79 students comprising 73.1% of students belonged to upper socio-economic class, 25.9% belonged to upper-middle and 0.9% belonged to lower middle class; the majority of the students belonged to upper socio-economic class.

**Table 1: Sociodemographic distribution of students**

Variable	Frequency	Percentage
<b>Age (in years)</b>		
18	47	43.5
19	46	42.6
20	15	13.9
<b>Gender</b>		
Male	48	44.4
Female	60	55.6
<b>Interest</b>		
Self	103	95.4
Family pressure	05	4.6
<b>Stay</b>		
Hostel	62	57.4
Day scholar	46	42.6
<b>Socioeconomic status</b>		
Upper class	79	73.1
Upper Middle class	28	25.9
Lower Middle class	01	.9

Table 2 shows the distribution of severity of Stress, Anxiety and Depression. The table shows that Out of 108 students, 51 of the students were found to have normal levels of stress, 53 were found to have mild stress and 2 students were found to have moderate and severe stress respectively. 26 students were found to have mild anxiety, 2 were found to have moderate

anxiety. Among the 108 students, 11 students had mild depression. The mean stress, anxiety and depression score was found to be  $12.45 \pm 5.92$ ,  $4.98 \pm 2.81$ ,  $5.31 \pm 3.42$  respectively in this study. In this study, 49% of students were found to be in the mild stress category and 24.1% of the students were in the mild anxiety category.

**Table 2: Distribution of severity of stress, anxiety and depression**

DASS Score					
	Normal	Mild	Moderate	Severe	Mean $\pm$ SD
<b>Stress n (%)</b>	51 (47.2%)	53 (49%)	02 (1.9%)	02 (1.9%)	$12.45 \pm 5.92$
<b>Anxiety n (%)</b>	80 (74 %)	26 (24.1%)	02 (1.9%)	00 (0%)	$4.98 \pm 2.81$
<b>Depression n (%)</b>	97 (89.8%)	11 (10.2%)	00 (0%)	00 (0%)	$5.31 \pm 3.42$

Table 3 shows the association between socio-demographic characteristics and DASS Score. On comparing Stress, Anxiety and Depression scores ( DASS Scores) with respect to age ( 18, 19, 20 years), Gender ( Male, Female ), Motivation to take M.B.B.S course ( Self – interest / Family Pressure ), Place of residence ( Hostel / Day scholar ) and Socioeconomic status, the p-value was found to be insignificant in all the categories. The mean value of stress in males was  $13.15 \pm 5.76$  and in females was  $11.90 \pm 6.03$ . The

mean value of anxiety in males was  $4.81 \pm 2.98$  and in females was  $5.12 \pm 2.69$ . The mean value of depression in males was  $5.63 \pm 3.01$  and in females was  $5.07 \pm 3.72$ . Among the students residing in the hostel, the mean value of stress, anxiety and depression was found to be  $12.32 \pm 5.72$ ,  $5.29 \pm 2.82$  and  $5.66 \pm 3.64$  respectively. Among the students who were day – scholars, the mean value of stress, anxiety, and depression was found to be  $12.63 \pm 6.23$ ,  $4.57 \pm 2.77$ , and  $4.85 \pm 3.07$  respectively.

**Table 3: Association between Socio-demographic And DASS score**

Variable	Stress	Anxiety	Depression
<b>Age (in years)</b>			
18	$11.43 \pm 6.64$	$4.94 \pm 2.88$	$4.79 \pm 3.39$
19	$13.46 \pm 4.96$	$4.91 \pm 2.83$	$5.70 \pm 3.29$
20	$12.6 \pm 6.04$	$5.33 \pm 2.69$	$5.80 \pm 3.87$
<b>P-value</b>	.255	.874	.373
<b>Gender</b>			

<b>Variable</b>	<b>Stress</b>	<b>Anxiety</b>	<b>Depression</b>
Male	13.15 ± 5.76	4.81±2.98	5.63±3.01
Female	11.90 ± 6.03	5.12±2.69	5.07±3.72
<b>P-value</b>	.279	.579	.402
<b>Interest</b>			
Self	12.52±5.94	4.92± 2.78	5.38±3.45
Family pressure	11.00±5.96	6.20±3.49	4.00±2.55
<b>P-value</b>	.576	.323	.381
<b>Stay</b>			
Hostel	12.32±5.72	5.29±2.82	5.66±3.64
Day scholar	12.63±6.23	4.57±2.77	4.85±3.07
<b>P-value</b>	.791	.186	.223
<b>Socioeconomic status</b>			
Upper class	12.44±5.69	5.23±2.65	5.23±3.48
Upper Middle class	12.48±6.62	4.31±3.16	5.55±3.28
<b>P-value</b>	.976	.134	.665

## DISCUSSION

In this study, we attempted to assess stress, anxiety and depression levels in First-Year M.B.B.S students by using DASS – 42 Questionnaire. Many previous studies used DASS-42 Questionnaire to assess the stress, anxiety and depression levels perceived by M.B.B.S students [10-12]. 52.8% of the students showed stress of different grades (mild, moderate, severe). The study done by Smita Mokal *et al.*, showed a high prevalence of stress among First-Year M.B.B.S students [13]. In a previous study done A N Supe, a considerable amount of stress was observed in medical students [14]. In this study, the amount of stress, anxiety was comparatively higher than Depression. A similar result was observed in the previous study [15]. In a study done by Sattar MA *et al.*, the prevalence of Depression in First-Year M.B.B.S students was found to be 18.82% [16]. There was not much difference among the stress, anxiety and depression levels perceived by Male and Female students. In a study done on first-year undergraduate medical students by Priya P Roy *et al.*, there was no significant difference in anxiety levels perceived by male and female students [12]. In a study done in a public medical college in Bangladesh, there was no significant association was found between stress, anxiety and depression levels and place of residence (home/hostel) [17].

## CONCLUSION

It is the need of the hour to make medical students, parents and faculty aware of the negative consequences of high levels of stress, anxiety and depression perceived by medical students. Counseling should be given to the students before admission to the course and after admission to the course. A student help desk comprising of a psychologist, psychiatrist, parent representative and a senior faculty member can be formed who will help the students in addressing their negative emotional states. Students should be taught appropriate coping strategies which will help them ride over the tide when they are stressed.

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