

Prevalence of Stress and Coping Mechanisms Among Medical Students in A Private Medical College , Kochi,Kerala



Medical Science

KEYWORDS : medical students, stress, coping mechanisms

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ABSTRACT

Introduction: Stress is the body's reaction to a change that requires a physical, mental or emotional adjustment or response. It is defined as a state of psychological and physiological imbalance resulting from the dispar Persistent and excessive stress can impair students academic achievement and personal or professional development. **Methodology:** A cross sectional study was conducted among 173 medical students in a tertiary medical college in India. Levels of stress were assessed by using the standardized questionnaire proposed by John D and Catherine T Macarthur and coping mechanisms were assessed by using 'Brief Cope' questionnaire. SPSS 20.0 version was used to analyze data. A p value less than 0.05 was considered significant. **Results:** Prevalence of mild, moderate and severe stress were 88.4%, 8.7% and 2.9% respectively. The most commonly used coping mechanisms among medical students were acceptance and religion and the least used mechanisms were substance abuse, denial, disengagement and humor.

Claude Bernard noted that the maintenance of life is critically dependent on keeping our internal milieu constant in the face of a changing environment. Cannon called this "homeostasis." Selye used the term "stress" to represent the effects of anything that seriously threatens homeostasis¹. Tertiary medical training has always been regarded as being highly stressful. Many studies have described the stressors of medical training and the associated negative consequences on the mental and physical health of medical students⁽²⁻⁵⁾. Stress is good when the situation offers an opportunity to a person to gain something. It acts as a motivator for peak performance. Stress is negative when a person faces social, physical organizational and emotional problems. Persistent stress can impair students' academic achievement and personal or professional development. Stress is also associated with anxiety and depression which might lead to suicide, alcohol use and drug abuse. Coping mechanisms are ways to which external or internal stress is managed, adapted to act upon. It is defined as constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing.

This study is done to assess the prevalence of stress among undergraduates in a private medical college and factors associated with it.

Materials and methods

The cross sectional study was done in the undergraduate medical students of a tertiary medical college in Kerala, India. Based on a prevalence of 69.79% from a study⁽⁶⁾ done in medical students of MES medical college, Kerala, a sample size of 173 was estimated using the formula $4pq/l^2$.

The study was conducted 2 months before the examination period so that the actual examination stress would not

affect the responses of the students. All medical students were approached during their leisure hour and requested to complete a questionnaire which consists of 3 parts . a. Socio demographic profile b. a ten item standardized questionnaire proposed by John D and Catherine T Macarthur was used to find stress levels c. a 28 item brief cope questionnaire which assess coping mechanisms. The students were allowed to respond in their own time and privacy. Those who are willing to give consent and who are not appearing for exams within two months were included in the study. Those who were not present on data collection day and students who are investigators of the study were excluded. Ethical clearance was obtained from institutional ethical committee. Data was entered, checked for entry errors, cleaned and analyzed using SPSS version 20.0 statistical software. Data was interpreted using an alpha set at 0.05 and confidence interval of 95%. Chi-square test was used to observe and quantify an association between the categorical outcome and different study variables. A p-value of less than 0.05 was considered statistically significant.

RESULTS

77 (44.5%) were males and 96 (55.5%) were females among the population. Among the participants, 98 were 1st year students and 75 were 3rd year students. 46 students were Non Resident Indians. Prevalence of stress among the participants are shown in table 1.

Table:1 Distribution of respondents according to their stress levels

LEVEL OF STRESS	NUMBER (%)
Mild	153 (88.4)
Moderate	15 (8.7)
Severe	5 (2.9)

The distribution of age, gender, academic year, physical

problems and other socio demographic variables are shown in Table 2. There is statistically significant association between gender, physical activity, NRI status, mother's occupation and the stress level.

Table 2: Association between sociodemographic factors and stress level.

	High /moderate stress	Low level stress	p value
AGE 17 -19 20-28	12 (12.4%) 8 (10.5%)	85 (87.6%) 68 (89.5%)	0.706
SEX Male Female	4 (5.2%) 16 (16.7%)	73 (94.8%) 80 (83.3%)	0.019*
YEAR 1 3	12 (12.2%) 8 (10.7%)	86 (87.8%) 67 (89.3%)	0.748
SIBLINGS Yes No	15 (10.6%) 5 (16.1%)	127 (89.4%) 26 (83.9%)	0.380
NRI Yes No	11 (23.9%) 9 (7.1%)	35 (76.1%) 118 (92.9%)	0.002*
PHYSICAL ACTIVITY Yes No	7 (6.7%) 13 (18.8%)	97 (93.3%) 56 (81.2%)	0.015*
OCCUPATION OF MOTHER Home maker Employed	16 (18%) 4 (4.8%)	73 (82%) 80 (95.2%)	0.007*

DISCUSSION

Stress is a prevalent and noticeable mortality among medical students all over the world. It has been addressed in many contexts regarding associations with external factors, coping mechanisms etc. Various studies conducted in different parts of the India including Kerala⁽⁶⁾, Kolkata⁽⁷⁾ and Surat⁽⁸⁾ focused on the same issue of stress among medical students.

By assessing the levels of stress among respondents in our study we have found out that only 11.6% were high/moderately stressed, while respondents of the study conducted in Orissa⁽⁹⁾ revealed that 53% of respondents were high or moderately stressed. The association between stress and gender was consistent in the studies conducted in Surat⁽⁸⁾, Orissa⁽⁹⁾ and our study.

All the studies reveal that female respondents were more stressed than their male counter parts. While our study did not reveal any association of levels of study and stress, the study conducted in Orissa revealed that 2nd year students were more stressed than the first year students.

However a study done in Mumbai⁽¹⁰⁾ revealed that 1st year students were more stressed than the 2nd year and 3rd year students.

Other studies have not focused on associations between stress and residential statuses, physical activity and parents occupation.

In a study conducted in central Kerala⁽¹¹⁾ the respondents used self blame and humor more commonly, while acceptance and religion was commonly used by the respondents in our study.

The most commonly used coping mechanisms among medical students were acceptance and religion and the least used mechanisms were substance abuse, denial, disengagement and humour.

The highly or moderately stressed respondents used the following coping mechanisms: venting, self blame, positive reframing and use of instrumental support.

CONCLUSIONS

Stress

In the study we conducted on stress among medical students, it is found that 11.6% of the respondents were highly or moderately stressed.

Stress was found to be associated with

a. Gender, female respondents were more stressed than their male counter parts.

b. NRI respondents were more stressed than others.

c. Reduced stress levels were noted in the physically active respondents.

d. Stress was found to be more among those respondents whose mothers were home makers.

The most commonly used coping mechanisms among medical students were acceptance and religion and the least used mechanisms were substance abuse, denial, disengagement and humour.

LIMITATIONS

The study would have been better if it included 2nd year and 4th year students but they were not approached because they were appearing for annual exams.

RECOMMENDATIONS

Hence physical activity has been shown to reduce stress levels, medical students should be encouraged to be more physically active. Since NRI students are more stressed than the others, they should be given more attention. Relaxation methods like yoga, meditation can be included in curriculum.

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