

Evaluation of Stress Level of Dental Students at Their First Restorative Dentistry Clinical Course at Biruni University

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ABSTRACT

Objective: The aim of the study described here was to identify stress factors among students enrolled on their first restorative dentistry clinical course.

Patients and Methods: The study group consisted of 39 fourth-year undergraduate students enrolled on a restorative dentistry clinical course for the first time for the academic year 2017–2018. The students were surveyed using a modified version of the dental environmental stress (DES) survey.

Results: A total of 32 students out of 39 filled and returned questionnaires in the study, a response rate of 82.1 percent. The major causes of stress among dental students are, “worries about fulfilling the requirements for graduation” (90.6%), “fear of failing the course or year” (90.6%) and stressors related to the treatment of patients including “patients being late or not showing up for their appointments” (96.9%) and “fear of dealing with patients who have not disclosed the existence of a contagious disease” (83.6%).

Conclusions: The findings of this study show a considerable degree of stress amongst students enrolled on a restorative dentistry clinical course for the first time. Possible strategies for reducing stress among students in dental education at Biruni University should be considered.

Keywords: Stress, dental students, restorative dentistry, education

DIŞ HEKİMLİĞİ ÖĞRENCİLERİNİN İLK RESTORATİF DIŞ HEKİMLİĞİ KLİNİKLERİNDE STRES DÜZEYİNİN BİRÜNİ ÜNİVERSİTESİ'NDE DEĞERLENDİRİLMESİ

ÖZET

Amaç: Bu çalışmanın amacı, ilk kez restoratif diş hekimliği kliniğinde çalışan öğrencilerde strese sebep olan faktörlerin tespit edilmesidir.

Hastalar ve Yöntem: Çalışmaya, 2017-2018 akademik yılı sırasında ilk kez restoratif diş hekimliği klinik dersini alan 39 dördüncü sınıf öğrenci dâhil edilmiştir. Öğrenciler ile, modifiye dental çevre stresi anketi ile anket düzenlenmiştir.

Bulgular: Toplamda 39 öğrencinin 32'si anketi doldurmuştur. Dönüş oranı yüzde 82.1'dir. Diş hekimliği öğrencilerinde strese en çok neden olan başlıca sebepler, mezuniyet şartlarını tamamlama konusundaki endişeler (%90.6), dersten kalma veya yıl kaybetme korkusu (%90.6) and hastaların randevularına geçmesi veya gelmemesi (%96.9) ve bulaşıcı hastalığı belirtmen hasta tedavisi yapma (%83.6) gibi hasta tedavisi ile ilgili stres kaynaklarıdır.

Sonuçlar: Bu çalışmanın bulgularına göre, ilk kez restoratif diş hekimliği kliniğine başlayan öğrenciler arasında önemli oranda strese sahip olduğunu göstermektedir. Biruni Üniversitesi'nde diş hekimliği eğitiminde öğrencilerdeki stresin azaltılması için olası stratejilerin gözden geçirilmesi gerekir.

Anahtar sözcükler: Stres, diş hekimliği öğrencileri, restoratif diş hekimliği, eğitim

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Dental students encounter noticeable stress throughout their education and dental students experience higher levels of distress than the general public (1) due to the highly stressful nature of dental education. Clinical dental students must obtain training in both the theoretical and clinical aspects of dental care, a process which involves finding their own patients, being responsible for their care, and performing dental treatments, in addition to other clinical tasks and passing qualifying exams required to graduate (2).

Earlier studies have already indicated a markedly high level of psychological disturbance among dental students (3). In addition, intense interactions between the patient and clinician may precipitate a state of burnout, consisting of depersonalization, reduced personal accomplishment and emotional exhaustion (4). Studies furthermore indicate that nervousness in dental students worsens patients' distress during clinical treatments. It has been shown that several ways of behaving may be adopted to lessen patients' anxiety. Reassuring behaviour includes smiling, being friendly towards the patient, presenting a calm manner, and providing emotional support to the patient during the treatment. However, a distressed dental student may have trouble engaging in such reassuring behavior (5).

Numerous studies of a similar kind have been performed at various dental schools worldwide. The majority of these studies have been carried out by means of surveys that utilise the Dental Environment Stress (DES) Questionnaire and have reported significant increase in stress amongst dental students. In these previous studies, fulfilling the requirements to graduate and the fear of failing a course or academic year appear to be the major stressors (6).

Whilst increasing stress may result in decreased performance by students, high levels of stress may also result in a wide variety of physical and psychological complaints (7). Therefore, both the overall level of stress experienced by dental students on the restorative dentistry clinical course and the source of that stress are important. Biruni University is a recently founded institution. By determining at an early stage which are the major stress factors effecting students during their restorative dentistry courses, those who administer the faculty would be able to undertake the necessary improvements to dental education at an early stage in the history of the university. Thus, this particular study seeks to identify the sources of stress experienced by dental students during their first

clinical practice, the restorative dentistry course at Biruni University.

Materials and methods

Permission to carry out the study was first obtained from the directors' board of the dental school. Students were informed about the objective of the study, what was involved in being a participant and what procedure would be used. All students who had agreed to participate in the study were fully informed about the participants' rights to withdraw from the study at any time if they felt that their personal rights had in any way been violated or encroached upon during the study.

Fourth year dental students who were enrolled on the restorative dentistry clinical course for the first time at Biruni University in Istanbul, Turkey were selected as suitable participants. Thirty-nine students in total were included in this study. Questionnaires were distributed after completion of the restorative dentistry clinical course and the students were asked to submit the completed questionnaire at the end of the day. Students were instructed not to supply their names in order to ensure anonymity of responses.

Data were obtained in the form of scores on the dental environmental stress (DES) scale, which is a 30-item scale and adapted to accommodate both clinical and didactic aspects of dental training (8). This scale gets respondents to indicate how they feel about statements that address a particular problem from "1 = not stressful at all," to "4 = very stressful".

Descriptive statistics (percentage, mean, standard deviation, minimum and maximum) were compiled for the DES data. The independent sample t-tests were used to determine any differences in the DES data according to gender. Statistical significance was set at $p < 0.05$. Statistical tests were performed with the statistical package for social sciences (SPSS) version 17.

Results

A total of 32 students out of 39 filled in and handed over their questionnaires, corresponding to a response rate of 82.1 percent. The age ranged from 21 to 23 and mean age was 21.66 ± 0.7 years.

The results of applying the dental environment stress (DES) scale are presented in Table 1. The thirty stressor items were clustered into seven subgroups, following

Table 1. Dental environmental stress (DES) among dental students during their first restorative dentistry clinical course.

<i>Stress Items</i>	<i>Distribution of Replies (%)</i>					<i>Mean score (SD)</i>
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>3+4</i>	
Self-efficacy Beliefs						
1. Lack of confidence in self about becoming a successful dentist	28.1	53.1	15.6	3.1	19.7	1.94 ± 0.8
2. Fulfilling the requirements to graduate	3.1	6.3	28.1	62.5	90.6	3.50 ± 0.7
3. Fear of failing a course or academic year	0	9.4	37.5	53.1	90.6	3.44 ± 0.7
4. Lack of confidence in self to be a successful student	31.3	40.6	25	3.1	28.1	2.00 ± 0.8
Faculty and Administration						
5. Delay of receiving textbooks	25	21.9	43.8	9.4	53.2	2.38 ± 0.9
6. Lack of adequate clinical staff in the clinics	9.4	15.6	50.0	25.0	75.0	2.91 ± 0.9
7. Atmosphere created by clinical faculty	9.4	53.1	28.1	9.4	37.5	2.38 ± 0.8
8. Inconsistency feedback on your work from different instructors	3.1	15.6	46.9	34.4	81.3	3.13 ± 0.8
9. Rules and regulations of the school	3.1	40.6	21.9	34.4	56.3	2.88 ± 0.9
10. Lack of input into the decision-making process of the school	3.1	21.9	40.6	34.4	75	3.06 ± 0.8
Workload						
11. Amount of assigned class work	3,1	15,6	43,8	37,5	81,3	3.16 ± 0.8
12. Lack of time for relaxation	6,3	34,4	37,5	21,9	59,4	2.75 ± 0.9
13. Lack of time to do assigned schoolwork	15,6	59,4	21,9	3,1	25	2.13 ± 0.7
14. Difficulty of classwork	21,9	56,3	21,9	0	21,9	2.00 ± 0.6
15. Lack of time between seminars and laboratories or clinics	15,6	21,9	40,6	21,9	62,5	2.69 ± 0.9
16. Attendance and success in medical subjects	31,3	50	15,6	3,1	18,7	2.84 ± 0.4
Patient Treatment						
17. Patients being late or not showing for their appointments	0	3,1	50	46,9	96,9	3.69 ± 0.6
18. Fear of dealing with patients who undisclosed the existence of a contagious disease	0	9,4	12,5	78,1	83,6	3.44 ± 0.6
19. Lack of communication or cooperation with patients	31,3	50	15,6	3,1	18,7	1.91 ± 0.8
Clinical Training						
20. Difficulty in learning precision manual skills required in preclinical and laboratory work	15,6	40,6	31,3	12,5	43,8	2.41 ± 0.9
21. Difficulty in learning clinical procedures and protocols	12,5	53,1	31,3	3,1	34,4	2.25 ± 0.7
Performance Pressure						
22. Examinations and grades	6,3	9,4	43,8	40,6	84,4	3.19 ± 0.9
23. Competition for grades	3,1	9,4	34,4	53,1	87,5	3.38 ± 0.8
Social Stressors						
24. Insecurity concerning professional future	21,9	40,6	28,1	9,4	37,5	2.25 ± 0.8
25. Neglect for personal life	12,5	28,1	40,6	18,8	59,4	2.66 ± 0.9
26. Lack of self-assessment and awareness of own competences	12,5	53,1	25	9,4	34,4	2.31 ± 0.8
27. Financial responsibilities	12,5	31,3	37,5	18,8	56,3	2.63 ± 0.9
28. Cooperation with dental laboratory	3,1	34,4	34,4	28,1	62,5	2.88 ± 0.9
29. Lack of home atmosphere in the living quarters	40,6	50	6,3	3,1	9,4	1.72 ± 0.7
30. Working while studying	40,3	50	9,4	0	9,4	1.69 ± 0.6

1: Not stressful at all, 2: Somewhat stressful, 3: Quite stressful, 4: Very stressful

the scheme proposed by Polychronopoulou *et al.* (8), as follows: self-efficacy beliefs; faculty and administration; workload; patient treatment; clinical training; performance pressure; and social stressors. The most important stress factors as perceived by the students were those concerned with patient treatment, self-efficacy beliefs, performance pressure, faculty and administration, and workload. More precisely, a higher percentage of respondents rated the following factors as "quite stressful" or "very stressful": "patients being late or not showing up for their appointments" (96.9 percent), "fulfilling requirements for graduation" (90.6 percent), "fear of failing a course or academic year" (90.6 percent), "competition for grades" (87.5), "examinations and grades" (84.4 percent), "fear of dealing with patients who fail to disclose the existence of a contagious disease" (83.6 percent), and "different instructors giving inconsistent feedback" (81.3 percent). T-tests revealed no significant differences between the female and male students in DES ($p = 0.811$) (Table 2).

Table 2. Mean DES scores according to gender.

DES score	Male (n=8)	Female (n=24)	p
Total	80.25 ± 9.9	79.2 ± 9.7	.811
Self-efficacy Beliefs	10.87 ± 2.5	10.87 ± 1.75	1.0
Faculty and administration	17.37 ± 2.3	16.5 ± 2.9	.454
Workload	16.1 ± 1.64	15.37 ± 2.77	.478
Patient treatment	9.12 ± 1.5	9.00 ± 1.3	.819
Clinical training	4.87 ± 1.4	4.58 ± 1.6	.640
Performance pressure	6.00 ± 1.85	6.75 ± 1.4	.227
Social stressors	15.87 ± 2.9	16.21 ± 3.6	.812

Discussion

The results of the study reveal that students enrolled on restorative dentistry clinical course experience considerable stress and indicating that there are numerous work-related and academic stressors that contribute to this stress. It was also discovered that the principal causes of stress among dental students are worries about fulfilling the requirements to graduate and fear of failing a course or academic year, stressors involved in treating patients and performance pressure. This is consistent with previous reports (9, 10). Clinical students are expected to complete a certain number of cases, and they are required to treat patients with problems that correspond with their

requirements in a limited clinical time. This may explain why "patients being late or not showing up for their appointments" was rated as the greatest stressor (96.9%).

Inconsistent feedback from instructors was cited as the most significant faculty and administration-related stressor. The use of clinicians with different clinical backgrounds as clinical instructors undoubtedly results in inconsistencies (11). Student reports on conflicting teaching highlight the need to reach consensus on training competencies for dental instructors.

Previous studies have reported that those students who have less exposure to clinical dentistry found "difficulty in learning clinical procedures" to be more stressful than other students found (12). In contrast to those findings, we found in this study that the clinical training component of the restorative dentistry course was not one of the principal stressors. This finding implies that students did not consider learning the precision manual skills required for preclinical and laboratory work or the learning of clinical procedures and protocols for restorative dentistry as particularly difficult tasks within the clinical course.

Surprisingly, social stressors related to financial responsibilities and insecurity concerning their professional future were not found to represent major stressors, even though tuition fees at private institutions can be very high. One possible explanation for this would be that students who had registered for dental schools within foundation universities may be able to afford the education costs and thus experience less financial pressure. As expected, the fear of unemployment after graduation was also not a major stressor for these students. However, it should be remarked in this context that the cost of consumables used in the treatment of patients in the clinic is covered by the school at Biruni University. This reduces financial stress on the students during the clinical course.

The adverse effects of student stress on psychological well-being are well-documented in previous studies, however, this aspect was not covered in our research (3). Further research should incorporate standardized measures of psychological disturbance to permit a more detailed assessment of psychological well-being and its relation to dental school stress.

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