

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

Harpreet Singh Attwal (Principal Investigator)

Certified Dental Assistant
Cambie Plaza Dental, Richmond, BC, Canada
Email: dr.farid24@gmail.com

Azin Mohseni Kabir (Assistant Investigator)

Dental Assistant
Summerville Dental Clinic, Toronto, Canada
Email: azin_mohseni@yahoo.com

Sujit Pradhan

Director
Simpli Boards Inc. Surrey, Canada
Email- director@simpliboards.com

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Abstract:

Background:

Dental student faces stress from various sources included academic and socio cultural factors. Research studies have shown that dental students are experiencing mental stress and it has a significant impact on their overall health. Dental students have reported negative effect of stress beginning in undergraduate studies period. The various predisposing factors have been identified and determined. The aim of our study was to determine and compare stress among dentists of different year students, from First year till post graduation.

Methods:

A cross-sectional study took place from 2023 to March 2024, involving 114 dental students in total. The data is collected from five dental colleges in India and seven dental colleges in Iran. It includes first year students, second year students, third year students, final year students, internship students and post graduate students. 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 69 in number with 60.52%, 45 males with 39.47%, all of them experienced psychological stress. 48.94% students ignore their diet in their routine life. Students getting anger very easily are 52.42%. 35.56% students have set unrealistic goals in their life. 51.17% students experienced not to find the humor in situations others find funny. Only 54.08 % students get irritated very easily. Majority of the students click yes in the box showing 51.31% students neglect their emotions. 60.21% students have selected that they are neglecting exercise. The individuals

with no supportive relationship are 70.45%. 41.43% participants are not taking proper sleep due to their lifestyle. 76.19% subjects do not like to wait in their life. Only 49.07% subjects ignore the sign of stress they are bearing. 34.28% participants often think there is not only one right way to do something. Most of the subjects do not live in past, only 38.43% are still thinking about their past experiences. 56.68% participant's think they race through the day. 47.57% students feel unable to cope with all you have done in their life.

Conclusion:

Stress is more experienced by third year undergraduates Overall stress levels, predominantly slight to moderate, were notably less in final year students.

Keywords: Students, Stress, Daily life educational psychology, dentistry, mental health, sleep, exercise, diet.

Introduction:

Stress can be defined as a feeling of pressure and strain (1). In 1978 Cox defined stress as 'a stimulus, a response or the result of an interaction described in terms of some imbalance between the two, with the interaction described in terms of some imbalance between the person and the environment' (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 practicing dentistry, which adds to the stress felt by students [3, 4]

Some studies have shown that dentistry is a very stressful specialty (5) and sometimes it can even be dangerous for the general dentist's health (6-8). It is known that stress is affecting physical/ general health as lower back pain, musculoskeletal complaints, gastrointestinal disorders and headaches

Stress problem is getting more and more common among dentists and its starts even in under- graduate education period. Students are experiencing stress and it is related to clinical requirements, stringent academic assessments, dealing with clinical problems (8-10). Appearing stressful situations have negative effect on postgraduates as well. However not always stress can lead to some kind of health disorders, but it also can help young doctors to gain confidence and motivation in critical situations (14) 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 [11] . According to Cooper et al., the dental profession is the most stressful when compared to other healthcare professions [12] . 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 [13]. The ability to cope with stress effectively is important because stress can lead to health-harming behaviors and psychological morbidity. According to recent research, psychological morbidity, pathological anxiety, and emotional exhaustion are not uncommon in dental students [14]

The aim of our study was to determine and compare stress among dental students with different colleges.

Materials and Methods

A cross-sectional survey employing a questionnaire was conducted among Bachelor of Dental Surgery students from Indian and Iranian private dental colleges. 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 20 questions, covering demographic details and questions related to the distribution of stress caused by day to day life routine. The students of five Dental Colleges from India and Seven dental colleges from Iran took part in this study. The participants were undergraduate students of dentistry program and post graduation dental

specialization in endodontology, orthodontics, pediatric dentistry, periodontology, prosthodontics. A sample size of 84 participants was determined after conducting a pilot study. Study duration was from December 2023 to March 2024. It was collected from students through a structured Google form and distributed through social media platforms like WhatsApp. The data collection spanned approximately four months. Overall, 114 respondents of undergraduate students and post graduate including 15 First Year students, 18 Second Year, 23 Third Year, 26 Final Year, 18 Internship, 14 Post Graduate students were recorded. 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 First to Final year undergraduate dental students and post graduate 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 (60.52%) than male students (39.47%), 13.15% (15) of the 114 participants were First-year students, followed by 14% (16) second year students, 18.42%(21) third year, 25.43%(29) final year, 15.78 %(18) Intern, and 13.15% (15) Post Graduate students. Table1:

Table: Demographics of the study population

Year of study	Number of Participants	Male	Female
First Year	15	5	10
Second Year	16	5	11
Third Year	21	11	10
Final Year	29	15	14
Internship	18	10	8
Post Graduate	15	4	11
Total Participants	114	31	59

Table: Day To Day Stress Assessment Table with relevant results.

Levels of Stress	Results
1-6	Your basic stress level is low and easily managed.
7-12	You have fairly good stress management on a day to day basis.
13-17	Your basic stress is high and above a comfortable level.
18+	You have enough factors to put you in distress and should seek help

Reference:

Psychological First Aid Pocket Guide, Canadian Red Cross Psychological first aid self

Table: Day to Day Stress Self Assessment Questionnaire. Do you frequently do any of the following?
Choose all that apply?

Questions	Options	Male	Female
1. Do you Neglect your Diet?	Yes	21	30
	No	10	29
2. Do you Try to do everything yourself?	Yes	17	38
	No	14	21
3. Do you get Anger easily?	Yes	17	37
	No	14	22
4. Have you set unrealistic goals in your life?	Yes	18	25
	No	13	34
5. Do you think you do not find the humor in situations others find funny?	Yes	16	29
	No	15	30
6. Do you become easily irritated?	Yes	14	29
	No	17	30
7. Do you make a “big deal” of things?	Yes	17	36
	No	14	23
8. Do you complain that you are disorganized?	Yes	15	32
	No	16	27
9. Do you Neglect your emotions?	Yes	21	32
	No	10	27
10. Do you Neglect exercise?	Yes	19	34
	No	12	25
11. Do you have few supportive relationships?	Yes	15	35
	No	16	24
12. Do you Neglect sleep or rest?	Yes	14	35
	No	17	24
13. Do you Become angry when you are kept waiting?	Yes	16	34
	No	15	25
14. Do You Ignore signs of stress	Yes	14	37
	No	17	22
15. Are you Procrastinate?	Yes	21	45
	No	10	14
16. Do you often think there is only one right way to do something?	Yes	19	26
	No	12	33
17. Do you neglect to build relaxation into everyday?	Yes	18	36
	No	13	23
18. Do you spend a lot of time complaining about the past?	Yes	13	30
	No	18	29
19. Do you think you race through the day?	Yes	15	43
	No	16	16
20. Do you feel unable to cope with all you have done?	Yes	16	37
	No	15	22

The majority of students (72.61%) neglect to build relaxation into everyday routine. 67.85% feel unable to cope with all they have to do and concern of being think they have a race through the day (52.71%). Respondents also complained about their past (39.31%), 41.80% often think there is only one right way to do something in their life. 46.45% Ignore signs of stress on their body. 48.82% participants not having sufficient time to exercise. 45.82% Become angry when you are kept waiting for something. Most of the students Neglect sleep or rest (44.70%). Moderate subjects think they few supportive relationships in their life (45.70%). The participants (17.63%) complain that they are disorganized. 50.69% believe that they make a “big deal” of things. 49.07% Neglect their emotions. 39.43% become easily irritated. 41.43% think they do not find the humor in situations others find funny around them. Only 39.92% students have set unrealistic goals in your life. 50.33% tries to do everything by them. 47.31%subjects Neglect their Diet.

Discussion

The findings of our study confirm that dental students are psychologically and physically intensive work, with strict work timing and they do not have adequate time for sleep, diet and exercise. It highlights that dental students are not taking care of their own health and it might affect the health of their patients. Majority of the students fall in stress level between 7-12, which shows that they have fairly good stress and it, can be management on a day to day basis. The maximum number of students belongs to final year to be come under this measuring slab. This could be due to pressure of their final year study as it is the most challenging year; students have to study more than eight subjects along with their clinical assignments.

It is good that number of students, who are experiencing stress more than 18+, shows that they have enough factors to put them in distress and they should seek help. Stress can cause psycho emotional disorders, however the other systems of human body can also be affected in long term (heart and blood vessels, digestive system, immune system) (15, 16, 17).

Results of some studies show that women were experiencing more stress than men. This finding might be explained by the fact that usually women are more sensitive (18) and probably they could be affected by environmental stress factors easier. Moreover women could feel more responsible for the family. However, some studies reported no difference in stress among men and women (19, 20). The participants of our study were mostly women (66.66%). Presumably they were experiencing more frequently stress.

Table: Contingency Table

L e v e l o f S t r e s s	F i r s t Y e a r	Se co nd Y e a r	T h i r d Y e a r	F i n a l Y e a r	Inte rnsh ip	Pos t Gra dua te	To tal No of stu de nts as per str ess lev el
1	3	7	5	5	4	4	28

- 6							
7 - 1 2	7	6	6	1 0	7	6	42
1 3 - 1 7	5	3	6	1 0	4	5	33
1 8 +			4	4	3		11

In order to cope with stress more effectively, dental students should learn how to concentrate and pay

Chi-square Statistic:	13.279
Degrees of Freedom:	15
P-value:	0.5810

attention to other things and engage in sport activities (aerobic exercise), relaxing activities (meditation, yoga) starting early as being a student (8). Moreover, mandatory subjects of studies should include: financial business management, psychology and oratory. Knowledge and experience obtained in special courses would be beneficial for young dentists in communication with different patients, gain self-confidence and deal with stressful situations (25). All of this could be useful at their work, when they will be given a lot of responsibility. Such seminars for medical practitioners should be organized periodically to reduce stress and achieve highest quality of work.

Strengths and Limitations

The limitation of study is big gender difference (man 39.47%, women 60.52% respectively), however it represents the man: women ration among private dental colleges where women are dominating. Participation dentists of all specializations within dentistry are strength.

Conclusion

Stress is more experienced by Final Year dental students and then third year dental students and they should be encouraged to take stress management course to cope with.

References:

1. Carver CS, Connor-Smith J. Personality and coping. *Annu Rev Psychol* 2010;61: 679-704.
2. Mackay C, Cox T, Burrows G, Lazzerini T. An inventory for the measurement of self-reported stress and arousal. *Br J Soc Clin Psychol* 1978; 17: 283-284.
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. 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.
6. Szabo S, Tache Y, Somogyi A. The legacy of Hans Selye and the origins of stress research: a retrospective 75 years after his landmark brief ‘letter’ to the editor of nature. *Stress*. 2012;15:472–8
7. Kay EJ, Lowe JC. A survey of stress levels, self-perceived health and health related behaviours of UK dental practitioners in 2005. *Br Dent J* 2008; 204:E19.
8. Henzi D, Davis E, Jasinevicius R, Hendricson W. In the students’ own words: what are the strengths and weaknesses of the dental school curriculum? *J Dent Educ* 2007; 71: 632–645.
9. Divaris K, Barlow PJ, Chendea SA, Cheong WS, Dounis A, Dragan IF et al. The academic environment: the students’ perspective. *Eur J Dent Educ* 2008; 12 Suppl 1:120–130.
10. Alzahem AM, van der Molen HT, Alaujan AH, Schmidt
11. 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.
12. 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.
13. Morse Z, Dravo U. Stress levels of dental students at the Fiji school of medicine. *Eur. J Dent. Educ*. 2007;11:99-103.
14. 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.
15. Gorter RC, Eijkman MA, Hoogstraten J. Burnout and health among Dutch dentists. *Eur J Oral Sci* 2000; 108:261–7
16. Newton JT, Mistry K, Patel A et al. Stress in dental specialists: a comparison of six clinical dental specialties. *Prim Dent Care* 2002;9:100–104.
17. Myers HL, Myers LB. 'It's difficult being a dentist': stress and health in the general dental practitioner. *Br Dent J* 2004;197(2):89-93
18. Puriene A, Aleksejuniene J, Petrauskiene J, Balciuniene I, Janulyte V. Occupational hazards of dental profession to psychological wellbeing. *Stomatologija, Baltic Dental and Maxillofacial Journal* 2007; 9:72-78.
19. te Brake H, Bloemendal E, Hoogstraten J. Gender differences in burnout among Dutch dentists. *Community Dent Oral Epidemiol* 2003;31(5):321-7.
20. Al-Zubair NM, Al-ak'hali MS, Ghandour IA. Stress among dentists in Yemen. *Saudi J Dent Res* 2015; 6:140–5.
21. Stress and associated factors among dentists Guostė Antanavičienė1, Monika Zaleckytė1, Julija Narbutaitė1, 2
22. Assessment of stress among dental students: A descriptive cross-sectional study Dr. A Vinita Mary, R Kesavan, D Ranjani, Arose Nisa Alee N, Sanjana Boopathy and Keerthi Lakshme