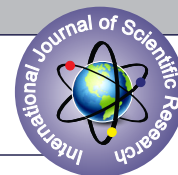


ASSESSMENT OF STRESS PERCEIVED IN DENTAL STUDENTS: A QUESTIONNAIRE SURVEY



Dental Science

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ABSTRACT

AIM: The aim was to investigate perceived sources of stress among dental students in Sri Rajiv Gandhi Dental College, Bangalore.

MATERIALS & METHODS: A total number of 256 students participated in the survey. A modified version of the Dental Environment Stress questionnaire was used to measure the sources of stress. The questionnaire included six main groups: Workload, Faculty & administration, Clinical training, Performance pressure, Self-efficacy beliefs, Intra and inter-personal related.

RESULTS: The stress levels were higher amongst senior students. The highest levels of stress perceived was during clinical training and due to performance pressure.

CONCLUSION: Students during clinical training period exhibited higher levels of stress. There is a need for establishment of student advisors and counselors combined with faculty advising system in addition to student-oriented programs.

KEYWORDS

Introduction:

Dentistry is recognized as a highly stressful profession and dental education is also included as being a stressful learning environment due to the dental profession requiring interpersonal skills and clinical competencies as well as theoretical knowledge.^{1,2}

Stress in dental students is multifactorial, arising from both the academic and socio-cultural environment, and attributable to social support issues (emotional and financial).³ The concern of clinical students is similar to those of qualified practitioners. In addition to stress related to studies and student life dental students have to face stress related to dentistry as a profession and increasing stress may result in declining student performance. Based on a person's system of beliefs and attitudes, high levels of stress can result in mental and/or physical ill health, substance misuse, absenteeism and diminished efficiency at work or learning.⁴

Materials and methods:

Study design:

This Questionnaire based survey was conducted during September 2015 and October 2015. Questionnaire was distributed to students during class hours for each year with prior permission from Dean of the Institution.

Ethical approval:

Ethical approval for conducting survey was obtained from the ethical committee conducted in Sri Rajiv Gandhi College of Dental Sciences and Hospital.

Participants:

A total of 256 undergraduate dental students registered with Sri Rajiv Gandhi College of Dental Sciences and Hospital, Bengaluru, were approached to participate in the survey.

Informed consent:

Participants were informed about the Questionnaire based survey and verbal consent was obtained from the participants.

Inclusion Criteria:

All willing students who were present on the day of survey were included.

Exclusion Criteria:

Students who were absent on the day of survey were excluded.

Questionnaire design:

A modified version of the dental environment stress questionnaire was used to measure sources of stress in the participants. The questionnaire consisted six sections that included workload, faculty and administration, clinical training, performance pressure, self-efficacy beliefs and intra & inter-personal related. Each consisted of four questions each.

Table 1: Questionnaire Survey:

I WORKLOAD:		
1.	Amount of assigned work	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
2.	Lack of time to do assigned work	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
3.	Difficulty of the course work	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
4.	Fear of being unable to keep up with workload	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
II FACULTY & ADMINISTRATION:		
5.	Rules and regulations of the departments	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
6.	Inconsistency of feedback on your work among different instructors	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
7.	Learning environment created by faculties	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
8.	Your expectations of professional college versus reality	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
III CLINICAL TRAINING:		
9.	Difficulty in learning clinical procedures	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
10.	Managing patients	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
11.	Working on patients with poor personal hygiene	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
12.	Difficulty in learning manual skills required for lab work	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
IV PERFORMANCE PRESSURE:		
13.	Examination and grades	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
14.	Competition with classmates	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
15.	Performance in practicals	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
16.	Fear of criticism if lack of good performance	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5

V	SELF EFFICACY BELIEFS	
17.	Lack of confidence in your career decision	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
18.	Lack of confidence to be successful professional student	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
19.	Fear of failing course	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
20.	Insecurity concerning your professional future	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
VI	INTRA & INTER PERSONAL RELATED:	
21.	Relationships with other members of the class	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
22.	Marital responsibilities	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
23.	Financial responsibilities	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
24.	Personal physical health	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5

Each stressor was rated based on five point Likert Scale, which included:

- 1 = not pertinent
- 2 = not stressful
- 3 = slightly stressful
- 4 = moderately stressful
- 5 = very stress

Assessment of stress perceived in participants were recorded based on above mentioned five point Likert scale and in addition they were asked to mention their gender and academic year.

Statistical analysis:

The statistical package for social sciences (SPSS) software was used for data processing and data analysis. Mean values and standard deviations were calculated for each stressor. Analysis of variance (ANOVA) was used to compare scores by gender, year of study and to determine differences in perception of stress across clinical and preclinical years. Scheffé's test (pair-wise) was used to assess difference between pairs of individual years. Each stressor significance was assessed using Chi-square test. 'p' value less than or equal to 0.05 was considered significant.

Results:

Demographic distribution:

Among a total of 256 participants, 67 (26.2%) were male and 189 (73.8%) were female. Based on the academic year, among these 256 participants, 52 (20.3%) were 1st year, 75(29.3%) were 2nd year, 72(28.1%) were of 3rd year and 57(22.3%) were 4th year.

Table 2.1: Demographic distribution based on gender:

Gender	Frequency	Percent
Male	67	26.2
Female	189	73.8
Total	256	100.0

Table 2.2: Demographic distribution of academic year:

Year	Frequency	Percent
1st Yr	52	20.3
2nd Yr	75	29.3
3rd Yr	72	28.1
4th Yr	57	22.3
Total	256	100.0

Table 3 : showing Chi square test values and p values for all questions :

Questions	Value	'p' value
WQ1	33.736	<0.01*
Wq2	23.280	0.06
WQ3	7.996	0.535
WQ4	3.861	0.277
FQ1	2.362	0.501
FQ2	.124	0.989
FQ3	3.172	0.529
FQ4	1.609	0.809
CQ1	6.628	0.157
CQ2	2.430	0.657
CQ3	4.218	0.377
CQ4	2.117	0.714

PQ1	8.112	0.088
PQ2	4.958	0.292
PQ3	19.857	0.019*
Pq4	7.928	0.048*
SQ1	24.786	0.016*
SQ2	17.501	0.132
SQ3	17.328	0.044*
SQ4	15.285	0.226
IQ1	2.861	0.581
IQ2	6.781	0.148
IQ3	4.216	0.378
IQ4	1.611	0.807

*p value significant

Workload:

Workload question 1 (Wq1), WQ2 and WQ3 showed participants were slight to moderately stressful while in WQ4 it was moderate to very stressful. None of the results under workload except WQ4 was statistically significant. The results shows that fear of being unable to keep up with workload was most stressful for dental students, and this stress was greatest in final year students.

	WQ1				Total
	Not Stressful	Slightly Stressful	Moderately Stressful	Very Stressful	
1st Yr	10	26	14	2	52
	19.2%	50.0%	26.9%	3.8%	100.0%
2nd Yr	3	38	28	6	75
	4.0%	50.7%	37.3%	8.0%	100.0%
3rd Yr	5	31	22	14	72
	6.9%	43.1%	30.6%	19.4%	100.0%
4th Yr	0	18	25	14	57
	.0%	31.6%	43.9%	24.6%	100.0%
Total	18	113	89	36	256
	7.0%	44.1%	34.8%	14.1%	100.0%

Faculty and administration:

In consider to faculty and administration, the results showed that students perceived slight to moderate stress, and the values were not statistically significant.

Clinical training:

The results showed that students perceived slight to moderate stress, and the values were not statistically significant.

Performance pressure:

Performance pressure question 1 (PQ1) and PQ2 showed participants were slight to moderately stressful while in PQ3 and PQ4 it was moderate to very stressful. The results of PQ3 and PQ4 were statistically significant. The results shows that fear of performing in practicals and fear of criticism with lack of good performance were most stressful for dental students. Performance pressure was greatest in final year students.

	PQ3				Total
	Not Stressful	Slightly Stressful	Moderately Stressful	Very Stressful	
1st Yr	7	25	12	8	52
	13.5%	48.1%	23.1%	15.4%	100.0%
2nd Yr	4	38	24	9	75
	5.3%	50.7%	32.0%	12.0%	100.0%
3rd Yr	3	35	25	9	72
	4.2%	48.6%	34.7%	12.5%	100.0%
4th Yr	1	16	26	14	57
	1.8%	28.1%	45.6%	24.6%	100.0%
Total	15	114	87	40	256
	5.9%	44.5%	34.0%	15.6%	100.0%

	PQ4				Total
	Not Stressful	Slightly Stressful	Moderately Stressful	Very Stressful	
1st Yr	5	17	19	11	52
	9.6%	32.7%	36.5%	21.2%	100.0%
2nd Yr	4	25	22	24	75
	5.3%	33.3%	29.3%	32.0%	100.0%

3rd Yr	3	24	20	25	72
	4.2%	33.3%	27.8%	34.7%	100.0%
4th Yr	2	11	19	25	57
	3.5%	19.3%	33.3%	43.9%	100.0%
Total	14	77	80	85	256
	5.5%	30.1%	31.3%	33.2%	100.0%

Self-efficacy beliefs:

Self-efficacy beliefs questions showed that participants were slight to moderately stressful. The values of SQ1 and SQ3 were statistically significant. Fear of career decision making and was greatest in 2nd year students while fear of failing course was greatest in final year students.

	SQ1					Total
	Not Pertinent	Not Stressful	Slightly Stressful	Moderately Stressful	Very Stressful	
1st Yr	1	6	23	13	9	52
	1.9%	11.5%	44.2%	25.0%	17.3%	100.0%
2nd Yr	0	8	22	25	20	75
	.0%	10.7%	29.3%	33.3%	26.7%	100.0%
3rd Yr	0	13	37	14	8	72
	.0%	18.1%	51.4%	19.4%	11.1%	100.0%
4th Yr	0	1	30	15	11	57
	.0%	1.8%	52.6%	26.3%	19.3%	100.0%
Total	1	28	112	67	48	256
	.4%	10.9%	43.8%	26.2%	18.8%	100.0%

	SQ3				Total
	Not Stressful	Slightly Stressful	Moderately Stressful	Very Stressful	
1st Yr	5	21	19	7	52
	9.6%	40.4%	36.5%	13.5%	100.0%
2nd Yr	8	29	21	17	75
	10.7%	38.7%	28.0%	22.7%	100.0%
3rd Yr	13	25	14	20	72
	18.1%	34.7%	19.4%	27.8%	100.0%
4th Yr	3	15	26	13	57
	5.3%	26.3%	45.6%	22.8%	100.0%
Total	29	90	80	57	256
	11.3%	35.2%	31.3%	22.3%	100.0%

Intra- and inter-personal related:

In consider to intra- and inter-personal relations, the results showed that students perceived no stress to slightly stressful, and the values were not statistically significant.

Discussion:

The main sources of stress have been investigated in several studies that were performed in various countries.

In this study, fear of being unable to cope up with workload, lack of confidence in career decision and to be successful professional and fear of criticism with lack of good performance were the main sources of stress perceived by dental students.

There was no statistical difference between stress found in males and females. This was in accordance with the study done by Sudhakar et al⁵ in 2012 and was in contrary to that reported by Kumar et al⁶ in 2009 in which males perceived more stress when compared to that of female.

Second year students had greatest stress of career decision making (33.3%) while it is in contrary to the study done by Sudhakar et al⁵ where examinations were the highest stress among second years.

Fear of failing the course (45.6%), fear of unable to cope up with workload (43.9%) and performance pressure (45.6%) was greatest in final year students.

Sudhakar et al⁵ in his study showed fourth year students perceived the atmosphere created by clinical supervisors as the highest stress provoking factor which was the third highest in study conducted by Kumar S et al⁶ (2009) on Indian students and Zac Morse et al⁷ (2007) on Fijian students.

In this study, fear of failing the course was highest in final year students this was in contrary with the studies that showed that this stress was highest in first and second years.^{8,9,10}

There was a trend of increasing overall mean stress scores over the years with a peak in the third year which is the transition to a greater clinical contact and may represent a problem for many students.^{6,7,11} This finding is in accordance with previous studies except one study in which first and second year students experienced more amount of stress than third and fourth years.¹² Others have found however that final year students show greater anxiety about the future.^{11,13,14}

Conclusion:

Stress levels were moderate to severe and were highest amongst senior students. Students during clinical training period exhibited higher levels of stress. There is a need for establishment of student advisors and counselors combined with faculty advising system in addition to student-oriented programs.

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