

## RESEARCH ARTICLE

### Level of stress and its causes among 1<sup>st</sup>-year dental students - A cross-sectional study

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#### ABSTRACT

**Background:** Stress can be defined as any change in the environment that alter or threatens to alter an existing optimal steady state. When a change occurs from the school to the professional education, many students find it difficult to cope up with the new system and develop stress. Stress among medical students is well reported, but studies among dental students are few. **Aims and Objectives:** The aim of the study was to assess the prevalence of stress, levels of stress and its causes among 1<sup>st</sup> year dental students and also to find out the awareness of the stress. **Materials and Methods:** A cross-sectional study was done among 100 1<sup>st</sup> year students from a private dental college with the help of a questionnaire. It has two parts, first part demographic factors and self-reporting of stress with its causes and second part perceived stress scale (PSS) questionnaire by Cohen (PSS-10) to assess the level of stress. **Results:** Nearly 85% of the students were found to be under stress. 43% were under high stress, and 42% were having moderate amount of stress. Exams followed by change of environment from house to hostel and missing the parents were the major causes of stress. Females were more stressed than males. **Conclusion:** Stress was found to be very high among dental students. More studies are required in this field and measures should be taken to decrease the same.


**KEY WORDS:** Dental Students; Perceived Stress Scale; Self-reported Stress

#### INTRODUCTION

Stress is a psychological or physiological imbalance resulting due to the disparity between situational demand and the individuals ability and motivation to meet those needs. According to Dr. Hans Selye stress is the rate of all wear and tear caused by life.<sup>[1]</sup> It can be better defined as the body's response to any real or imagined event perceived as requiring some adaptive response and/or producing strain.<sup>[2]</sup> To some

extent, stress is good, and it improves the performance of the individual whereas too much stress can have negative effects and cause health problems.

Stress levels rise in line with higher levels of educational attainment. When comparison is made between medical and non-medical student, it is found that medical students perceive higher amount of stress.<sup>[3]</sup> Over the past three decades, there is an increase in the stress reported among medical students from all over the world.<sup>[4-7]</sup> A study from Seth G.S. Medical College in Mumbai showed that 73% of the medical students participated in the study had stress<sup>[8]</sup> whereas in a study conducted in Tamil Nadu revealed a higher prevalence of 82%.<sup>[9]</sup> Another study of medical students done in Pakistan showed that 85% were having stress.<sup>[10]</sup> Various studies show that stress not only decreases the academic performance but also causes problems with decision-making and is associated

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with anxiety and depression.<sup>[11,12]</sup> It was observed that psychological stress in the initial years of medical education was predictive of occupational stress in later years.<sup>[13,14]</sup>

Like medical students, dental students also are prone to develop stress may be because of the vast syllabus and other related activities (academic), social and personal issues. Many studies are reported in various parts of the world,<sup>[15-18]</sup> but studies from dental colleges from India are very less.<sup>[19-21]</sup> A study conducted by Chilukuri *et al.* from Tamil Nadu revealed a high prevalence of stress among dental students whereas another study conducted at Raichur, Karnataka, showed a prevalence rate of 29.5% only.<sup>[19,21]</sup> However, we could not find a single study reporting about the stress of dental students from Kerala. 1<sup>st</sup> year students in a professional college can be considered as a vulnerable group because they are in a transition stage from the school education to the professional education and find it difficult to cope up with the new system. Considering all these factors, we decided to study about the prevalence and levels of perceived stress and its causes among 1<sup>st</sup> year dental students of a college in Kerala. An attempt is made to find out whether they are aware of the stress by asking them to self-report about whether they are stressed or not.

## MATERIALS AND METHODS

A cross-sectional study was carried out among 100 1<sup>st</sup> year dental students of Azeezia College of Dental Sciences and Research, Kollam. The study was conducted in April 2015. This period was considered because students will get ample time (7 months) to get adjusted to the new system as the academic year starts in August. Informed consent was obtained from the participants of the study after getting the ethical clearance from Institutional Ethics Committee. Questionnaires having two parts were used for collecting the data. First part contained demographic data and questions like whether are you stressed (self-reported stress) and the causes of stress and the second part contains 10 questions about perceived stress by modified perceived stress scale (PSS) by Cohen.<sup>[22]</sup> Out of the 10 questions four were positively stated (questions 4, 5, 7, and 8). To get an overall score the responses of positively stated items are reversed (e.g., 0=4, 1=3, 2=2, 3=1, and 0=4) and added to the responses of the others. Statistical analysis was done using Chi-square test with SPSS 20 version software.

## RESULTS

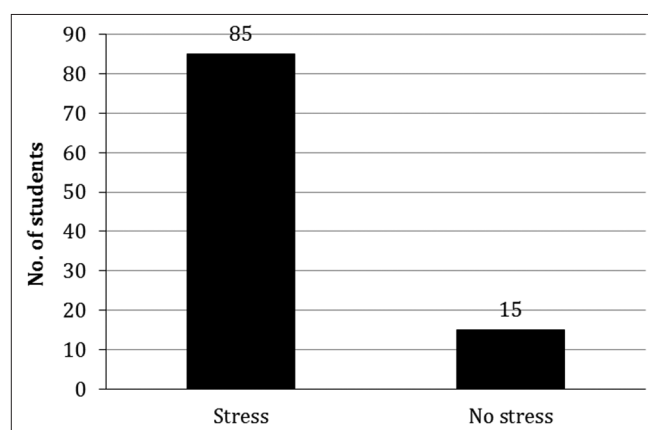
The questionnaire is administered in the 1<sup>st</sup> year dental students who are willing to participate in the study. The participation was 100%. Among these students, 73 students were females and 27 were males. Participants were divided into three groups according to the level of stress. Scores up to 13 were considered to be normal without any stress, 14–20

were taken as having stress in the average or moderate range and more than 20 as having high stress. 43 students had high stress and 42 students had stress in the average range. 15 students did not have any stress. Overall, the prevalence of stress was found to be 85% using PSS [Figure 1]. Out of the 73 females participated in the study 32 were having high stress, 30 moderate stress, and 11 no stress when PSS scores were taken. Similarly, 11 males were coming under high-stress category, 12 under moderate level, and 4 were not stressed [Figure 2]. When they were asked to report if they are feeling stressed to know whether they are aware of the stress, 76 of them reported to have stress. Out of the 76 who self-reported to be stressed, 59 had an exam as the main cause of stress. 30 out of these 59 reported that change of the environment as staying in the hostel and missing the parents was also contributing to the stress. 11 of them had change of food as the cause, 2 of them problems with friends, and 4 of them none of the above were the causes which they did not want to reveal [Figure 3]. 9 Students who did not reported to have stress, also found to be stressed when PSS score was taken. Difference obtained by PSS score and self-reported stress was not found significant ( $P = 0.086$ ).

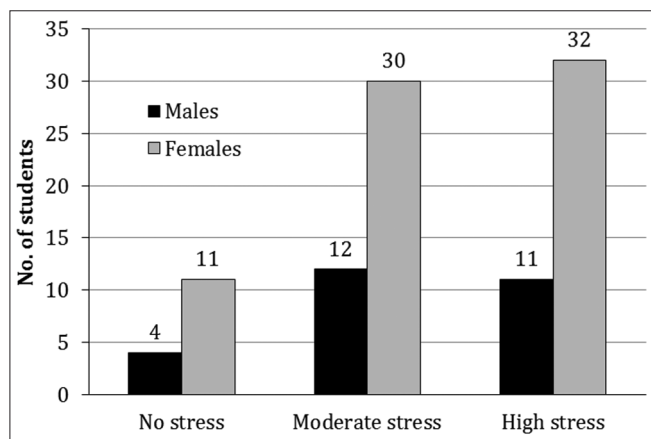
## DISCUSSION

In the present study, the prevalence of stress among 1<sup>st</sup> year dental students was found to be very high (85%) [Figure 1] out of which 43% were having high stress and 42% were having stress in the moderate range. 76% of the students were aware that they were having stress of some degree.

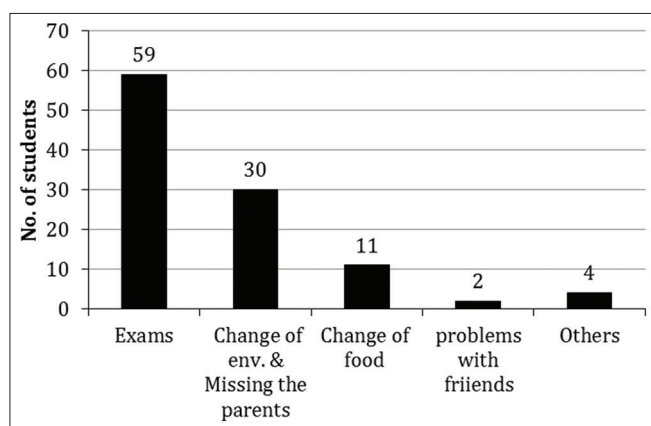
This can be compared to the results of a study conducted in Tamil Nadu in which 80 % of BDS students had stress.<sup>[19]</sup> A study conducted at a dental school in West Indies using Global severity index of the brief symptom inventory showed that 54.8% males and 44.2% females were having significant psychological stress.<sup>[18]</sup> Another study conducted among 273 students of a dental college in Telangana using Kessler 10 Psychological Distress instrument, 58% were having stress.<sup>[20]</sup> On the other hand, in a study conducted among



**Figure 1:** Prevalence of stress among 1<sup>st</sup> year dental students by perceived stress scale



**Figure 2:** Stress levels among males and females according to perceived stress scale



**Figure 3:** Causes of stress among 1<sup>st</sup> year dental students

dental students at Raichur, the prevalence of stress was found to be only 29.5%.<sup>[21]</sup>

The prevalence of stress was slightly more in dental students in the present study when compared to that of medical students in a previous study by the same authors which showed a prevalence of 83.9%.<sup>[23]</sup> This can be compared to studies of Chilukuri *et al.* from Tamil Nadu in which 70.83% medical students had stress which was less than that of dental students.<sup>[19]</sup> Studies from UK and USA also report that dental students are having more stress than medical, the reason for which is not clear. Humphris *et al.* in his study in 2002 where data were taken from 7 European dental schools concluded that the level of emotional fatigue was more in dental students when compared to medical students.<sup>[24]</sup> In the present study, exams followed by change in the environment of house to hostel and missing the parents were found to be the main causes of stress [Figure 3] unlike another study conducted among dental students at Tamil Nadu, where interpersonal problems with their friends followed by course overload as the main cause.<sup>[19]</sup> It can be compared to a study conducted on medical students by Anandhalakshmi *et al.* in which stressors were found to be belonging to academic and psychosocial domains.<sup>[9]</sup> Out of the 85%, Some of the students<sup>[9]</sup> were not aware that they were having stress in the moderate range

(according to the PSS score) which is similar to results of the previous study of medical students may be because they are asymptomatic.<sup>[23]</sup>

In our study females were found to be more stressed than males even though it was not statistically significant ( $P = 0.058$ ) [Figure 2]. This may be because the majority of participants in this study were females. From past a few years, more females students are scoring high in the qualifying examinations and getting admitted to professional courses. This may be because of the high female literacy rates of Kerala compared to other Indian states. This increase in stress among females is similar to previous study among medical students.<sup>[23]</sup> Another study conducted among medical students in Pakistan also show that the females are more stressed than males.<sup>[25]</sup> However, in the study on dental students from Tamil Nadu, boys were found to be more stressed than girls.<sup>[19]</sup> In a study by Cohen and Williamson in 1988 showed that there was no gender difference in the occurrence of stress.<sup>[26]</sup>

### Strength and Limitation of the Study

As there are no similar studies reported about the perceived stress among dental students of Kerala previously, this study has a significance. Limitations are that as this study is conducted on the 1<sup>st</sup> year students of a single institution, it cannot be representative of the whole students of the state. There is a chance of bias as this is purely dependent on the student's honesty in filling the questionnaire.

### CONCLUSION

As this is a first study of its kind from Kerala and as it shows a high prevalence of stress among dental students this should be taken seriously and more extensive studies should be conducted in this field. Measures such as counseling, meditation, and yoga should be promoted to get rid of the stress in these students. As there are student support systems functioning in most of the colleges in Kerala, students should be motivated to make use of it rather than hiding the issues.

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