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RESEARCH ARTICLE

PERCEIVED STRESS AMONG STUDENTS IN THE INITIAL YEARS OF MEDICAL EDUCATION AND ITS EVALUATION – A CROSS SECTIONAL STUDY

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ABSTRACT

Background: Medical profession is demanding and stressful due to its high competitive nature. Studies from various parts of the world have shown that medical students experience varying degrees of stress which not only affect their academic performance but their personal behavior also.
Aim and Objectives: Present study was undertaken to assess the perceived stress among medical students. An attempt is also made to find out whether they are aware of the fact that they are stressed and the cause for the stress.
Material and Methods: A cross sectional study was carried out among 106 students with the help of a Questionnaire which has 2 parts, 1st part contain demographic factors and self reporting of stress and its causes and 2nd part contain PSS questionnaire by Cohen to evaluate the level of stress.
Results: According to the Perceived stress scale, out of the 106 participants, 89 (83.9%) were found to be under stress. This includes 11 students who did not report to have stress (self reported stress). 49 students (46.2%) were under high stress according to perceived stress scale and 40 students (37.7%) had stress in the average range. Exam was reported to be the main cause of stress. Females were found to be more stressed than males.
Conclusion: The prevalence of stress is found to be very high among medical students. Extensive studies are required in this regard to find the gravity of the problem. Intervention strategies should be planned accordingly.

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INTRODUCTION

Stress may be defined as the body's non-specific response to demands made upon it, or to disturbing events in the environment (Yusoff *et al.,* 2010; Aktekin *et al.,* 2001). The degree of stress depends on how we perceive and cope with personal and environmental threats and challenges termed as the stressors (Myers, 2005).Small amount of stress is considered to be normal (Kaplan and Saddock, 2000). Infact it makes the individual more active whereas high levels of stress can cause health problems both physical and mental (Gomathi *et al.,* 2012). It can reduce students morale and may affect academic performance as well as personal development (Linn and Zeppa, 1984). A study conducted among medical students in the United Kingdom revealed that more than one-third of participants suffered from emotional disturbances as measured by the General Health Questionnaire (Firth, 1986). Stress is also found to be associated with anxiety and depression (Miller and Surtees, 1991; Shapiro *et al.,* 2000), interpersonal conflict (Rosal *et al.,* 1997), disturbances in sleep (Clark and Riekerm 1986), and poor academic performance (Linn and Zeppa, 1984). Problems in concentrating and decision making and difficulty in establishing a good rapot with patients are some other problems associated with stress (Miller and Surtees, 1991). There are studies showing connection between suicide (Niemi *et al.,* 2006), drug abuse (Hays *et al.,* 1996; Newbury-Birch *et al.,* 2000), and alcohol use (Pickard *et al.,* 2000) among medical students. Stress results when an individual is unable to cope with a perceived past, present or future situation (Lazarus *et al.,* 1984). However, the same situation which is stressful to one person may not be stressful to another person. This may be because of the individual variations (Ross *et al.,* 1999). Causes of stress can be academic pressures, social or personal problems and difficulty in coping with the vast curriculum of medical course (Yusoff *et al.,* 2010). A study among 528 medical students from Cape town, South Africa reported a number of stress factors. In that study, females were reported to have more stress than males (Wilson *et al.,* 1998). There are other studies showing association of gender with stress. Some studies reports that females are more prone to stress whereas in some other studies there is no difference between males and females (Brahmbhatt *et al.,* 2013; Cohen and Williamson, 1988). As it is a transition stage from school to professional education, many students find it difficult to cope up with the new system

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initially and the time taken by them to get adjusted also varies. So we thought of conducting the present study among students in the initial years of medical education.

MATERIALS AND METHODS

A cross - sectional study was carried out among 106 medical students of Azeezia Institute of Medical Sciences and Research, who are in their first and second year of MBBS. The study was conducted in March 2015. After getting informed consent from the participants, sampling was done using systematic random sampling method. The data were collected using questionnaires .Questionnaire had 2 parts. First part contains demographic data and questions like whether they are stressed(to know whether they are aware of the stress (self reported stress)) and the causes of stress and the second part contains 10 questions about perceived stress using a modified perceived stress scale (PSS) by Cohen. It consists of four positively stated items (items 4, 5, 7, and 8), the responses of which are reversed (e.g., 0 = 4, 1 = 3, 2 = 2, 3 = 1 and 4 = 0) and they are added to the responses of the rest of the items which gives an overall stress score. Whether there is any difference between self reported stress and the stress assessed by PSS were also assessed. Statistical analysis was done using student t test and Chi square test with the SPSS 20 version software.

RESULTS

The PSS is a questionnaire used to measure an individual's perception of stress over the past month. This questionnaire was administered in first and second year medical students and responses were obtained from 106medical students. Among these students, 70 (66%) students were females and 36 (34%) were males. The overall prevalence of stress found in this study was 83.9% using PSS. Based on the responses of the 10 questions of PSS by Cohen, PSS scores calculated (table 1). Based on PSS scores, students were divided into groups with different levels of stress. Scores upto 13 were considered to be normal, 14-20 average stress and more than 20 as having high stress. 49 students (46.2%) were under high stress according to perceived stress scale and 40 students (37.7%) had stress in the average range (figure 1).17 of them did not have any stress.

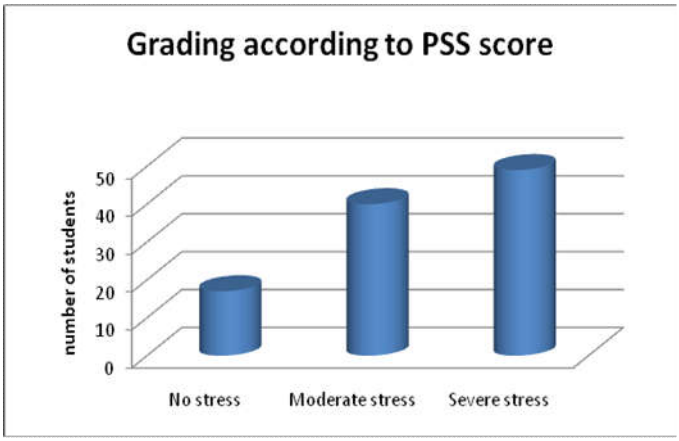

Fig. 1. Grading of stress according to PSS score

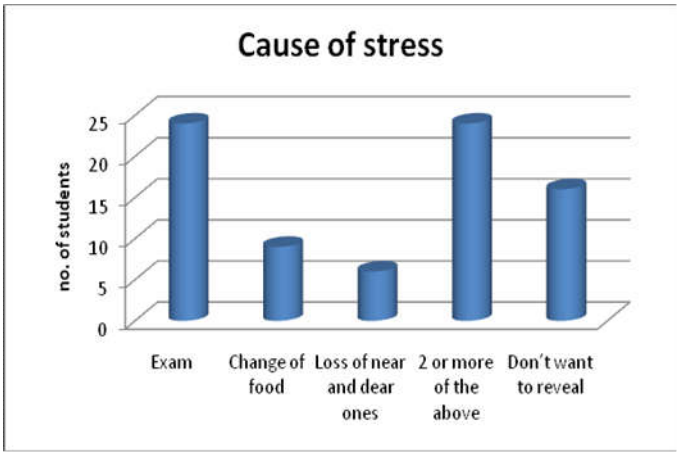

Fig. 2. Causes of stress among medical students

When the students were asked to report whether they are feeling stressed and the cause for it, 78 reported to have some form of stress (73.6%), out of which 24 had exam as the main cause of stress. For 9 of them change of food, 6 of them loss of near and dear ones and 24 of them 2 or more of these were the causes of stress. For 16 of them none of the above mentioned were the cause for the stress which they did not want to reveal (Figure-2). 11 students who did not report to have stress also had some sort of stress when PSS score was taken. In our study females were found to be more stressed than males.

Table 1. Perceived stress questionnaire and responses of participants in numbers

No.	Question	Never(0)	Almost never(1)	Sometimes(2)	Often(3)	Very often(4)
1	In the last month, how often have you been upset because of something that happened unexpectedly?	11	6	56	15	17
2	In the last month, how often have you felt that you were unable to control the important things in your life?	21	15	36	21	13
3	In the last month, how often have you felt nervous and "stressed"?	7	4	45	28	21
4	In the last month, how often have you felt confident about your ability to handle your personal problems?	5	8	44	30	19
5	In the last month, how often have you felt that things were going your way?	7	12	43	35	9
6	In the last month, how often have you found that you could not cope with all the things that you had to do?	17	15	46	18	10
7	In the last month, how often have you been able to control irritations in your life?	3	15	33	36	19
8	In the last month, how often have you felt that you were on top of things?	30	26	32	14	4
9	In the last month, how often have you been angered because of things that were outside of your control?	8	24	38	25	11
10	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	16	29	35	17	9

DISCUSSION

In the present study 83.9% students (89 students) were under stress 37.7%under moderate stress and 46.2 % were under severe stress (figure 1). This is almost similar to the results of study by Ranade *et al.,* 2015 in medical students of a college in Maharashtra who reported that 85 % of first year students had stress. In a study conducted by Solanky *et al.,* 2002 96.8% had stress whereas in a study by Supe *et al.,* 1998 in Seth G.S. medical college at Mumbai 73% had perceived stress. In our study we had 36 males and 70 females. This is because the number of females were more in 1st and 2nd year. Every year the number of females getting admission to medical course is more when compared to males may be because of high literacy rates among females in Kerala. The mean PSS score in females was slightly higher than males, however, the difference was not statistically significant. This is similar to a study conducted in India in which females were more stressed than males[19].However there is no significant difference in stress between male and female students according to Cohen (Cohen *et al.,* 1988). Out of the 78 who self- reported to have some form of stress, 24 had exam as the main cause of stress. For 9 of them change of food, 6 of them loss of near and dear ones and 24 of them 2 or more of these were the causes of stress (figure-2). 11 students who did not report to have stress also had some sort of stress when PSS score was taken. This may be because they have stress in the average range which is not causing any problems for them. But this difference between stress by PSS score and self reported stress was not significant statistically (p=0.078). As the present study indicate that the number of students with stress are more ,the students should be motivated to develop their own stress management techniques as well as exposed to the effectiveness of meditation and yoga in allieviating stress. They should be supported and taken care of by the student support system and health promotion programs like in western countries (Lee *et al.,* 2001; Wolf *et al.,* 1988).

Limitations of the study: As the study was conducted in the first and second year students of a single medical instituition, it cannot be generalized. As it is a questionnaire based study, there is a chance of reporting bias.

Conclusion

Our study reveal that a large no. of students in the initial years of medical education are under stress. Prospective studies are required in this regard to assess the gravity of the problem and also to assess the type of stressors and development of stress management techniques and their implementation in a successful manner.

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