

Comparison of Levels of Stress in Different Years of M.B.B.S. Students in A Medical College - An Observational Study

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ABSTRACT

Introduction: Stress in medical students can't be ignored as it sometimes leads to frustration and suicidal tendency. This study was aimed to find out the prevalence and to compare the level of stress in different years of MBBS medical students. Further we also tried to find out the probable causes in different years of MBBS students so that we can take early intervention in right direction to minimize the stress depending upon the cause.

Material and Methods: MBBS students from different years participated in this study. By using the Kessler Psychological Distress Scale (K10) the prevalence and the level of stress of were found out. Comparison of level of stress in different academic year was done by Kruskal-Wallis One Way Analysis. Multiple comparison of stress among different academic year was analysed by Dunn's Method.

Results: The total prevalence of stress in second year was 46.15% and the prevalence of stress in final year was found to be 85.93%. It was found that prevalence of mild stress was higher among all the years of MBBS. Also severe stress in some students can't be ignored completely. When we compared levels of stress in different years of MBBS, we found that there was a statistically significant difference in the level of stress among all the years of MBBS students with the P value less than 0.05. It was further evaluated by Dunn method which showed that level of stress in final year students was statistically significant as compared to second year and third year.

Conclusion: In all the years of MBBS students mild level of stress was more common. When compared, final year students found to be more stressful than second and third year. All these findings suggested that there is need to reduce the stress in medical students in all the four years of MBBS study and enroll them for stress management program.

Keywords: Dunn's Method, k10 kessler scale, kruskal-wallis, MBBS, students, stress

INTRODUCTION

Anything that poses a risk or a threat to our well-being is a stress. Many people, around the world suffer from many kind of stressors. Medical students are also not excluded from this. As history indicates there were increased number of cases of frustration, drop out and suicidal tendency among medical students. Time has come to know the level of stress and to find out causative factors of stress in medical students.

Presence of stress make medical student lonely, introvert. It may also affect their cognition, health. Medical students are the ones who will become future physicians and more than this they are responsible individuals in the society and health system. Thus, it is important for medical students to be stress free.

Various studies on medical students have been done across the years to study stress and its effects.^{1,2} Many studies among these tried to find out level of stress in first year of MBBS students.^{3,4} There is need to find out and to compare the stress levels

among different years of MBBS course along with different causative factors which was rarely studied by researchers. So that accordingly suitable measures can be taken to decrease the stress level.

So this study was aimed to compare level of stress in different years of MBBS students. We also tried to find out causes of stress in different year of MBBS students. Complete removal of the stress or stress factors is nearly impossible, but with the knowledge level of stress in different years and causative factors we can introduce timely stress management programmes, counseling, small group discussion along with routine psychological testing of the students. Also various stress relieving activities like college weeks, class picnics and intercollegiate competitions can sometimes play a major role in stress relieving for medical students

MATERIAL AND METHODS

Ethics committee approval was taken to conduct the study. First year students were excluded from the study as per Ethics Committee's suggestion. Medical students from second year to final year of M.B.B.S. course were selected for the study. Any student who has a known psychiatric disorder or taking any antipsychotic, antidepressant drugs were excluded from the study. Students having exam within two months of the day of study were also be excluded to minimize the bias related to exam stress.

The prevalence and level of stress was determined by using the "Kessler Psychological Distress Scale (K10)."⁵ It involves 10 questions with a five level response scale. Depending on the responses marked by the students we can measure the level of psychological distress.

To conduct the study, selected students were called on particular day. They were explained in brief about the study. Written informed consent was taken from each student. Confidentiality and anonymity was maintained about the student's name and academic year.

They were properly instructed about filling of the K10 questionnaire. Additional questions were written on a separate sheet of paper to find out the reasons of stress and distributed to each student. After 20 minutes, questionnaire along with the

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Year of study	Students having stress	Level of stress		
		Mild	Moderate	Severe
Second (first semester)	46.15	58.33	33.33	8.33
Second(third semester)	47.36	51.85	35.18	12.28
Third (first part)	62.19	43.13	33.33	23.52
Final (second part)	85.93	34.54	40	25.45

Table-1: Prevalence and level of stress in different years of MBBS in Percentage

Year of the study	Mean \pm St. deviation	f-value	P-value
Second(first semester)	18.94 \pm 5.96	20.113	< 0.05*
Second(third semester)	19.61 \pm 6.62		
Third (first part)	23.18 \pm 8.14		
Final (second part)	26.92 \pm 7.61		

*P value less than 0.05, statistically significant

Table-2: Comparison of level of stress in different academic year

Comparison among different groups	P < 0.05	Whether difference is significant
4 vs 1	Yes*	significant
4 vs 2	Yes*	significant
4vs 3	Yes*	significant
3 vs 1	Yes*	significant
3 vs 2	Yes*	significant
2 vs 1	no	Not significant

Table-3: Multiple comparison of among different academic year

filled sheet of paper were collected.

Sample size: Total 400 students from different years of M.B.B.S. course of who fulfilled the inclusion criteria were selected for the study. But out of that 338 students were actually participated in the study as follows,

- 2nd year (first semester) – 78 students
- 2nd year (third semester)- 114students
- 3rd year- 82 students
- Final year- 64 students

STATISTICAL ANALYSIS

Data was entered in Microsoft Excel and analyzed using the SPSS software (Version 20). Total prevalence and level of stress were calculated as a percentage of total number of students participated. Comparison of level of stress in different academic year was done by Kruskal-Wallis One Way Analysis. Multiple comparison of among different academic year was analysed by Dunn's Method.

DISCUSSION

World Health Organization defines stress as “the reaction people may have when presented with demands and pressures that are not matched to their knowledge and abilities and which challenge their ability to cope”.

Medical students are also not spared with the impact of stress and stress in medical students has been recognized for a long time. A meta-analysis of the American JAMA magazine suggested depressive symptoms in 21 % to 43 % of all medical students.⁶ Day by day stress in medical students is increasing. Increasing stress leads to anxiety disorders, suicidal tendency and many more psychological impacts on medical students those who couldn't cope with this.⁷ Excessive stress in medical students causes sleeping disorders, decreased attention, reduced

concentration, temptation to cheat in exams, increased incidence of errors, and improper behavior socially.⁸ Furthermore, stress in medical students can break the stability of the student's health and can causes headaches, gastrointestinal disorders, coronary heart disease, absenteeism, self-medication, and the consumption of drugs and alcohol.⁷ It is notable that these risks continue throughout the training, also affecting resident physicians particularly with regard to depressive symptoms.⁶ Among German medical students 23.5% showed clinically relevant depressive symptoms.⁹ So this study was conducted to compare the level of stress in different year of MBBS. As per table-1 number of students having stress was maximum in final year and prevalence of stress increases as the course progresses. While comparing level of stress we found that mild stress was common in second and third year but mild and moderate level of stress was common in final year.

As per table-2 while comparing level of stress in different years by Kruskal-Wallis one way analysis it was found that this test was statistically significant ($p < 0.05$). This indicates that one sample stochastically dominates (statistically significant) over other sample, but this test does not identify where and how many pairs of groups this stochastic dominance occurs. So we carried out Dunn's test to analyze the specific sample pairs for stochastic dominance as shown in Table-3.

We found out that the level of stress was more and highly significant in final year as compared with other years as shown in table-3. Level of stress was significant in final year compared to third year, second year (third semester). In third year level of stress is significant compared to second year (third semester) and second year first semester). Similar results were found in study conducted by Dr. A. N. Supre¹⁰ and Dr. Rahul Surve at Aurangabad.¹¹ But interestingly Hamza M.¹ found that level of stress decreases as year of the study increases. This finding is contrary to our study. Level of stress was not statically significant when second year (third semester) compared with second year (first semester), this could not be explained in our study.

We tried to find out the reason of stress by different questionnaire. Different reasons and findings of stressors are as shown in table-4. We found out that lengthy syllabus and busy schedule were the main stressor in second year (first semester), second year (third semester) and third year students. Another causative factor in the same year was, need to meet required attendance.

Reason of stress	Academic year of students			
	Second year (first semester)	Second year (third semester)	Third year (first part)	Final year (second part)
Staying at hostel	23.07	29.82	24.39	23.43
Busy schedule	64.10	43.85	46.34	31.25
Harassment by seniors	01.28	06.14	02.43	00.00
Harassment by teachers	02.56	12.28	09.75	14.06
Fear of teachers	16.66	19.29	14.63	23.43
Need to meet the required attendance	41.02	30.70	29.26	23.43
Financial problems for paying fees, books etc	05.12	12.28	10.97	10.93
Relationship issues	14.10	23.68	19.51	23.43
Tough syllabus	35.89	30.70	36.58	23.43
Lengthy syllabus	60.25	74.56	64.63	39.06
Strong competition between colleagues	24.35	27.19	26.82	06.25
Missing home and parents while at hostel	25.64	30.70	25.60	31.25
Roommate problems while at hostel	10.25	10.52	10.97	07.81
Other reasons:	20.51	25.43	07.31	09.37

Table-4: Reason of stress in different years of MBBS in percentage

Similar results were found in the study conducted by Dr. Rahul Surve, Aurangabad.¹¹ Academic related stress also found to be significant in study done by Dr. A N, Supe.¹⁰ But in final year along with lengthy syllabus and busy schedule, missing home and parents when at hostel play a very important role as a stressor.

From the study it was clear that stress in medical students is increasing and can't be ignored. Various programs should be implemented to reduce the stress burden from the first year. Especially medical council of India should look into the matter to reduce the lengthy syllabus appropriately and introduce some stress management programs in the curriculum. Sometimes small group teaching is also helpful to reduce the stress in medical students. Various studies showed that those students who participate in extracurricular activities have lower states of anxiety than those who are concentrated only on their studies.¹² Some medical schools have made changes such as reducing the workweek, instituting curricular reforms such as having shorter classes and providing psychological services.¹³

CONCLUSION

Level of stress increases as the course of MBBS progresses. Many students are suffering from mild to moderate level of stress. Severely stressed students are also present in different years (though less) they can't be ignored completely as in future it may leads to depressive symptoms. Final year students found to be more stressful than third and second year. Lengthy syllabus and busy schedule are the two important causative factors for stress in different years of MBBS students. All these findings raises an alarm related to stress in medical students and insists for introducing early interventional programs to reduce the stress.

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