

Perceived sources of stress among Malaysian dental students

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ABSTRACT

Objective: Dental student training is known to be stressful and associated with physical and psychological distress, emotional exhaustion, and burnout. **Aim:** The aim of this study was to identify the stress provoking factors among students performing clinical tasks in a Malaysian Dental School. **Materials and Methods:** A modified dental environment stress questionnaire was distributed to 179 Bachelor of Dental Surgery students during the clinical years 3-5 and their responses are analyzed. **Results:** The most stress provoking factor was found to be “fear of failing the course or year” (72%) followed by “fear of facing parents after failure” (46%). The least stress provoking factors were related to personal issues such as personal physical health (48%) and lack of home atmosphere in living quarters (40%). Female students were found to be more stressful than the male students and financial responsibilities provoked only moderate amount of stress among many of the students. There was a significant difference in the overall stress levels perceived by students belonging to 3rd, 4th, and 5th year of study. **Conclusion:** The results of this study indicate that with the advent of newer teaching modalities, a more student friendly environment can be created so that detrimental consequences of stress can be reduced.

Key words

Dental students, education, stress

INTRODUCTION

Stress has been defined as the body’s non-specific response to demands made upon it, or to disturbing events in the environment.^[1] It is not just a stimulus or response, but rather, it is a process by which we perceive and cope with environmental threats and challenges.^[2,3] Dental students are known to be subjected to considerable levels of stress and anxiety during their training period and this has been demonstrated by various studies.^[4-10] Chronic stress due to anxiety can have adverse effects on academic and clinical performance. Because dental students generally report high levels of stress, they may be at particular risk, especially while performing clinical tasks.

Studies conducted on stress among dental students of

various populations report consistent findings. Specific sources of stress mainly include factors relating to practice of clinical dentistry, patient management; need to meet academic and clinical requirements and interactions with clinical instructors, support staff as well as family members.^[10-12]

This multifactorial stress arising from both academic and socio-cultural environments can be attributed to social support issues, both emotional and financial. Students, during their clinical years of study are particularly susceptible.^[13]

Dental education in private dental colleges in Malaysia can be expensive, forcing many students to apply for student loans. The burden of towering financial responsibility combined with performance pressure and the need to cope well with the academic environment can be quite stressful for dental students. The present study focuses on the factors affecting stress among Malaysian dental students and the correlation between financial responsibilities and stress levels. This study was aimed at identifying the stress provoking factors among dental students performing clinical tasks in a Malaysian private dental school. Furthermore, a correlation between financial responsibilities and stress levels was analyzed.

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MATERIALS AND METHODS

The study was carried out with the approval of the ethical committee of Penang International Dental College, which is one of the first few private dental schools in Malaysia. The undergraduate Bachelor of Dental Surgery (BDS) program is 5 years twinning program, with 2 years of pre-clinical studies in India and 3 years of clinical studies in Malaysia. The present study was limited to the students in their clinical years of the program.

The study sample consisted of all dental students belonging to 3rd, 4th, and 5th year of BDS program. The purpose of this study was communicated in advance to the students and their participation was voluntary. The dental environment stress (DES) questionnaire^[6] was modified slightly to suit the Malaysian background and was distributed among the students. It consists of 38 questions, which aptly describe the stress provoking factors in a dental set-up. The responses were recorded on a 5 point Likert scale as score 1 = “not stressful at all,” score 2 = “somewhat stressful,” score 3 = “moderately stressful,” and score 4 = “very stressful.” Score 5 was used to denote a question, which was not applicable.

The results were subjected to statistical analysis using the SPSS software version 19. The means and standard deviation were determined for stress scores of individuals for each item and were used to compare the gender and year of study. Analysis of variance (ANOVA) was used to test the mean differences of levels of stress by the year of study. A *P* value of less than 0.05 was considered statistically significant.

RESULTS

A total of 179 students were enrolled in the 3 clinical years of the BDS program and the DES questionnaire was distributed among all of them. Out of the 179 questionnaires that were distributed, only 142 were returned and found to be satisfactorily completed, making the response rate at 79.3%. The age group of the study population ranged between 21 years and 24 years. Gender distribution of the study population was 49 males (35%) and 93 females (65%). The response rate of the female students was found to be higher than that of the male students [Table 1].

For ease of understanding the 38 questions were categorized into 4 major categories namely,

“academic performance pressure,” “patient and clinic responsibilities,” “faculty relations,” and “personal issues” [Tables 2-5]. The most stress provoking factor, which was consistent with male and females students of all years was under the academic performance pressure category, the “fear of failing the course or year” (72%) followed by personal issues like “fear of facing parents after failure” (46%). The least stress provoking factors were also related to personal issues, such as personal physical health (48%) and lack of home atmosphere in living quarters (40%).

ANOVA to test the mean differences in levels of stress by the year of the study was conducted and it was found to be significant for the following stressors: Amount of assigned class work, attendance and success in medical subjects, difficulty in understanding literature, responsibilities for comprehensive patient care, working on patients with poor personal hygiene, relationships with other members of the class, marital/relationship adjustment problems, lack of home atmosphere in living quarters, lack of time for relaxation, considering entering some other field of work/dentistry not being your choice of career and competition with peers for grades. With respect to the remaining stressors, the difference was not found to be significant. However, the *t*-ratios showed that the mean differences between the 4th year and 5th year students were found to be significant with respect to stressors such as examinations and grades, fear of failing course or year and their expectations of professional school versus the reality. Similarly, between 3rd year and 5th year students the mean difference was significant in case of managing a child patient, difficulty in learning clinical procedures and protocols and lack of input into the decision making process of the school. Between 3rd year and 4th year students, the mean difference was significant in case of lack of adequate clinical staff in clinics or availability of staff in clinics [Tables 6-9].

Female students were found to be more stressed than the male students. A significant mean difference in stress levels between male and female students was noticed in case of attendance and success in medical subjects, completion of quota or meeting the deadlines, lack of confidence in self to be a successful student and lack of time for relaxation at 5% level and in case of receiving criticism about work at 1% level. In the remaining cases, the average stress levels between male and female students are not found to be significant [Tables 10-13].

The students were asked to mention whether or not they had applied for any study loan to finance their course and the total number of students who did apply were 28 (19.7%); 19 male and 9 female. Financial responsibilities/repaying the education loan were found to provoke only moderate amount of stress in a majority of these students.

Table 1: Sample description by gender and year of study

Year of study	Male	Female	Total	Response rate %
3 rd year	27	38	65	100
4 th year	14	37	51	76.1
5 th year	8	18	26	55.3
Total	49	93	142	79.3

Table 2: Percentage distribution of responses (academic performance pressure)

Sources of stress	Score 1	Score 2	Score 3	Score 4	Score 5
Academic performance pressure					
Amount of assigned class work	9.2	35.9	33.8	21.1	0.0
Lack of time to do assigned school work	7.7	30.3	37.3	23.9	0.7
Difficulty of class work	14.1	44.4	33.1	8.5	0.0
Lack of time between seminars and laboratories or clinics	15.5	20.4	24.6	38.0	1.4
Attendance and success in medical subjects	16.9	27.5	29.6	23.9	2.1
Examinations and grades	4.2	14.1	34.5	45.1	2.1
Completion of quota/meeting the deadlines	1.4	16.9	31.0	49.3	1.4
Fear of failing course or year	5.6	10.6	10.6	71.8	1.4
Completing graduation requirements	5.6	13.4	34.5	45.1	1.4
Fear of being unable to catch up with the work load	2.1	26.1	34.5	37.3	0.0
Difficulty in understanding literature	19.0	39.4	31.0	7.7	2.8

Table 3: Percentage distribution of responses (patient and clinic responsibilities)

Sources of stress	Score 1	Score 2	Score 3	Score 4	Score 5
Patient and clinic responsibilities					
Responsibilities for comprehensive patient care	16.2	33.1	35.9	14.8	0.0
Patients being late or not showing for their appointments	11.3	26.1	35.2	20.4	7.0
Lack of communication or cooperation with patients	13.4	35.2	31.0	18.3	2.1
Managing a child patient	9.9	33.8	30.3	21.8	4.2
Working on patients with poor personal hygiene	13.4	28.2	37.3	20.4	0.7
Difficulty in learning precision manual skills required in preclinical and laboratory work	10.6	31.7	35.2	21.1	1.4
Difficulty in learning clinical procedures and protocols	18.3	34.5	33.8	12.7	0.7

Table 4: Percentage distribution of responses (faculty relations)

Sources of stress	Score 1	Score 2	Score 3	Score 4	Score 5
Faculty relations					
Lack of adequate clinical staff in clinics/availability of staff in clinics	14.8	30.3	30.3	24.6	0.0
Atmosphere created by clinical faculty	15.7	27.1	30.0	23.6	3.6
Inconsistency of feedback on your work between different instructors	9.2	19.7	34.5	34.5	2.1
Rules and regulations of the school	16.9	20.4	28.2	31.0	3.5
Lack of input into the decision-making process of school	8.5	26.8	33.1	28.2	3.5
Receiving criticism about work	7.7	26.8	39.4	22.5	3.5

DISCUSSION

Stress can have detrimental effects on dental students and it is known to be associated with physical and psychological distress, emotional exhaustion and burnout.^[5] The objective of the present study was to identify the perceived sources of stress among Malaysian dental students. Malaysian culture is diverse with students coming from various ethnic backgrounds. This study draws its strength from the fact that it has been conducted in a private dental school in Malaysia where there is a mixed population of students belonging to different ethnicities, educational, and socio-economic backgrounds.

The results of this study do echo some of the findings consistent with international literature and also have

subtle differences with studies conducted in other local universities. As the study was limited to the three clinical years of BDS program, the peak stress provoking factors could be better understood. Fear of failing the course or year and fear of facing parents after failure were consistently reported to be the most stress provoking factor across all three years of the present study and internationally as well. This study brings out the fact that there is a high level of mental and physical stress among dental students and the transition into clinical training specifically puts students through a lot of distress.

The most stress provoking factors among the 3rd year male and female students was the “fear of failing a course,” followed by fear of facing parents after failure; attendance and success in medical subjects. Difficulty in learning precision manual skills required in

Table 5: Percentage distribution of responses (personal issues)

Sources of stress	Score 1	Score 2	Score 3	Score 4	Score 5
Personal issues					
Lack of confidence in self to be a successful student	14.1	24.6	33.1	24.6	3.5
Your expectation of professional school versus the reality	6.3	33.8	32.4	24.6	2.8
Lack of confidence in self to be a successful dentist	16.2	27.5	31.0	21.1	4.2
Relationships with other members of the class	36.6	34.5	16.9	7.7	4.2
Financial responsibilities/repaying education loan	22.5	26.8	20.4	20.4	9.9
Marital/relationship adjustment problems	33.1	21.8	12.0	12.0	21.1
Personal physical health	47.9	23.2	16.2	6.3	6.3
Lack of home atmosphere in living quarters	39.4	29.6	10.6	9.2	11.3
Insecurity concerning professional future	21.1	28.9	29.6	16.9	3.5
Working while studying	16.9	16.2	18.3	13.4	35.2
Lack of time for relaxation	9.9	27.5	28.2	31.0	3.5
Fear of facing parents after failure	5.6	17.6	24.6	45.8	6.3
Considering entering some other field of work/dentistry not being your choice of career	23.9	21.8	17.6	17.6	19.0
Competition with peers for grades	19.7	28.2	23.9	22.5	5.6

Notes: Score 1 – Not stressful at all; Score 2 – Somewhat stressful; Score 3 – Moderately stressful; Score 4 – Very stressful; Score 5 – Not applicable

Table 6: Mean scores of dental environmental stress by year of study and comparison of mean scores between the years (ANOVA) (Academic performance pressure)

Sources of stress	Year 3		Year 4		Year 5		Total		Sig. level F ratio	(3,4)	(3,5)	(4,5)
	Mean	SD	Mean	SD	Mean	SD	Mean	SD				
Academic performance pressure												
Amount of assigned class work	2.89	0.90	2.55	0.83	2.35	0.98	2.67	0.91	0.02*	0.04*	0.01*	0.35
Lack of time to do assigned school work	2.84	0.88	2.76	0.93	2.65	0.94	2.78	0.90	0.66	0.64	0.37	0.61
Difficulty of class work	2.45	0.90	2.39	0.75	2.08	0.74	2.36	0.83	0.15	0.73	0.06	0.11
Lack of time between seminars and laboratories or clinics	2.83	1.17	2.98	0.97	2.73	1.19	2.86	1.10	0.51	0.46	0.71	0.35
Attendance and success in medical subjects	2.24	1.02	2.81	0.98	1.96	0.96	2.62	1.04	0.001**	0.70	0.001**	0.001**
Examinations and grades	3.23	0.86	3.39	0.73	2.92	1.00	3.23	0.85	0.083	0.33	0.12	0.03*
Completion of quota/meeting the deadlines	3.23	0.82	3.39	0.75	3.29	0.86	3.30	0.80	0.563	0.29	0.75	0.62
Fear of failing course or year	3.53	0.83	3.65	0.80	3.16	1.18	3.51	0.90	0.082	0.49	0.08	0.03*
Completing graduation requirements	3.09	0.96	3.40	0.70	3.12	0.99	3.21	0.89	0.16	0.07	0.92	0.18
Fear of being unable to catch up with the work load	3.08	0.87	3.14	0.82	2.92	0.84	3.07	0.85	0.58	0.70	0.44	0.30
Difficulty in understanding literature	2.46	0.97	2.27	0.76	1.84	0.62	2.28	0.87	0.009**	0.24	0.002**	0.041

SD – Standard deviation; NS – Not significant; *Significant at 5% level; **Significant at 1% level

Table 7: Mean scores of dental environmental stress by year of study and comparison of mean scores between the years (ANOVA) (patient and clinic responsibilities)

Sources of stress	Year 3		Year 4		Year 5		Total		Sig. level F ratio	(3,4)	(3,5)	(4,5)
	Mean	SD	Mean	SD	Mean	SD	Mean	SD				
Patient and clinic responsibilities												
Responsibilities for comprehensive patient care	2.51	0.99	2.61	0.85	2.23	0.95	2.49	0.94	0.245	0.56	0.20	0.096
Patients being late or not showing for their appointments	2.67	1.00	2.67	0.93	2.81	0.90	2.70	0.95	0.80	0.97	0.55	0.54
Lack of communication or cooperation with patients	2.48	1.00	2.68	0.84	2.50	1.03	2.55	0.95	0.50	0.26	0.91	0.44
Managing a child patient	2.79	0.95	2.71	0.91	2.31	0.93	2.67	0.94	0.086	0.68	0.03*	0.08
Working on patients with poor personal hygiene	2.69	0.99	2.86	0.90	2.19	0.83	2.65	0.95	0.011*	0.32	0.02*	0.003**
Difficulty in learning precision manual skills required in preclinical and laboratory work	2.78	0.89	2.71	0.91	2.35	1.02	2.68	0.93	0.12	0.68	0.043*	0.103
Difficulty in learning clinical procedures and protocols	2.55	0.97	2.40	0.81	2.08	1.01	2.41	0.93	0.09	0.38	0.03*	0.15

SD – Standard deviation; NS – Not significant; *Significant at 5% level; **Significant at 1% level

preclinical and laboratory work was also rated as highly stress provoking by the 3rd year students. In respect

to the academic performance pressure, the 3rd year students expressed more concern over the difficulty in

Table 8: Mean scores of dental environmental stress by year of study and comparison of mean scores between the years (ANOVA) (faculty relations)

Sources of stress	Year 3		Year 4		Year 5		Total		Sig. level F ratio	(3,4)	(3,5)	(4,5)
	Mean	SD	Mean	SD	Mean	SD	Mean	SD				
Faculty relations												
Lack of adequate clinical staff in clinics/availability of staff in clinics	2.48	0.99	2.86	0.92	2.65	1.20	2.65	1.01	0.12	0.04*	0.45	0.39
Atmosphere created by clinical faculty	2.68	1.02	2.68	0.96	2.46	1.17	2.64	1.03	0.63	0.99	0.37	0.38
Inconsistency of feedback on your work between different instructors	2.97	1.04	3.04	0.83	2.80	1.04	2.96	0.97	0.60	0.70	0.46	0.31
Rules and regulations of the school	2.95	1.06	2.82	0.99	2.19	1.17	2.76	1.09	0.010**	0.50	0.003**	0.016*
Lack of input into the decision-making process of school	3.02	0.93	2.77	0.90	2.52	1.00	2.86	0.95	0.07	0.17	0.03*	0.28
Receiving criticism about work	2.74	0.85	2.96	0.85	2.60	1.04	2.80	0.89	0.20	0.19	0.51	0.099

SD – Standard deviation; NS – Not significant; *Significant at 5% level; **Significant at 1% level

Table 9: Mean scores of dental environmental stress by year of study and comparison of mean scores between the years (ANOVA) (personal issues)

Sources of stress	Year 3		Year 4		Year 5		Total		Sig. level F ratio	(3,4)	(3,5)	(4,5)
	Mean	SD	Mean	SD	Mean	SD	Mean	SD				
Personal issues												
Lack of confidence in self to be a successful student	2.76	0.98	2.80	1.01	2.38	1.06	2.71	1.00	0.20	0.84	0.11	0.09
Your expectation of professional school versus the reality	2.75	0.99	2.96	0.83	2.43	0.73	2.78	0.90	0.07	0.22	0.14	0.02*
Lack of confidence in self to be a successful dentist	2.57	1.01	2.23	1.00	2.38	1.05	2.60	1.01	0.35	0.40	0.42	0.16
Relationships with other members of the class	2.19	1.05	1.76	0.78	1.74	0.81	1.96	0.94	0.02*	0.015*	0.048*	0.95
Financial responsibilities/repaying education loan	2.57	1.13	2.36	1.02	2.12	1.17	2.43	1.10	0.27	0.31	0.13	0.43
Marital/relationship adjustment problems	2.30	1.10	1.81	1.04	1.68	1.00	2.04	1.09	0.03*	0.032*	0.032*	0.68
Personal physical health	1.94	1.07	1.76	0.82	1.45	0.80	1.80	0.96	0.12	0.33	0.04	0.22
Lack of home atmosphere in living quarters	2.18	1.10	1.75	0.81	1.29	0.56	1.88	0.98	0.001**	0.022*	0.00**	0.064
Insecurity concerning professional future	2.52	0.95	2.34	1.04	2.42	1.17	2.44	1.02	0.64	0.34	0.66	0.76
Working while studying	2.49	0.99	2.43	1.22	2.29	1.16	2.43	1.09	0.82	0.83	0.53	0.67
Lack of time for relaxation	3.12	0.86	2.61	1.08	2.50	0.98	2.83	1.00	0.004**	0.006**	0.008**	0.641
Fear of facing parents after failure	3.22	0.96	3.20	0.96	3.04	0.91	3.18	0.94	0.72	0.88	0.42	0.52
Considering entering some other field of work/ dentistry not being your choice of career	2.59	1.12	1.94	1.04	2.43	1.12	2.36	1.12	0.024*	0.007**	0.57	0.097
Competition with peers for grades	2.84	1.11	2.35	0.93	2.00	1.00	2.52	1.07	0.002**	0.015*	0.001**	0.178

SD – Standard deviation; NS – Not significant; *Significant at 5% level; **Significant at 1% level

Table 10: Mean scores of dental environmental stress by gender and their significance in mean differences (academic performance pressure)

Sources of stress	Male		Female		Significance of mean difference (t ratio)
	Mean	SD	Mean	SD	
Academic performance pressure					
Amount of assigned class work	2.78	0.96	2.61	0.88	NS
Lack of time to do assigned school work	2.73	0.89	2.81	0.91	NS
Difficulty of class work	2.31	0.96	2.39	0.75	NS
Lack of time between seminars and laboratories or clinics	2.73	1.22	2.93	1.03	*
Attendance and success in medical subjects	2.88	0.90	2.48	1.08	NS
Examinations and grades	3.12	0.90	3.29	0.82	*
Completion of quota/meeting the deadlines	3.08	0.87	3.41	0.74	NS
Fear of failing course or year	3.42	1.06	3.55	0.80	NS
Completing graduation requirements	3.10	0.95	3.26	0.85	NS
Fear of being unable to catch up with the work load	2.90	0.96	3.16	0.77	NS
Difficulty in understanding literature	2.14	0.93	2.36	0.83	NS

SD – Standard deviation; NS – Not significant; *Significant at 5% level; **Significant at 1% level

Table 11: Mean scores of dental environmental stress by gender and their significance in mean differences (patient and clinic responsibilities)

Sources of stress	Male		Female		Significance of mean difference (t ratio)
	Mean	SD	Mean	SD	
Patient and clinic responsibilities					
Responsibilities for comprehensive patient care	2.49	0.96	2.49	0.93	NS
Patients being late or not showing for their appointments	2.61	1.02	2.74	0.92	NS
Lack of communication or cooperation with patients	2.40	0.92	2.63	0.96	NS
Managing a child patient	2.57	1.02	2.72	0.91	NS
Working on patients with poor personal hygiene	2.58	0.98	2.69	0.94	NS
Difficulty in learning precision manual skills required in preclinical and laboratory work	2.60	0.98	2.72	0.91	NS
Difficulty in learning clinical procedures and protocols	2.25	0.86	2.49	0.96	NS

SD – Standard deviation; NS – Not significant; *Significant at 5% level; **Significant at 1% level

Table 12: Mean scores of dental environmental stress by gender and their significance in mean differences (faculty relations)

Sources of stress	Male		Female		Significance of mean difference (t ratio)
	Mean	SD	Mean	SD	
Faculty relations					
Lack of adequate clinical staff in clinics/availability of staff in clinics	2.51	2.14	2.72	0.94	NS
Atmosphere created by clinical faculty	2.49	1.02	2.72	1.03	NS
Inconsistency of feedback on your work between different instructors	2.90	1.02	3.00	0.94	NS
Rules and regulations of the school	2.89	1.00	2.69	1.13	NS
Lack of input into the decision-making process of school	2.83	1.05	2.84	0.90	**
Receiving criticism about work	2.52	0.87	2.94	0.87	*

SD – Standard deviation; NS – Not significant; *Significant at 5% level; **Significant at 1% level

Table 13: Mean scores of dental environmental stress by gender and their significance in mean differences (personal issues)

Sources of stress	Male		Female		Significance of mean difference (t ratio)
	Mean	SD	Mean	SD	
Personal issues					
Lack of confidence in self to be a successful student	2.47	1.04	2.83	0.97	NS
Your expectation of professional school versus the reality	2.63	0.93	2.85	0.89	NS
Lack of confidence in self to be a successful dentist	2.38	1.10	2.71	0.96	NS
Relationships with other members of the class	1.94	1.02	1.97	0.90	NS
Financial responsibilities/repaying education loan	2.38	1.15	2.46	1.07	NS
Marital/relationship adjustment problems	2.24	1.12	1.89	1.05	NS
Personal physical health	1.80	1.02	1.79	0.92	NS
Lack of home atmosphere in living quarters	1.93	1.02	1.85	0.92	NS
Insecurity concerning professional future	2.32	1.06	2.50	1.00	NS
Working while studying	2.50	1.15	2.39	1.05	NS
Lack of time for relaxation	2.88	1.03	2.81	0.98	NS
Fear of facing parents after failure	3.13	1.09	3.21	0.85	NS
Considering entering some other field of work/dentistry not being your choice of career	2.17	1.09	2.46	1.13	NS
Competition with peers for grades	2.54	1.11	2.51	1.06	*

SD – Standard deviation; NS – Not significant; *Significant at 5% level; **Significant at 1% level

understanding literature; attendance and success in medical subjects than the 4th and 5th year students. This is understandable as 3rd year students are in a transition phase into clinical dentistry and have to deal with medical

subjects too. Interestingly, this finding has been reported from UK,^[11] West Indies,^[12] Australia,^[14] and Singapore,^[15] but not reported from studies performed in the United States of America.^[16]

The 4th year and 5th year students also found “fear of failing a course” as a primary stress provoking factor followed by examinations and grades. Patient related responsibilities and management along with the lack of time for relaxation were rated as moderately stress provoking. Stress related to patient and clinic responsibilities was found to be higher in the 3rd year and 4th year students when compared to the 5th year students. This may be due to the fact that by the 5th year of the course the students are more confident in patient management.

With regard to faculty relations, the 3rd year male and female students were considerably stressed by the inconsistencies in feedback of their work by different instructors when compared to 4th year and 5th year students. Similar findings were reported by other international studies.^[10-15] Majority of 4th year and 5th year students were of the opinion that receiving criticism about work was moderately stress-provoking.

The female students were found to perceive more stress than male students in the present study, which is again consistent with previous studies.^[4,6,10-12,14] Attendance and success in medical subjects, completion of quota or meeting the deadlines, lack of confidence in self to be a successful student and lack of time for relaxation were found to provoke more stress among female students in comparison to male students in the present study. In contrast to our study, male students were reported to be more stressed than female students in studies done on Indian dental students.^[13,17,18]

Increasing cost of professional education acts as a significant stressor for dental students.^[19] Financial responsibilities and repaying education loans were found to provoke only moderate amount of stress in our study. This is in comparison to some international studies showing moderate to severe stress levels^[13,17,20] and is in contrast with the studies performed by Naidu *et al.*^[12] and Acharya^[18] who reported minimal or no stress because of reasons such as parental financing and subsidized tuition fee as an education policy of the state.

The least stress provoking factors were “personal physical health” and “lack of home atmosphere in living quarters,” which is in contrast to the study conducted by Ahmad *et al.*^[21] who reported social and gender problems as least stress provoking factors.

This study was conducted in a dental school with a twinning program having the first two years (preclinical) being conducted in India and the next three (clinical) years of the course in Malaysia. The results of this study show that, like many of the studies conducted previously, traditional teaching methods, which are teacher-centric, may actually be a cause of concern. Shifting to a more student-centric model of the curriculum may benefit

the students by facilitating collective learning and interpersonal support among students.^[4] Our school was established 6 years ago with a firm traditional curriculum and teaching methodology. The dynamism of dental curricula happening world over motivated us to move toward a more student centered system with the inclusion of problem based learning and implementation of outcome based education. These changes have been introduced with the aim of increasing collaborative, constructive, contextual, and self-motivated learning for dental students. Establishment of student advisors and students counselors within the dental school, as recommended by Schwartz *et al.*^[22] combined with a strong mentor-mentee relationship can contribute to improvement in the educational environment. Bearing in mind that our dental school is relatively new, there is a scope for improvement in the teaching-learning methodology. Steps toward this improvement have already begun taking shape in the form of a strong mentor-mentee scheme, student feed-back sessions and a student friendly e-learning portal. It is important for dental schools to identify stress levels among its students when planning the curriculum and working environment for dental education, to create a more student-friendly, less stressful, and atmosphere.^[21]

The short comings of this study would be the poor response rate of students, which brings out the need for more encouragement for students to participate in such studies. As rightly pointed out by Murphy *et al.*, completion of the questionnaire itself would have been perceived by students as yet another task to be accomplished and too stressful to deal with.^[19]

Stress is known to be an inherent feature associated with any kind of professional education. The acceptable levels of stress are very hard to determine and may vary from culture to culture. Stress has been described as a “double-edged sword” that can either stimulate and motivate students or drastically reduce their performance.^[23]

CONCLUSION

Dental education has been infamous for provoking considerable amount of stress. Though the amount of stress induced may vary from country to country and from culture to culture, essentially performing clinical tasks can take a toll on the overall academic performance of dental students. With the implementation of newer teaching modalities, a more student friendly environment can be created so that detrimental consequences of stress can be reduced.

REFERENCES

1. Rosenham DL, Seligman ME. Abnormal psychology. 2nd ed. New York: Norton; 1989. p. 463-4.

2. Yusoff MS, Abdul Rahim AF, Yaacob MJ. Prevalence and sources of stress among universiti sains Malaysia medical students. *Malays J Med Sci* 2010;17:30-7.
3. Myers DG. Stress and health. In: *Exploring Psychology*. 6th ed. New York: Worth Publishers; 2005. p. 402.
4. Polychronopoulou A, Divaris K. Perceived sources of stress among Greek dental students. *J Dent Educ* 2005;69:687-92.
5. Wexler M. Mental health and dental education. *J Dent Educ* 1978;42:74-7.
6. Garbee WH Jr, Zucker SB, Selby GR. Perceived sources of stress among dental students. *J Am Dent Assoc* 1980;100:853-7.
7. Goldstein MB. Interpersonal support and coping among first-year dental students. *J Dent Educ* 1980;44:202-5.
8. Ponce M, Ponce A, Bardzinski M. Stress prevention for the dentist. *Clin Prev Dent* 1981;3:21-3.
9. Tisdelle DA, Hansen DJ, St Lawrence JS, Brown JC. Stress management training for dental students. *J Dent Educ* 1984;48:196-202.
10. Rajab LD. Perceived sources of stress among dental students at the University of Jordan. *J Dent Educ* 2001;65:232-41.
11. Heath JR, Macfarlane TV, Umar MS. Perceived sources of stress in dental students. *Dent Update* 1999;26:94-8.
12. 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;66:1021-30.
13. Kumar S, Dagli RJ, Mathur A, Jain M, Prabu D, Kulkarni S. Perceived sources of stress amongst Indian dental students. *Eur J Dent Educ* 2009;13:39-45.
14. Sanders AE, Lushington K. Effect of perceived stress on student performance in dental school. *J Dent Educ* 2002;66:75-81.
15. Yap AU, Bhole S, Teo CS. A cross-cultural comparison of perceived sources of stress in the dental school environment. *J Dent Educ* 1996;60:459-64.
16. Westerman GH, Grandy TG, Ocanto RA, Erskine CG. Perceived sources of stress in the dental school environment. *J Dent Educ* 1993;57:225-31.
17. Tangade PS, Mathur A, Gupta R, Chaudhary S. Assessment of stress level among dental school students: An Indian outlook. *Dent Res J (Isfahan)* 2011;8:95-101.
18. Acharya S. Factors affecting stress among Indian dental students. *J Dent Educ* 2003;67:1140-8.
19. Murphy RJ, Gray SA, Sterling G, Reeves K, DuCette J. A comparative study of professional student stress. *J Dent Educ* 2009;73:328-37.
20. Muirhead V, Locker D. Canadian dental students' perceptions of stress. *J Can Dent Assoc* 2007;73:323.
21. Ahmad MS, Md Yusoff MM, Abdul Razak I. Stress and its relief among undergraduate dental students in Malaysia. *Southeast Asian J Trop Med Public Health* 2011;42:996-1004.
22. Schwartz RM, Eigenbrode CR, Cantor O. A comprehensive stress-reduction program for dental students. *J Dent Educ* 1984;48:203-7.
23. Sugiura G, Shinada K, Kawaguchi Y. Psychological well-being and perceptions of stress amongst Japanese dental students. *Eur J Dent Educ* 2005;9:17-25.

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