

Evaluating Stress Level Causes by Studying Environment and Related Factors in Dental Students of Yazd Dental College in 2014

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Received: November 8, 2014; Revised: December 7, 2014; Accepted: December 15, 2014

Background: Studying dentistry environment is important to assess stress causes, which is harmful for educational system.

Objectives: The present study was accomplished to evaluate the level of stress caused by studying environment and related factors in dental students of Yazd, IR Iran.

Materials and Methods: This was a cross-sectional study accomplished on 150 dental students. Data collecting tools were the specific and standard questionnaire "Dental Environment Stress (DES)" and demographic questionnaire. For statistical analysis, t-test, analysis of variance (ANOVA), Tukey post hoc test and Pearson correlation coefficient test were used. Collected data was analyzed using SPSS ver.17.

Results: The total average of stress score was 1.4 ± 0.6 (Maximum: 4). Among the stressful fields, the maximum and minimum averages were related to academic job (1.8 ± 0.8) and personal factor (1.07 ± 0.7). Besides, there was a statistical significant difference in the average of stress score between girl and boy students ($P = 0.04$). In addition, there was a statistical significant difference between student's stress score in different academic years ($P = 0.003$), which was significantly more in students of fifth and sixth years of study.

Conclusions: Stress had a moderate level in dental students of study, which requires more attention. Due to the most level of stress in students of fifth and sixth years, it is recommended to take specific actions for this sensitive period of dentistry education.

Keywords: Stress Disorders, Traumatic, Acute; Dentistry; Mental Health

1. Background

Professional dentistry is stressful (1-3) and dental schools are among stressful educational environments (4-10). In addition to the stresses of clinical environment originating from the nature of dentistry field itself, students are exposed to stressors related to educational environment (11, 12). Symptoms associated with stress can lead to mental or physical illness, drug abuse and decrease learning efficiency (13). In addition, signs and symptoms such as sweating, psychological distress, anxiety, tension, losing self-confidence, nervousness, crying, irritability, feeling of guilt, shame, weight loss, physical complaints and tiredness were reported (14, 15). Stress has different causes among dentistry students (16, 17); however, in different researches different stressors were mentioned. Five major groups of stressors include life condition, personal properties, educational environment conditions, academic environment and clinical factors (14). Pressure caused by stressors in any job has an undesirable effect on individual and organization. Low motivation, job satisfaction and early fatigue are natural consequences of workplace stressors (18).

Several studies have been performed regarding the

stress of dental environment. Studies by Al-Saleh et al. showed that Arabic students have high levels of stress. Besides, it is specified that girl students have higher stress scores (19). Stress is not completely a negative fact, because it could be accounted as a promoting and adaptation factor, but it can have undesirable effects on physical and mental health, if not controlled properly (20). The study of Polychronopoulou and Divaris on Greek dental students showed that the fourth year students were most worried about their profession future and new entrants were very worried about lack of resting time (21). According to their opinion, perceived stressors by dental students were related to individual (gender, education level) and educational factors (curriculum type, population of class and cost of education) (22, 23). Besides, the mentioned researchers investigated change in stressful causes of Greek dental students in a longitudinal study, during educational period. It was specified that there is a lot of anxiety for exams; whereas, lack of self-confidence had the highest level in the second academic year (24). Few studies were accomplished regarding stress in dental students in Iran (24, 25); however, it seems that some

of the major stressors of dental educational environment are common and subjective (19, 21).

2. Objectives

The present study was performed to investigate the level of stress to find strategies and methods to defend against its consequences in Yazd dental students.

3. Materials and Methods

In this descriptive-sectional study, 150 dental students of Shahid Sadoughi University of Medical Sciences, studying in the academic year of 2013-14 were participated, including 84 girl students (56%) and 66 boys (44%). Twenty-five students (16.66%) were in the first, 29 students (19.33%) in the second, 21 students (14%) in the third, 28 students (18.67%) in the fourth, 28 students (18.67%) in the fifth and 19 students (12.67%) in the sixth year of academic education. Sampling was performed by census method. The inclusion criterion was student's satisfaction for participation in the study. The selected students were assured that their answers would be maintained confidential and would be used just for study report. Data collection tool was the standard questionnaire of Dental Stress Environment (DES) (24). Demographic characteristics (gender, year of academic education) and five fields including living location (items 1-3), personal factors (items 4-12), educational environment (items 13-18), academic practice (items 19-25) and clinical factors (items 26-37) were recorded. For measuring each stressor in each field, the criterion 0-4 was used including nothing, a little, some, much and very much, respectively. Collected data was analyzed using SPSS ver.17 (SPSS Inc., Chicago, IL, USA). T-test, analysis of variance (ANOVA), Tukey post hoc and Pearson's correlation coefficient test were used.

4. Results

In the present study, 150 dental students of Shahid Sadoughi University of Medical Sciences including 84 girl students (56%) and 66 boy students (44%) entered the study. Twenty-five students (16.66%) were in the first, 29 students (19.33%) in the second, 21 students (14%) in the third, 28 students (18.67%) in the fourth, 28 students (18.67%) in the fifth and 19 students (12.67%) in the sixth year of academic education. The final average of stress was 1.4 ± 0.6 (maximum of 4).

To classify stress scores, the score 0-3.1 was considered low, 1.31-2.6 as average and 2.61-4 as high stress, so 46% of students had average stress and 6.7% of them had high stress. Average, standard deviation and the maximum and minimum acquired scores from each field of the questionnaire are presented in Table 1. The maximum and minimum scores were related to academic job and personal factor, respectively. The average score of stressful fields according to gender is presented in Table 2. There was a significant statistical difference in the average score of stress between girl and boy students ($P = 0.04$), as stress in girl students was significantly more than boys (1.3 ± 0.6). Table 3 shows the average score of stressful fields in educated students. The results showed a significant difference between average stress score of students in different academic years ($P = 0.003$), as the level of stress was significantly more in the fifth- and sixth-year students. Based on Tukey Post hoc test, the average number of academic job in second, fifth and sixth year students was significantly different from first, third and fourth year students ($P < 0.05$). According to Pearson's correlation test, there was a positive and significant correlation between evaluated stressful fields (Table 4).

Table 1. Average, Standard Deviation, the Minimum and Maximum of Stressful Fields in Evaluated Students ^a

Evaluated Fields	Mean \pm SD	Minimum	Maximum	The Acquirable Score Range
Living location	1.4 ± 1.02	0	4	0-4
Personal factor	1.07 ± 0.7	0.1	3.1	0-4
Educational environment	1.5 ± 0.8	0	4	0-4
Academic job	1.8 ± 0.8	0	4	0-4
Clinical job	1.4 ± 0.8	0	3.6	0-4
Total stress (DES)	1.4 ± 0.6	0.3	3.1	0-4

^a Abbreviation: DES, dental environment stress.

Table 2. Determination and Comparison of the Average Score of Stressful Fields in Evaluated Students According to Gender Based on the Result of T-test ^{a,b}

Stressful Fields	Male	Female	P Value
Living location	1.2 ± 0.8	1.6 ± 1.09	0.01
Personal factor	1.08 ± 0.7	1.07 ± 0.7	0.8
Educational environment	1.4 ± 0.8	1.5 ± 0.8	0.2
Academic job	1.6 ± 0.7	2.09 ± 0.8	0.001
Clinical job	1.3 ± 0.7	1.5 ± 0.9	0.06
Total stress (DES)	1.3 ± 0.6	1.5 ± 0.7	0.04

^a Abbreviation: DES, dental environment stress.

^b Data are presented as mean \pm SD.

Table 3. Determination and Comparison of the Average Score of Stressful Fields in Evaluated Students According to Academic Year Based on the Result of Analysis of Variance (ANOVA) ^{a,b}

Stressful fields	First Year	Second Year	Third Year	Fourth Year	Fifth Year	Sixth Year	P value
Living location	1.6 ± 0.9	1.3 ± 1.1	0.8 ± 0.7	1.4 ± 0.9	1.7 ± 1.0	1.7 ± 0.9	0.02
Personal factor	1.08 ± 0.5	0.7 ± 0.5	0.5 ± 0.2	1.1 ± 0.6	1.3 ± 0.7	1.6 ± 0.9	0.000
Educational environment	1.4 ± 0.7	1.3 ± 0.7	0.8 ± 0.5	1.4 ± 0.8	1.8 ± 1.0	1.9 ± 0.9	0.001
Academic job							0.008
Academic year	1, 2, 3	2, 5, 6	1, 3, 4	1, 3, 4	2, 5, 6	2, 5, 6	
Score	1.8 ± 0.7	2.1 ± 0.9	1.2 ± 0.5	1.8 ± 0.8	2.07 ± 0.8	1.9 ± 0.6	
Clinical job	1.1 ± 0.8	1.3 ± 0.9	1.2 ± 0.6	1.7 ± 0.9	1.6 ± 0.9	1.5 ± 0.7	0.008
Total stress (DES)	1.1 ± 0.5	1.3 ± 0.6	1.02 ± 0.4	1.5 ± 0.7	1.7 ± 0.7	1.7 ± 0.6	0.003

^a Abbreviations: DES, dental environment stress.

^b Data are presented as mean ± SD.

Table 4. Correlation of Stressful Fields in Evaluated Students ^a

Stressful fields	Living Location	Personal Factor	Educational Environment	Academic Job	Clinical Job	Amenability	Total Stress (DES)
Living location	-						
Personal factor	r = 0.4, P = 0.000	-					
Educational environment	r = 0.5, P = 0.000	r = 0.6, P = 0.000	-				
Academic job	r = 0.3, P = 0.000	r = 0.4, P = 0.000	r = 0.6, P = 0.000	-			
Clinical job	r = 0.3, P = 0.000	r = 0.5, P = 0.000	r = 0.6, P = 0.000	r = 0.5, P = 0.000	-		
Total stress (DES)	r = 0.5, P = 0.000	r = 0.7, P = 0.000	r = 0.8, P = 0.000	r = 0.7, P = 0.000	r = 0.9, P = 0.000	r = 0.8, P = 0.000	-

^a Abbreviation: DES, dental environment stress.

5. Discussion

Stress is defined as beliefs and attitudes which one feels frequently (26). When someone exposes to a challenging environment, a wide range of psychological and emotional responses are triggered according to its severity and type (15). Stress is a double edged sword which can lead to stimulation and encouragement of students for gaining the maximum capability or decreasing their efficiency (26). In an overall view to student's ideas of this college, the average scoring to stressors in dental environment was 1.4 ± 0.6 . In the study of Kazemizadeh et al. (27), the average score of stress was 1.89 ± 0.54 . Dalband and Farhadinasab (25) performed a research using adjusted DES questionnaire (scoring scale 1-5) in Hamadan Dental School (Hamadan, IR Iran) and reported the overall average of recognized stress as 2.6 ± 0.5 in all students.

Naidu et al. (28) and Morse and Dravo (13) reported that the average of experienced stress was in a medium level in all students. In the present study, stressful fields were evaluated in all students separately and the result showed that the maximum perception of stress was related to academic job field. Among stressful fields, the maximum and minimum average scores were related to academic job (1.8 ± 0.8) and personal factor field (1.07 ± 0.7), respec-

tively. In the study of Amini et al. (29), the main causes of stress in students were academic job fields, academic factors and clinical education.

In this study, the average score of stress in girl students was significantly more than boys. In the study of Akbari and Nejat (24) and Sofola and Jeboda (16) performed on Nigerian dental students, there was no significant difference between gender and stress level.

Tangade et al. (30) on Indian students and Polychronopoulou and Divaris (23) in Greek reported more stress level in men, which is not compatible with the present study and is in correspondence with the study of Sugiyama et al. (26) on Japanese dental students and Dalband and Farhadinasab (25) on Hamadan students (Hamadan, IR Iran), which reported that stress was more in women than men. According to the results, girls are more vulnerable and sensitive to some specific aspects of dental environment. High stress levels in girls could be attributed to items the same as feeling more stress for being successful and also getting less support from friends (21). Besides, complete or partial failure to express concerns in boys has been mentioned (13, 19).

In the present study, stress level in fifth- and sixth-year

students was significantly more than others. Also in the study of Tangade et al. (30), the highest level of stress was reported in the last year students. In the study performed on dental students of University of Fiji (Fiji), the level of stress in the third year students was more than others and the fourth and fifth year students were in the next levels, respectively (13). In the study of Amini et al. (29), the highest level of stress was observed in the third year and in the study of Akbari and Nejat (24) and Dalband and Farhadinasab (25) was observed in the fourth year students. The difference could be due to differences in education curriculums and the stress of entering clinical stage in the third year. The limitation of this study, like other studies using questionnaire, was unresponsiveness of some samples. According to the results of this study, the highest levels of total stress were observed in students of fifth and sixth years (last years), also girl students were exposed to higher level of stress compared to boys.

Dental education has a long course and many stressors of dental academic environment exist. However, there is a direct association between stress decrease and mental and physical health and resulting improved function. Therefore, it is suggested to take actions including reevaluating the curriculums, changing the assessment way of students, preparing necessary facilities and equipment for education and clinical practice, leisure instruction, improving the quality and quantity of consulting programs, encouraging students to participate in exercise programs and preparing students with life facilities and necessary recreations to decrease stress in them.

Acknowledgements

We would like to thank the Vice-chancellor of Research and Technology, Shahid Sadoughi University of Medical Sciences, who approved this study.

Funding/Support

This study was funded by Shahid Sadoughi University of Medical Sciences.

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