

Perceived sources of stress among dental college students: An Indian perspective

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ABSTRACT

Background: Identification of the potential sources of stress is important in dental education program, as it gives opportunity to take various measures to prevent stress in the dental school environment. The purpose of the present study was to address various sources of stress among dental school students and its relation with gender and year of the study. **Materials and Methods:** A questionnaire based cross-sectional study was conducted among 3rd and 4th year students of a dental school. Questionnaire used in the study comprised the modified version of the questionnaire used in Dental Environmental Stress. A four-point Likert scale was used to record the responses from the subjects. A total of 174 subjects participated in the study. Statistical analysis was done using SPSS package version 16. **Results:** Of the participants, 39% (68) were males and 61% (106) were females. Majority of students felt stressed about academic performance, clinic/patient related stress, and career related stress. Top stressors in academic performance related stress were exam and grade stress (95%), followed by fear of failing (90.5%), lack of time between tests/clinics, and criticism at work (94%). Mean stress scores were significantly related to year and gender of students. **Conclusion:** Worries about fulfilling clinical requirements, academics, exam stress, and insecurity regarding career were the major sources of stress reported by the clinical year dental students in the present study.

Key words

Dental students, environment, performance, profession, stress

INTRODUCTION

Stress is a part of everyone's life. Stress is defined as the pattern of specific and nonspecific responses an organism makes to stimulus events that disturb its equilibrium and tax or exceed its ability to cope.^[1] It is normal for everybody to experience stress to some extent, but too much stress may be harmful. Attending a school, college or university is a rewarding experience but it is also a time of considerable anxiety and stress for students.^[2] Students are subjected to different kinds of experiences which makes them vulnerable to undergo a lot of stress. Stress may affect students' social, physical, and mental health.^[3] Deterioration in the health of students may affect learning ability and academic performance as well as goal achievement.

Education of dentistry is viewed as a complex, demanding, and pedagogical learning experience.^[4] It has been widely acknowledged that dentistry students need to acquire diverse proficiencies such as theoretical knowledge, clinical competencies, and interpersonal skills which are associated with high levels of stress.^[5] Expertise in dentistry require clinical and patient management skills which contribute toward stress perceived by students. The academic demands, manual dexterity, and clinical management skill requirement expose dental students toward stresses which are quite dissimilar as compared to students in other academic fields. This stress can lead to depression, anxiety, absenteeism, diminished work efficiency, and burnout in the students.^[6]

Scientific evidence shows the multifactorial nature of stress among students. Data from previous studies indicate that academics, examination, fear of failing, clinical training, financial resources, fear of facing parents after failure, and fear of unemployment cause major stress in students.^[7-9] Hence, the multifactorial etiology of the stress in dental education requires evaluation for complexity and eradication in the near future.

Though a few studies have been carried out on exploring the stressors and coping styles of medical and dental

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undergraduates,^[10,11] there is a dearth of work regarding stress sources in Indian undergraduate dental students. Hence, this study was aimed to determine the potential sources of stress in undergraduate dental students. This knowledge could be used to institute requisite institutional changes, and encourage the healthy active strategies to combat stress and improve academic performance and psychological well-being of dental students.

MATERIALS AND METHODS

Study setting and ethical clearance

An institutional cross-sectional study was conducted among undergraduate students of Sarabha Dental College in Punjab to evaluate the sources of stress among students in the dental school environment. Ethical clearance for conducting the study was obtained from the Institutional Ethics Committee. Informed consent was obtained from every subject prior to the start of the study.

Study population and sample

Study population consisted of 3rd and 4th (final) clinical year undergraduate students of the dental college. A universal sample of all 200 students who were enrolled in these 2 years batches were included in the study and participation in the study was voluntary. The response rate was 87%, therefore, the final sample comprised 174 subjects. A pilot survey was conducted on 10% of the study population to assess the feasibility of the study. The purpose of the study was explained well in advance to the students before the start of the study.

Measurement and instrument

A self-administered paper questionnaire was distributed to the students in their classes prior to lectures. An opportunity to ask questions were provided and clarifications were made. Questionnaire used in the present study comprised the modified version of the questionnaire used in Dental Environmental Stress (DES) survey, which was validated and translated to suit the Indian dental environment. Finally, 45 items were included in the questionnaire after removing and adding topics.^[12] The stressors included in the questionnaire were derived by reviewing the literature. In the present study, stressors were modified according to the study requirements. There were six domains in the questionnaire namely academic performance, clinical and patient responsibility, faculty relations, personal issues, accommodation, and professional identity/career. The responses to the items were based on a four-point Likert scale with response options of 1 = not stressful, 2 = slightly stressful, 3 = moderately stressful, and 4 = very stressful. Students were asked to respond to each stressor referring to this scale. The students

were given 30 min to complete the questionnaires. They were not allowed to discuss it among themselves during this time.

Statistical analysis

All the variables were entered into a personal computer and analyzed statistically. Results were statistically analyzed using SPSS package version 16.0 (SPSS, Chicago, IL, USA). The present study conducted the descriptive statistical analysis. Number and percentages were used to compute results on categorical measurements. Student's *t*-test was used for two group comparison. Comparison with gender and year of study was done by using analysis of variance (ANOVA). Statistical significance was set at $P < 0.05$.

RESULTS

A total of 174 subjects participated in the present study. The students were in the age group of 18–23 years, with mean age group 20.49. Of 174 students, 39% (68) were males and 61% (106) were females. Female students outnumbered the male students in both the years [Figure 1].

Various categories of stress perceived by students

While calculating the proportion of items considered as stressful in a dichotomous manner, the degree of perceived stress was ignored at this stage. Table 1 depicts the percentage of students (3rd and 4th year) perceiving different sources of stress. Majority of students felt stressed about academic performance, clinic/patient related stress, and career related stress.

Among clinical requirements, five items except were reported to be stressful by more than 80% of the students. Completion of clinical cases (100%), lack of confidence in making clinical decisions (96.5%), difficulty

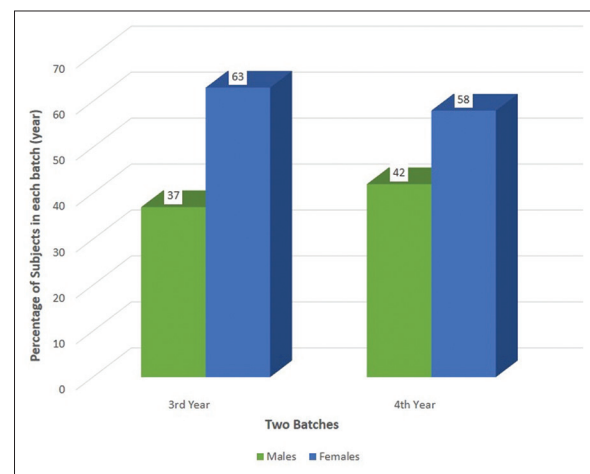


Figure 1: Distribution of study population according to year of study and gender

Table 1: Distribution of various stresses among dental students in terms of percentages

Stress items	Not stressful	Mildly stressful	Moderately stressful	Severely stressful	Total stress
Academics performance stress					
Amount of assigned class work	20	66	17	0	83
Lack of time to do assigned work	17	50	29	5	84
Lack of time between tests/lab/clinics	7	26.5	42	24.5	94
Exam and grade stress	5.5	24	41	30	95
Fear of failing	9.5	29	25	36.5	90.5
Difficulty understanding lecture	53	37	7.5	2.5	47
Competition among classmates	26.5	38	23	12.5	73.5
Criticism at work	24.5	33	31.5	11	75.5
Language barrier	85	12.5	1.5	1	15
Clinic/patient related stress					
Responsibility for comprehensive patient care	15.5	46	26.5	12	84.5
Patient being late/not showing	2	23	35.5	39.5	98
Patient cooperation/compliance	4.5	31	34.5	7	72.5
Difficulty in learning precision skills	11	28.5	35	24.5	88
Lack of confidence in making clinical decisions	3.5	41.5	42.5	12.5	96.5
Completion of clinical cases/quota	0	9.5	38	52.5	100
Faculty/institution related stress					
Atmosphere created by faculty	18	55.5	25.5	1	83
Rules/regulations of workplace	34.5	53	11.5	1	65.5
Criticism by teachers	24	36	25.5	9.5	71
Communication/approachability of teachers	51.5	35.5	11.5	1.5	48.5
Indifferent/biased behavior	32.5	36	25.5	6	67.5
Lack of cooperation of technical staff	28	33	17	3.5	53.5
Personal issues related to stress					
Difficulty in making friends	74.5	20.5	3.5	1.5	25.5
Relation with other class members	65	26.5	8	0	34.5
Relation with opposite sex	83	14	3	0	17
Lack of self-confidence	35	42.5	22.5	4.5	69.5
Financial constraints	25	43	18.75	13.25	75
Repayment of education loan	63	20.5	8	8.5	37
Health problems	43.5	32.5	16	13	58.5
Lack of time for relaxation	20	53.5	21.5	5	80
Parental pressure/expectations	28.5	24.5	26.5	20.5	71.5
Drinking/drug dependency	85.5	7	1	6.5	14.5
Accommodation/surrounding environment related stress					
Living away from home	32.5	27	20.5	20	67.5
Accommodation environment not conducive for studying	30	38.5	22.5	9	70
Compatibility with room mates	58	28	12.5	1.5	42
Lack of recreational facilities	16	26	30	33	89
Lack of homely atmosphere	28	35	24.5	12.5	72
Food quality satisfaction	22	19	12	47	78
Traveling to college and back	23	37	27	13.5	77.5
Professional/career related stress					
Lack of confidence to succeed	12	35.5	42.5	10	88
Expectations from professional school versus reality	11.5	33	39	16.5	88.5
Insecurity concerning dental career	9	22.5	37.5	31	91
Unemployment fear	8	20.5	30	41.5	92
Possibility to pursue postgraduation	14.5	23.5	47	15	85.5
Clinic set up	12.5	21	34.5	31	86.5
Lack of confidence in career decision	25	29	29.5	16.5	75

in learning precision skills (88), and patient being late or not showing up for appointments (98%) were the top stresses in this category.

Among academic performance related sources of stress (9 questions), five questions were reported to be stressful by >75% students. The stressors which topped the list

were, exam and grade stress (95%), followed by fear of failing (90.5%), lack of time between tests/clinics, and criticism at work (94%).

Among faculty/institution related stress, the atmosphere created by faculty (83%) and rules or regulations at the workplace (65.5%) were the main stressors. Lack of recreational facilities (89%) and satisfaction regarding food quality (78%) were the top two stressors in accommodation related stress. Moreover, 67.5% of subjects also felt stressful while living away from home.

In the profession/career related stressors annexure (7 questions), six items were reported to be stressful by >85% of the students. Clinic set up (86.5%), lack of confidence to succeed (88%), insecurity concerning dental career (91%), unemployment fear (92%), and possibility to pursue postgraduation (85.5%) were the main stressors in this category. Lack of time for relaxation, financial constraints, lack of recreational facilities, traveling to college and back etc., were among the other factors, which were cited as sources of stress by more than 75% students.

Comparison with gender and year of study

The difference between genders was found to be statistically significant, and it was observed that male students had higher mean stress scores (DES) than their female counterparts ($P = 0.02$, Student's *t*-test). Table 2 depicts the comparison of mean stress scores with gender and year of the study. Univariate analysis (ANOVA) indicated a significant difference of mean stress scores by the year of the study as well as gender ($P < 0.05$).

DISCUSSION

Dental education has shown to be very stressful for students as reported by large number of studies. The findings are consistent across different countries, universities, and curriculums.^[13,14] Clinical training includes learning clinical procedures, completion of specified number of patient procedures coupled with attending lectures and studying for examinations require the dental students to work harder and longer and adding to the overall stress.

Clinical and patient requirements were the greatest stressors reported by both 3rd and 4th year dental students. This finding is supported by earlier literature, which also suggested that clinical training issues impose a highest level of stress in dental students.^[15] This stress could be because the dental students are required to complete a certain quota of cases to be eligible to appear in the final examination. Absence of early clinical exposure also triggers an anticipatory stress reaction in regard to the upcoming encounter with the patients and

Table 2: Mean stress scores according to the gender and year of study

Variables	Mean stress scores±SD				P
	Not stressful	Mildly stressful	Moderately stressful	Severely stressful	
Gender	2.43±0.87	2.06±0.76	2.26±0.54	1.53±0.92	0.04*
Year	3.53±0.43	1.24±1.83	2.67±0.35	2.46±0.72	0.002*

* $P < 0.05$, statistically significant (ANOVA). SD: Standard deviation, ANOVA: Analysis of variance

using their clinical skills to treat the patient at an early stage. This finding is in agreement with the findings of some previous study.^[16] Attempt should be made to include soft skills required to handle patient as an integral part of the curriculum.

In academic performance related domain, exams, grade stress along with the fear of failing was reported as one of the major stressors reported by both the year students. Similar findings were reported in other studies conducted in some other part of the world.^[17,18] This may be due to the fact that the dental curriculum requires lots of study and students feel overloaded by high academic demands. Large amount of information required to master in a short time makes them fearful of scoring well in the exams.

The exam and grade related stress was cited as major stressors by 95% of the subjects regarding academic performance related stresses in the study. Various other academic and clinical requirement factors were reported to be stressful in the present study and some other studies.^[19,20] While some stress is inherent in dental education and probably normal, this universal phenomenon may be attributed to the academic pattern of some institutions (rules and regulations of workplace) which lays emphasis on scoring marks and passing the exams, rather than the process of actual learning. Thus, there is an urgent need to analyze and improve our evaluation system. Insecurity regarding future professional career was also high among both the years in the present study and another study conducting on Egyptian dental students.^[9] Significant stress was reported by students for items dealing with anxieties regarding future, namely, fear of unemployment, pursuing postgraduation, the clinic set up, and to be a successful dentist. This is in agreement with previous literature.^[21] The reason may be that the major issue affecting the present dental education system in India is heavy competition to gain a job following graduation or to achieve admission to postgraduation course.

The atmosphere created by the faculty was also reported stressful among students in the study. Students often receive criticism from the staff for the clinic and academic work. Students might feel stressed when criticized in front of the patients. Similar finding has been reported in

some other Indian study.^[22] However, the approachability and communication with teachers was not perceived stressful by the students in our study, suggesting that the students find it easier to communicate with the faculty in the institution.

The hostellers experienced more stress than day scholars as lack of recreational facilities, satisfaction regarding food quality, and living away from home were cited as stressful by a majority of subjects in the study. This may be related to the fact that students living away from parents encounter difficulties with adaptation to living alone in a new environment and being self-dependent.^[23] Hence, this suggests that the quality of living and food in hostels should be improved, adequate facilities for recreation to be provided for relaxation, mentors and matrons should be appointed to make the students feel at home.

Financial resources and high parental expectations as nonacademic sources of stress were reported by many students in the present study and similar studies conducted in other countries.^[24,25] Stress due to financial constraints can be explained by the fact that the cost of studying professional course like dentistry is high. Some parents finance their children through bank loans, books and instruments used during the academic tenure also costs very high. All these give the students the anxiety about the financial resources. The academic overload also results in a lack of time for relaxation, resulting in stress.

Statistically, significant difference was reported when mean stress scores were compared with year and gender of the students. Similar results were revealed in some other studies.^[9,21] However, male students had comparatively more mean stress scores as compared to female students which is contrary with the findings of one of the above studies.^[9]

The least stress provoking factor reported by both year students were related to interpersonal relationships, such as making friends and relationship with the opposite sex, indicating that the interpersonal communication skills of the students are fairly good. Besides this, drug, alcohol dependency and language barrier were also not perceived stressful by the students. This in accordance with study results of a study conducted in Bangalore, India.^[26]

CONCLUSION

Our study confirms the findings of other studies that the prevalence of perceived stress is high among dental students. In our study, worries about fulfilling clinical requirements, academics, exam stress, and insecurity regarding career were the major sources of stress reported by the clinical year dental students. Male students

suffered from higher stress as compared to females. Students should be taught positive coping strategies and various stress managing techniques to improve the ability to cope with the demanding professional course. A congenial learning environment needs to be created for better learning with less anxiety and fear.

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