

STUDY OF PSYCHOLOGICAL STRESS AMONG UNDERGRADUATE MEDICAL STUDENTS OF GOVERNMENT MEDICAL COLLEGE, SURAT

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ABSTRACT

Background: Psychological stress among medical students is common as compared to other professional courses. The prevalence of perceived stress among medical students affects not only their academic performances but also to some extent their health.

Objective: The present study was undertaken to determine the prevalence of self – perceived psychological stress among Under-Graduate medical students, to identify probable factors responsible for it and to suggest possible interventions.

Materials and Methods: A cross sectional study using self administered questionnaire was conducted among a sample of undergraduate students chosen from all the years of MBBS who were enrolled at Govt. Medical College Surat at the time of study period.

Results: In this study 3.12% of the students reported having no stressor experience, 55.6% reported mild to moderate stressor experience and 41.2% with severe stressor experience. Major factors responsible for stress identified in this study are increased load towards exam, vast syllabus, not getting expected marks, less time for repeated learning and procrastination

Conclusion: This study has found that majority of undergraduate students experience stress. Both academic and emotional factors are responsible for this stress. Proper guidance and counseling by faculties may help to improve the present scenario.

Key Words: Psychological Stress; Undergraduate Medical Students

INTRODUCTION

Stress is a term that refers to the sum of physical, mental and emotional strains or tensions on a person. The term 'stress' was first employed in the 1930's by the endocrinologist Hans Selye.^[1] Stress also indicates the consequence of the failure of an organism-human or animal to respond appropriately to emotional or physical threats whether are either actual or imagined.^[2] Selye published in 1975 a model dividing stress into eustress and distress. Where stress enhances function (physical or mental, such as through strength training or

challenging work), it may be considered eustress. Persistent stress that is not resolved through coping or adaptation, deemed distress, may lead to anxiety or withdrawal (depression) behavior.^[3]

The academic atmosphere in medical colleges is very stressful which promotes competition among learners rather than co-operation. High level of stress among medical students has been reported in various studies.^[4-6] The academic demands of medical education are placed on students at time of their life when they are also involved in issues related to life style and

carriers. It is also reported that stress during medical education can affect the patient care negatively.^[7] Various stress factors reported in studies among medical students are academic demands, exams, inability to cope, helplessness, increased psychological pressure, mental tension and too much work load.^[8] The transition from pre-clinical to clinical training has also been identified as a crucial stage of medical school regarding student stress.^[9] Different studies conducted worldwide among medical students have reported prevalence of stress ranging from 27-73%.^[10-15] Retrieving knowledge about presence of stress is therefore important in itself and if found should be given attention for timely intervention. Studies on psychological morbidities are very few in our state and not many have been conducted at the medical colleges in South Gujarat region. This study therefore has been planned to identify the prevalence of psychological stress and possible factors responsible for it among undergraduate medical students. So that appropriate intervention strategy can be proposed to reduce psychological stress and enhance student's abilities.

METHODS

A Cross sectional study using quantitative methodology was conducted among undergraduate medical students of Govt. Medical College, Surat. The target population was undergraduate students of years (1st, 2nd-phase I, 2nd-final phase, 3rd-1st and 3rd-final) currently enrolled in Govt. Medical College, Surat during the study period. Taking into consideration the prevalence of anxiety and depression from various studies conducted previously at approximately 40%, the sample size has been calculated using the statistical formula $4pq/L^2$ (where allowable error has been assumed as 20%).^[10,13,14,16] Thus our sample size came as 160. Then by lottery method, equal numbers of students were chosen from each year as the number of enrollment in first year was the same since last five years in undergraduates. Training was given to each researcher and the proforma was revised according to results of pilot study. Data

collection spanned over the month of November 2010. Verbal consent was obtained from the students before handing over the questionnaire. The data for present study was obtained through a special designed self – reporting questionnaire related to psychological stress with each stress factor having grading from 1 to 5 according to severity. The questionnaire consisted of 25 item list which was administered to a sample of 160 students for study. The options given were 'strongly disagree', 'disagree', 'neutral', 'agree' and 'strongly agree'. The response strongly disagree had assigned a value of zero and strongly agree the highest score five. Score less than or equal to 3 is considered as no stressor and score greater than 3 is considered as a stressor for individual factor. Pre – tested, self administered, anonymous questionnaire were provided to the individual students chosen from each year. They were requested to fill the Proforma with full assurance about the confidentiality and anonymity that data would be used only for scientific purpose. The questionnaire was then administered in 160 students and analyzed. The total score for all the questions ranged between 0 and 125. A score less than 54 is no stressor experience, a score between 55 and 81 indicates mild to moderate stressor experience and a score between 82 and 125 denotes severe stressor experience. Data were entered in excel worksheets and analyzed using the EPI 6. The analysis part composed of 2 parts, Descriptive and analytical part. Descriptive statistics such as frequency, percentage was applied for general characteristics, prevalence of stress and various factors responsible for stress. Analytical statistics such as Chi-square Test was used to determine the association between various stress factors and presence of stress. Testing of hypothesis was performed at 95% level of significance.

RESULTS

Total 160 students were enrolled for the study. Out of total these 160 students, 96.8% of students have reported stress. Among them 55.6% had mild to moderate stressor experience and 41.2% had severe stressor experience.

Presence of severe stress was highest among the final year students (28.79%) and lowest among the second year phase I students (12.12%) as compared to the students of other years.

Table-1: Distribution of Level of Psychological Stress among Undergraduate Medical Students (N=160)

| Stress Experienced | Frequency | Percentage (95% CI) |
|-------------------------|-----------|----------------------------|
| No Stress | 5 | 3.12% (0.0135 - 0.0711) |
| Mild to Moderate Stress | 89 | 55.6% (0.4789 - 0.6311) |
| Severe Stress | 66 | 41.2% (0.3391 - 0.49) |

Distributions of important stressors experienced by the students were increased load towards exam by 80.62% students, vast syllabus by 70% students, even after trying best, not getting expected marks by 68.2% students, less time for repeated learning by 63.2% students, procrastination by 67.7% students, fear of failure in exams by 59.3% students. When the relationship between level of stress and gender

was determined using appropriate statistical method, it was found that there is no significant difference of stress experience among male and female. (p value 0.19) The level of stress was also not significantly different among students who were living in hostel and those who were local. (p value 0.90). Among the 1st year students 87.5% and among the final year students 61% responded that vast syllabus was a major stressor. In response to tough topics as a stressor, 75% of final year students and 60% of first year students enlisted it as a stressor. 71.8% of final year students and 62.5% of second year phase I students responded that difficulty in covering portions daily was a stress factor. Fear of failure in exam was listed as a stress factor among 53% of first year students and 75% of final year students. Lack of time management skills were high among 3rd year phase I students (68.75%). Tired feeling after the tight schedule from 9 am to 5 pm was high in 1st year students (56%). Habit of postponing routine work (Procrastination) was high in 2nd year students (53.45%). Thought of dropping out from exams were high in final year students (25%).

Table-2: Year Wise Distribution of Psychological Stress among Undergraduate Medical Students (N=160)

| Year of MBBS | No Stress | Mild to Moderate Stress | Severe Stress |
|--|------------------------------|----------------------------------|----------------------------------|
| 1st Year | 0 (0) | 17 (19.1%) [0.1228 - 0.2848] | 15 (22.73%) [0.1429 - 0.3417] |
| 2nd Year (Phase I) | 2 (40%) [0.1176 - 0.7693] | 22 (24.72%) [0.1693 - 0.346] | 8 (12.12%) [0.0627 - 0.2214] |
| 2nd year (Final Phase) | 0 (0) | 18 (20.22%) [0.1319 - 0.2971] | 14 (21.21%) [0.1308 - 0.3215] |
| 3rd Year (Phase I) | 3 (60%) [0.2307 - 0.8824] | 19 (21.35%) [0.1412 - 0.3095] | 10 (15.15%) [0.0844 - 0.2569] |
| 3rd Year (Final Year) | 0 (0) | 13 (14.61%) [0.0874 - 0.2341] | 19 (28.79%) [0.1927 - 0.4064] |
| Total | 5 (100%) | 89 (100%) | 66 (100%) |

Figures in the square brackets indicate 95% CI of proportions

Table-3: Gender wise Distribution of Psychological Stress among Undergraduate Medical Students (N=160)

| Gender | No stress | Mild to Moderate stress | Severe stress |
|---------------|------------------------------|----------------------------------|----------------------------------|
| Male | 4 (80%) [0.3755 - 0.9638] | 40 (44.95%) [0.3503 - 0.5527] | 36 (54.55%) [0.4262 - 0.6598] |
| Female | 1 (20%) [0.0362 - 0.6245] | 49 (55.05%) [0.4473 - 0.6497] | 30 (45.45%) [0.3402 - 0.5738] |
| Total | 5 (100%) | 89 (100%) | 66 (100%) |

Figures in the square brackets indicate 95% CI of proportions (χ^2 value 3.26, P value = 0.19)

DISCUSSION

Medical education renders significant amount of stress to the students.^[10-15] In this study also 96.8% of medical students had stress. The study revealed that 41.2% of students are having severe stress which is comparable to other studies conducted at Brazil (40.2%), Iran (44%) and Malaysia (41.9%).^[17] Medical students go through not only the stress imposed by medical education but also routine everyday life stressor which may explain the level of severe stress noted among medical students. It was found in our study that gender is not associated with stress. Stress was also not associated with students' living status i.e hostel or home. So irrespective of gender and living status medical students were having stress.

Majority of the students who reported having severe stress belonged to final year (29%) and 1st year (23%). The reasons that can be attributed to the severe stress among 1st year students are language problem (as majority of students come from vernacular medium), vast syllabus, fear of failure, tight schedule and tough topics. These calls for introducing early intervention strategies so that students who are entering in the medical education system can learn to cope with the pressure induced by medical education timely. Medical Council of India also suggests foundation course of 2 months duration after admission to prepare a student to study medicine effectively.^[18] Interaction between students and faculties should be encouraged so that the signs of stress can be detected and addressed at the earliest. Prevention strategies should take into consideration the wide variety of factors that are inducing stress among students. Adding electives can also allow flexible learning options in the curriculum and may offer a variety of options including clinical electives, laboratory postings or community exposure in areas that students are not normally exposed as a part of regular curriculum. This will also provide opportunity for students to do project, enhance self directed learning, critical thinking and research abilities.^[18] It is possible that few students have already a inherent tendency of taking stress and their entry in M.B.B.S course may be aggravating it. Such students should be identified by psychological screening tests at the time of their entry only. Recreation facilities should be provided within the campus for the students as it is proved that inadequate social activity and impaired psychological health are interlinked and also that leisure activities can reduce stress among students.^[5,8] Relaxing

exercises, yoga and meditation should be studied to relieve stress among medical students.

CONCLUSION

This study has found that majority of undergraduate students experience stress. Both academic and emotional factors are responsible for this stress. Proper guidance and counseling by faculties may help to improve the present scenario.

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