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Assessment of stress among dental students: A descriptive cross-sectional study

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Abstract
Background: Dental student stress, stemming from academic and sociocultural factors, necessitates targeted interventions for stress alleviation. Recognizing stress sources is imperative for policy advocacy and effective strategies.
Methods: A cross-sectional study took place between July and October 2023, involving 197 third-year dental students, final-year students, and CRRI participants. Stress levels were assessed through a questionnaire administered via Google Forms to ensure anonymity and privacy. Statistical analysis was conducted using IBM SPSS Version 26.
Results: In the participant pool, female students constituted 70.1%, males 29.9%, all of them experienced stress. Only 43.1% prioritized dentistry as their first choice. Academic workload stress was universal (99.8%), along with concerns about relaxation time (80.3%) and examination requirements (59.4%). Patient management tasks emerged as top stressors, notably appointment issues (81.7%) and self-sourcing patients (59.9%). 0.7% faced a non-supportive atmosphere for extracurricular activities, and 30.5% relied on sleeping as a coping mechanism.
Conclusion: Overall stress levels, predominantly slight to moderate, were notably higher in third and final year undergraduates.

Keywords: Mechanical, educational psychology, dentistry, mental health, coping mechanism

Introduction
The experience of stress is greatly influenced by one's personal belief structure and attitudes. These self-cognitions act as a buffer between the perceived stressor and the resulting student behaviour. Self-cognitions related with control and self-efficacy tend to reduce stress and distress, resulting in enhanced educational outcomes [1, 2]. "Dental Education is regarded as a complex, demanding, and often stressful pedagogical exposure," according to a report by the Global Congress in Dental Education (2008). It entails acquiring necessary academic, clinical, and interpersonal skills while learning." Clinical and patient management skills are required for practising dentistry, which adds to the stress felt by students [3, 4]. The term STRESS refers to external (physical or mental) demands on an individual's physical and psychological well-being that have a negative impact on academic performance [5]. Time and scheduling constraints, the highly technical and intensive nature of the work, and dealing with uncooperative patients are all stressors associated with dentistry. This stress can result in depression, anxiety, substance abuse, absenteeism, decreased work efficiency, and burnout. The origins of occupational stress may lie in the educational process, as dental students face high levels of stress during training [1]. "Occupational stress," according to Lovallo, is a state of physical and mental tension caused by excessive demands or a lack of resources [6]. The Bachelor of Dental Surgery programme in India lasts four calendar years, with a progression examination at the end of each year, followed by a one-year rotatory internship in dental colleges governed by the Dental Council of India. Students are taught the basic sciences and preclinical dentistry during the first two years of graduation, with clinical education beginning in the third year. Several studies have identified examinations, grade competition, fear of failing the year, and insufficient time for relaxation as major academic stressors among dental

college students [7]. According to Cooper *et al*., the dental profession is the most stressful when compared to other healthcare professions [8]. Previous research found that 10% of dental students experienced severe emotional exhaustion, 17% experienced a severe lack of accomplishment, and 28% experienced severe depersonalization symptoms [9]. The ability to cope with stress effectively is important because stress can lead to health-harming behaviours and psychological morbidity. According to recent research, psychological morbidity, pathological anxiety, and emotional exhaustion are not uncommon in dental students [10]. As a result, the goal of this study was to determine the factors that influence stress among dental students.

Materials and Methods

A cross-sectional survey employing a questionnaire was conducted among Bachelor of Dental Surgery students from third to intern years in private dental colleges in Chennai. Ethical clearance was obtained from the institutional review board before starting the research and students were informed about the study's objectives, emphasizing voluntary and anonymous participation to encourage genuine perceptions. A self-administered questionnaire in English was designed, containing 36 questions comprised five sections, covering demographic details and questions related to the distribution of stress caused by personal and family reasons, academic stress, stress related to patient work and self-imposed quotas, stress in the surrounding environment, and methods of coping with stress. A pilot study was conducted among 20 samples from the target population to validate the questionnaire and to get the required sample size. A sample size of 197 participants was determined after conducting a pilot study. Study duration was between July 2023 to October 2023. It was collected from students through a structured Google form and distributed through social media platforms like WhatsApp and also administered in classrooms. The data collection spanned approximately three months. Overall, 197 respondents of undergraduate students including 97 students of 3rd-year BDS, 35 students of 4th-year BDS, 65 BDS interns, were recorded. A non-probabilistic convenient sampling method was employed to recruit participants for the study. Participants were reassured regarding the confidentiality and privacy of their information during the research process and were asked to provide appropriate answers. Descriptive analyses were conducted for both qualitative and quantitative variables. Statistical analyses were performed using IBM SPSS version 26 software. Cross tabulations were made and the statistical significance was evaluated through Pearson's Chi- square test.

Results

This study comprised experiences from the previous academic year and involved third to fifth year undergraduate dental students. The questionnaire received a 100% response rate. The demographics of the study population are shown in Table 1. Across all years, there were significantly more female students (70.1%) than male students (29.9%), 49.2% (97) of the 197 participants were third-year students, followed by 33% (65) interns and 17.8% (35) final-year students. Over the course of all years, there were more day scholars (70.1%) than hostellers (29.9%).

When responses were categorized as stressful or non-stressful, the prevalence of stress was 100% across all years of study (Table 2). The majority of undergraduate dental students (44.7%) were pleased with their professors. Only 43.1% (85) of the 197 study participants chose dentistry as their first profession choice, while 56.9% (112) didn't. The half of the respondents (55.3%) shared financial responsibility with their parents. Around 65.5% were satisfied with the peer group they formed during their academic career, and 64% were satisfied with their entire college experience.

Table 1: Demographics of the study population

	Options	Frequency	Percent
Gender	Female	138	70.1
	Male	59	29.9
	Total	197	100.0
Mode of living	Day scholar	155	70.1
	Hosteller	42	29.9
	Total	197	100
Year of study	Third year	97	49.2
	Final year	35	17.8
	Intern	65	33
	Total	197	100

Table 2: Distribution of stress due to personal and family reasons

Questions	Options	Females (N%)	Males (N%)	P-value	Day Scholar (N%)	Hosteler (N%)	P-value
Are you satisfied with your faculty	Satisfied	100 (72.4)	46 (40.7)	0.212	117 (75.5)	29 (67.2)	0.072
	Dissatisfied	4 (2.8)	1 (1.7)		3 (1.9)	0 (0.0)	
	Neutral	34 (24.6)	12 (20.3)		35 (22.6)	11 (26.2)	
Is dentistry your first choice of career	Yes	55 (39.9)	30 (50.8)	0.154	72 (46.5)	13 (31.0)	0.072
	No	83 (60.1)	29 (49.2)		83 (53.5)	29 (69.0)	
Are you sharing financial responsibilities with family	Yes	49 (35.5)	39 (66.1)	0	75 (48.4)	13 (31.0)	0.044*
	No	89 (64.5)	20 (33.9)		80 (51.6)	29 (69.0)	
Are you satisfied with your peer group	Satisfied	84 (60.9)	45 (77.3)	0.027	98 (61.9)	7 (76.7)	0.34
	Dissatisfied	6 (4.3)	1 (1.7)		4 (2.6)	0 (0.0)	
	Neutral	48 (34.8)	13 (22.0)		51 (32.9)	10 (23.8)	
Does sharing financial responsibility make you stressful	Yes	18 (13.0)	7 (11.9)	0.421	21 (13.5)	4 (9.5)	0.567
	No	90 (65.2)	39 (66.1)		103 (66.5)	26 (61.9)	
	Neutral	30 (21.7)	13 (22.0)		31 (20.0)	12 (28.6)	
Does having physical health problems make you stressful	Yes	34 (24.6)	8 (13.6)	0.215	34 (21.9)	8 (19.0)	0.365
	No	63 (45.7)	30 (50.8)		76 (49.0)	17 (40.5)	
	Neutral	41 (29.7)	21 (35.6)		45 (29.0)	8 (19.0)	
Does fear of STIs/AIDS/Hepatitis B make you stressful	Yes	44 (31.9)	7 (11.9)	0.004	41 (26.5)	10 (23.8)	0.285
	No	57 (41.3)	38 (64.4)		78 (50.3)	17 (40.5)	
	Neutral	37 (26.8)	14 (23.7)		36 (23.2)	15 (35.7)	

Statistically significant
Pearson's Chi-square test

Table 3: Distribution of Stress due to academics

Question	Options	Females (N%)	Males (N%)	P-value	Day Scholar (N%)	Hosteler (N%)	P-value
Are you satisfied with the college overall	Satisfied	81 (58.7)	45 (76.2)	0.015	30 (19.4)	27 (63.9)	0.721
	Dissatisfied	7 (5.1)	1 (1.7)		6 (3.9)	2 (4.8)	
	Neutral	49 (35.5)	12 (20.3)		48 (31.0)	13 (31.0)	
How much stress attributed to academic work makes you stress	Yes	44 (31.9)	10 (16.9)	0.005	36 (23.2)	18 (42.9)	0.085
	No	33 (23.5)	19 (49.1)		51 (30.7)	11 (25.7)	
	Neutral	61 (44.2)	20 (33.9)		68 (43.9)	13 (31.0)	
Does fear about examination and grading make you stressful	Yes	47 (34.1)	13 (22.0)	0.096	46 (29.7)	14 (33.3)	0.071
	No	28 (20.3)	21 (35.6)		41 (26.5)	8 (19.0)	
	Neutral	62 (44.9)	25 (42.4)		68 (43.9)	19 (45.2)	
Does learning clinical procedure make you stressful	Yes	11 (8.0)	2 (3.4)	0.314	10 (6.5)	3 (7.1)	0.041*
	No	80 (58.0)	40 (67.8)		101 (65.2)	10 (6.5)	
	Neutral	47 (34.1)	17 (28.8)		44 (28.4)	20 (47.6)	
Does criticism about your work make you stressful	Yes	33 (23.9)	6 (10.2)	0.035	30 (19.4)	9 (21.4)	0.415
	No	60 (43.5)	35 (59.3)		79 (51.0)	30 (19.4)	
	Neutral	45 (32.6)	17 (28.8)		45 (29.0)	17 (40.5)	
Does rules and regulations of the academic course towards students make you stressful	Yes	23 (16.7)	7 (11.9)	0.615	21 (13.5)	9 (21.4)	0.392
	No	73 (52.9)	35 (59.3)		88 (56.8)	21 (13.5)	
	Neutral	42 (30.4)	17 (28.8)		46 (29.7)	13 (31.0)	
Does completing examination requirements on time make you stressful	Yes	31 (22.5)	10 (16.9)	0.182	30 (19.4)	11 (26.2)	0.496
	No	40 (29.0)	25 (42.4)		54 (34.8)	11 (26.2)	
	Neutral	67 (48.6)	24 (40.7)		71 (45.8)	20 (47.6)	
Does fear of failing a subject make you stressful	Yes	41 (29.7)	11 (18.6)	0.161	41 (26.5)	11 (26.2)	0.703
	No	37 (26.8)	24 (40.7)		50 (32.3)	11 (26.2)	
	Neutral	60 (43.5)	24 (40.7)		64 (41.3)	20 (47.6)	

*Statistically significant
Pearson's Chi-square test

Table 4: Distribution of stress due to patients work and quota

Question	Options	Females (N%)	Males (N%)	P-value	Day Scholar (N%)	Hosteler (N%)	P-value
Does lack of confidence about being a successful Dental student makes you stressful	Yes	33 (23.9)	5 (8.5)	0.045	28 (18.1)	10 (23.8)	0.804
	No	68 (49.3)	36 (61.0)		83 (53.5)	28 (18.1)	
	Neutral	37 (26.8)	18 (30.5)		44 (28.4)	11 (26.2)	
Does lack of time for relaxation make you stressful	Yes	32 (23.2)	20 (20.3)	0.021	34 (21.9)	10 (23.8)	0.956
	No	54 (39.1)	35 (59.3)		70 (45.2)	34 (21.9)	
	Neutral	52 (37.7)	12 (20.3)		51 (32.9)	13 (31.0)	
Does working on patients with dirty mouths make you stressful	Yes	25 (18.1)	16 (16.9)	0.181	24 (15.5)	11 (26.2)	0.273
	No	71 (51.4)	38 (64.4)		88 (56.8)	24 (15.5)	
	Neutral	42 (30.4)	11 (18.6)		43 (27.7)	10 (23.8)	
Does patient arriving late or not showing up for appointment	Yes	42 (30.4)	11 (18.6)	0.209	35 (22.6)	18 (42.9)	0.042*
	No	51 (37.0)	32 (54.2)		71 (45.8)	35 (22.6)	
	Neutral	42 (30.4)	15 (25.4)		47 (30.3)	10 (23.8)	
Does fear of being unable to catch up if left behind in quota make you stressful	Yes	53 (38.4)	17 (28.8)	0.385	51 (32.9)	19 (45.2)	0.512
	No	55 (39.9)	29 (49.2)		68 (43.9)	7 (16.7)	
	Neutral	30 (21.7)	13 (22.0)		36 (23.2)	20 (47.6)	
Does finding ideal patients for clinical work in exams make you stressful	Yes	38 (27.5)	10 (16.9)	0.004	39 (25.2)	9 (21.4)	0.783
	No	29 (21.0)	26 (44.1)		44 (28.4)	22 (52.4)	
	Neutral	71 (51.4)	23 (39.0)		72 (46.5)	22 (52.4)	

*Statistically significant
Pearson's Chi-square test

Table 5: Distribution of stress and surrounding environment]

Question	Options	Females (N%)	Males (N%)	P-value	Day Scholar (N%)	Hosteler (N%)	P-value
Does conflicts with clinical partner make you stressful?	Yes	26 (18.8)	7 (11.9)	0.036	23 (14.8)	10 (23.8)	0.336
	No	66 (47.8)	40 (67.8)		84 (54.2)	22 (14.8)	
	Neutral	46 (33.3)	12 (20.3)		48 (31.0)	10 (23.8)	
Does non-supportive environment for extracurricular Activities make you stressful?	Yes	22 (15.9)	5 (8.5)	0.422	22 (14.2)	5 (11.9)	0.344
	No	65 (47.1)	35 (59.3)		78 (50.3)	22 (14.2)	
	Neutral	49 (35.5)	19 (32.2)		54 (34.8)	14 (33.3)	
Does lack of conducive study environment at home/Living quarters/hostel make you stressful?	Yes	25 (18.1)	3 (5.1)	0.034	22 (14.2)	6 (14.3)	0.892
	No	70 (50.7)	39 (66.1)		87 (56.1)	22 (14.2)	
	Neutral	43 (31.2)	17 (28.8)		46 (29.7)	14 (33.3)	

Pearson's Chi-square test

The majority of students (99.8%) felt stressed about academic work throughout all academic years. The most common were examinations and grading (58.9%), fear of failing the subject or course (61.5%), and concern of being unable to catch up if falling behind (81.7%). Respondents also complained about not having adequate time to relax (80.3%) and not having sufficient time to complete examination requirements (59.4%). The most common concerns among dental students were criticism (78.7%) and lack of confidence (80.2%). Furthermore, respondents were more concerned with academic course norms and regulations (75.1%) than mastering clinical procedures (73%).

The most common stressors among undergraduate dental students were patient management tasks. Patients arriving late or not showing up for appointments (81.7%), having to find one's own patients (59.9%), and working on patients with unclean mouths were among them (71.6%). The majority of participants were stressed due to health issues (79.2%), conflict with clinical partners (73.6%), and, in specifically, a non-supportive atmosphere for extracurricular activities (80.7%). The majority of respondents (79.7%) were afraid about developing a sexually transmitted disease and did not have a conducive study environment (75.7%). The majority of respondents coped with stress in various ways, including listening to music and watching movies (29.4%), spending time with family and friends (22.8%), sleeping (30.5%), and physical activities (12.2%).

Discussion

Stress has been described as a two-edged sword, with the ability to either push and motivate students to peak performance or lower them to ineffectiveness [11]. Previous research has found that dental school causes significant stress in students [12, 15]. These findings are almost universal in distinct nations education systems and teaching standards. It is difficult to eliminate all of the stressful issues in a dental education curriculum. To become a responsible dental practitioner, students must acquire high levels of knowledge and professional skill while also developing positive attitudes toward patient care in a short period of time [11]. The current study was carried out in order to better understand the factors influencing student perception.

When comparing career choices, it was discovered that students who chose dentistry due to parental pressure experienced higher stress due to academic load and fear of unemployment after graduating from university. This study found that financial concerns caused a huge amount of stress. This can be attributed to the fact that admission to dental college requires a large tuition fee, and many parents finance their children's education through bank loans for which they must pay a high interest rate, and the instruments and books used during the academic period are also very expensive, giving the student anxiety about financial resources, which is contrary to Acharya's study [13].

Fear of failure, particularly the fear of falling behind, was the most stressful issue across all classes. From the first to the fifth years, stress was consistently high due to workload and less time for relaxation. It was also discovered that stress associated with exams and grading was widespread across all classes. Other authors [14, 16] have also reported an abrupt increase in stress.

It was discovered that stress from patient management chores, particularly patient turning up late or not showing up, and identifying one's new patient, causes inconvenience among clinical partners in low patient inflow colleges. Students struggle to find their own patients and apply their clinical skills to treating these patients at an early stage while balancing the demands of their academic course load, particularly those pertaining to medical subjects [5, 11]. Students must complete clinical requirements before taking exams. Clinical sciences are heavily emphasised in dental schools, with the goal of producing graduates with competent clinical skills [17].

Talking to friends was the most popular stress-reduction technique among students across all academic years. Muirhead and Locker [5] discovered that students who received more social support seemed to get less stress; this social support can come from faculty members, parents, and perhaps other students. Sugiura *et al* [11] concluded that students who engaged in regular exercise had lower levels of stress, allowing them to develop positive human relationships. Music and movies have also been popular stress relievers. Music and movies are forms of entertainment that are thought to nourish and soothe the mind, allowing students to unwind.

The process of education for dental students includes a number of stressful elements. High levels of stress can have a number of physical and behavioural effects. By identifying stressors that affect students, necessary changes can be made to improve dental students' quality of life. Although stressful events cannot be avoided, appropriate measures can be implemented to change students' dysregulated perceptions and reactions to them. The dental faculty must create a welcoming environment so that students can pursue their studies with less anxiety or fear. This can be accomplished by having the dental faculty interact on a regular basis with trained educational psychologists who can train the faculty in the most up-to-date educational methodologies to maximise student performance and minimise stress. Parents should also be counselled during their children's pre-university years about the negative consequences of pressuring them to join an educational programme against their will. This can be accomplished by enlisting the assistance of the high school administration in organising regular workshops involving parents and teachers. Career fairs can also be used to provide parent counselling. If these changes are implemented, stress on dental students should be reduced, allowing them to be more likely to succeed as students and, ultimately, as dental professionals.

Conclusion

In conclusion, this study focused on stress factors among undergraduate dental students. Fear of failure emerged as a significant stressor, especially for those pressured into dentistry by parents. Financial concerns were prevalent, linked to the high cost of dental education. Stress levels increased across academic years, with notable challenges in patient management tasks. The study underscores the need for supportive environments and interventions to alleviate stress, ultimately enhancing the well-being of dental students.

References

1. Tangade PS, Mathur A, Gupta R, Chaudhary S. Assessment of Stress Level among Dental School Students: An Indian Outlook. Dent. Res. J (Isfahan). 2011 Spring;8(2):95-101.
2. Westerman GH, Grandy TG, Ocanto RA, Erskine CG. Perceived sources of stress in the dental school environment. J Dent. Educ. 1993;57(3):225-31.
3. Shaik PS, Pachava S, Palli CB. Factors affecting stress among students in dental colleges of neo-capital state in

India. J Indian Assoc Public Health Dent. 2019;17:41-7.
4. Harikiran AG, Srinagesh J, Nagesh KS, Sajudeen N. Perceived sources of stress amongst final year dental under graduate students in a dental teaching institution at Bangalore, India: A cross sectional study. Indian J Dent. Res. 2012;23:331-6.
5. Muirhead V, Locker D. Canadian dental students' perceptions of stress. J Can. Dent. Assoc. 2007;73:323.
6. Humphris G, Blinkhorn A, Freeman R, Gorter R, Hoad-Reddick G, Murtomaa H, *et al*. Psychological stress in undergraduate dental students: Baseline results from seven European dental schools. Eur. J Dent. Educ. 2002;6:22-9.
7. Kaipa S, Margabandhu S, Fareed N, Kumar K. Perceived source of stress among dental students in South India. Ann Essence Dent. 2012;4:43-51.
8. Cooper CL, Watts J, Kelly M. Job satisfaction, mental health, and job stressors among general dental practitioners in the UK. Br Dent J. 1987;162:77-81.
9. Morse Z, Dravo U. Stress levels of dental students at the Fiji school of medicine. Eur. J Dent. Educ. 2007;11:99-103.
10. Pau AK, Croucher R, Sohanpal R, Muirhead V, Seymour K. Emotional intelligence and stress coping in dental undergraduates - A qualitative study. Br. Dent. J. 2004;197:205-9.
11. Sugiura G, Shinada K, Kawaguchi Y. Psychological well-being and perceptions of stress amongst Japanese dental students. Eur J Dent Educ. 2005;9(1):17-25.
12. Atkinson JM, Millar K, Kay EJ, Blinkhorn AS. Stress in dental practice. Dental Update. 1991;18:60-64.
13. Acharya S. Factors affecting stress among Indian dental students. J Dent. Educ. 2003;67(10):1140-8.
14. Heath JR, Macfarlane TV, Umar MS. Perceived sources of stress in dental students. D. 1999;26(3):94-8, 100.
15. Rajab LD. Perceived sources of stress among dental students at the University of Jordan. J Dent. Educ. 2001;65(3):232-41.
16. Naidu RS, Adams JS, Simeon D, Persad S. Sources of stress and psychological disturbance among dental students in the West Indies. J Dent. Educ. 2002;66(9):1021-30.
17. Divaris K, Barlow P, Chendea S. The academic environment: the students' perspective. Eur J Dent Educ. 2008;12:120-30

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