

The perception of stress levels in Dental Students of Dijlah University-Iraq

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Aim: To investigate the sources of stress that dental students self-report and to ascertain the impact of study level on the stresses that are felt.

Materials and methods: This survey is carried out among undergraduate dental students in the third, fourth and fifth years' levels at the Faculty of Dentistry in Dijlah University during the academic year 2023–2024. Dentistry students participated in a modified self-reported questionnaire. The Dental Environment Stress questionnaire, which was first created by Garbee et al, is adapted to measure dental environment stress. The 42 closed-ended questions were separated into seven domains. The statistical package for social sciences was used to analyze the data. For every stressor, the mean values and standard deviations were used to examine descriptive statistics.

Results: The questionnaire was completed by 300 dental students, the domain with the highest stressors was "Performance pressure" while the domain with the lowest stressors was "Self-efficacy belief". "Examinations and quizzes" was the most stressful question among the stressors, while "Inadequate number of instructors" was the least stressful. Frequencies, means, and comparisons between study participants with study levels were examined in the obtained data. We performed nonparametric tests with a 95% confidence range and an error of 0.05.

Conclusion: Dental students undergo a lot of pressures in their academic and professional lives. psychology courses have to be introduced to and taught at dentistry institutions or select student counselors and advisors to each student throughout their academic career to get their opinions on instructors and courses.

Keywords: stress; dental students; performance pressures.

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Introduction

"Stress" is the word used to describe external impacts, either psychologically or physically on a person's physical and mental well-being.¹ Stress is characterized as the sense of imbalance between one's ability to meet the demands of the environment and oneself. People experience stress when they see interactions between themselves and their surroundings as straining as or more than their capacity and endangering their well-being.^{2,3} Excessive pressure or various expectations placed on someone might lead to the development of stress.⁴

Stressors differ depending on a person's mindset, worldview, and cultural relate.⁵ Schools of dentistry are famous for their rigorous curricula and difficult classroom settings. Stress may cause both physical and psychological discomfort, which can have an impact on a student's performance. It can lead to a range of symptoms, including tension, anxiety, sadness, phobias, exhaustion, insomnia, gastrointestinal disturbances, irritability, and cynicism.⁶

There have been other earlier studies on students' academic stress. Some noted that an excessive amount of homework, peer pressure, fear of failing, strained relationships with instructors and other students, personal issues, frequent exams fear of exams, rigorous curriculum, nervous patients, difficult treatments, potential patient disputes, and little time to carry out and complete the scheduled treatment were the causes of their stress.⁷

Students go through a transitional phase when they first enroll at university because they are adjusting to a lot of changes in their social, intellectual, and personal lives. Stressful situations and events that are a part of university life might make it difficult for students to acclimate to their new surroundings.⁸

Dental schools are known for being extremely demanding and difficult places to study.^{9, 10} Iraqi universities offer a five-year dental course that spans ten semesters of college. Preclinical information is taught in the first three years of the program, while clinical training exercises, such as patient examinations and treatments, are done by students in the fourth and fifth years of the program.

The Dental Environment Stress (DES) questionnaire has been accustomed to identify and estimate the origins of environmental stress experienced by dental students.¹¹ The environment of learning, worry about failing, an intense workload, trouble managing patients, performing pressure, trouble adjusting to curriculum changes, and tense relationships with academic staff are some of the stressors that have been reported.^{12,13}

The main focus of earlier research has been on dentistry students' stress levels at particular times. According to the findings of these studies, first-year students had the least psychological stress levels and final-year students had the greatest levels.^{14, 15} This would appear to suggest that stress levels rose as dentistry school students advanced, but this assumption could not be confirmed because these studies were cross-sectional in nature.¹⁶

Determining stress levels, perceived causes, and contributing factors among dental students at Dijlah University was the target of the current study.

Materials And Methods

In order to investigate the sources of stress that dental students self-report and to ascertain the impact of study level on the stresses that are felt, this survey is carried out among undergraduate dental students in the third, fourth and fifth years' levels at the Faculty of Dentistry in Dijlah University during the academic year 2023–2024. The

ethics committee provided a letter of permission before the study got underway. The dental students were informed about the purpose and nature of the study, and their agreement was acquired.

The Dental Environment Stress (DES) questionnaire, which was first created by Garbee et al,²⁶ is adapted to measure dental environment stress. The Modified (DES) questionnaire is a widely used, validated tool that has been utilized in several investigations with related goals. Appendix 1 lists seven compound stress groups related to the dental health that are evaluated by the 42-item modified Dental Environment Stressor Scale (DES): using a 4-point Likert scale as a basis,

The questionnaire's results range from 1 to 4, with 1 denoting "not stressful" and 4 denoting "severely stressful" conditions.²⁷

1. Self-Efficacy Beliefs (9 items)
2. Faculty and Administration (10 items)
3. Workload (6 items)
4. Patient Treatment (6 items)
5. Clinical Training (2 items)
6. Performance Pressure (2 items)
7. Others (7 items)

When a question had nothing to do with the student's present situation, they were instructed to mark it as "not related" in their responses. For instance, a third-year student responding to a question on patient care with the options "no stress,"

Statistical Analyses

The statistical package for social sciences (SPSS) (version 25) was used to analyze the data. For every stressor, the mean values and standard deviations were used to examine descriptive statistics.

Results

A total of 350 students at all were requested to finish answering the survey, only 300 (65.7%) were responded. 125 (47.7%)

were males, while the remaining 175 (58.3%) were females (Table1).

According to the research year, the response rates for third-year students were 120 (40%), fourth-year students were 85 (28.3%), and fifth-year students were 95 (31.7%), Table 1 shows the participant distribution according to study level and gender.

Table 1: Characteristic of all participants

Study level	Number	%	Gender			
			Male	%	Female	%
Third level	120	40%	45	(37.5%)	75	(62.5%)
fourth level	85	28.3%	40	(47.1%)	45	(52.9%)
Fifth level	95	31.7%	40	(47.1%)	55	(57.8%)

The domain "performance pressure" is the most stressful among the domains with a mean (2.40+0.95). It showing a moderate level of tension among third level participants, as seen in Table 2. While, the domain "workload" is next, with a mean of (2.33+0.61). On the other hand, the domain with the least amount of stress was "Self-Efficacy Beliefs" with a mean of (1.64+0.42) demonstrating a decrease in participants' concern.

As a result of the shift from the preclinical to the clinical level, Students in their fourth year demonstrated greater levels of felt stress in the "performance pressure" items with a mean of (3.10+0.3); workload items with a mean of (2.92+0.79), followed by patient treatment with a mean of (2.66+0.67) as seen in table 2.

For the fifth level, "Performance pressure" is the most stressful domain among the domains, according to Table 2, with a mean (3.05+1.06) which indicating a significant level of stress among participants at this level. "Patient treatment" was the next most stressful domain, with the highest mean (3.004+0.67) for fifth-year students.

Table 2: Comparison between responses by domains according to level of study

	Self-efficacy belief			Faculty and administration			workload			Patient treatment			Clinical training			Performance pressure			Social stressors		
	mean	SD	sig	mean	SD	sig	mean	SD	sig	mean	SD	sig	mean	SD	sig	mean	SD	sig	mean	SD	sig
3 rd level	1.64	0.42		1.88	0.58		2.33	0.61		2.27	0.51		2.03	0.85		2.40	0.95		1.99	0.54	
4 th level	1.90	0.53	<0.001	2.01	0.74	<0.001	2.92	0.79	<0.001	2.66	0.67	<0.001	2.06	0.90	0.68	3.10	0.83	<0.001	2.01	0.83	0.01
5 th level	2.26	0.66		2.49	0.66		3.00	0.56		3.004	0.67		2.18	0.99		3.05	1.06		2.39	0.64	

A comparison of the various study levels showed that the domains "faculty and administrations, "patient treatment," workload " and " Self-efficacy belief " and "Performance pressure" showed highly significant differences ($P < 0.001$) among study groups, while, a significant difference ($P < 0.05$) was found with the domain " Social stressors " ($P < 0.05$) it was observed that when study levels increased, so did the degree of stress. Regarding the "Clinical training "no significant differences were observed ($P > 0.05$) as seen in **table 2**.

With a mean of (2.8549 ± 1.00215), the "Performance pressure "domain is the most stressful among the domains, as shown in **Table 3**. The domain "workload" is next most stressful, with a mean of (2.7551 ± 0.72573) demonstrating moderate stress among participants. "Self-efficacy belief "was the least stressful domain, with a mean of (1.94 ± 0.60), demonstrating that individuals were less concerned.

Table 3: Means of domains in the questionnaire

Domain	mean	SD
Performance pressure	2.85	1.00
workload	2.75	0.72
Patient treatment	2.64	0.69
Social stressors	2.16	0.70
Faculty and administration	2.13	0.71
Clinical training	2.09	0.91
Self-efficacy belief	1.94	0.60

The following were the greatest stressors in each composite category: self-

efficacy beliefs: fulfilling the clinical requirement, faculty and administration: no enough staff number, workload: a busy workday; patient treatment: patients arriving late or missing the appointments; clinical training: It's difficult to acquire the specialized manual skills required for lab and clinical work.; performance pressure: Exams and quizzes; and other factors: Financial resource

Table 4 presents the top 7 stress-inducing questions. Exams and quizzes were the biggest source of stress, followed by" patients arriving late or missing the appointments", " Full working days "and " no enough staff number" was the least.

Table 4: Main causes of stress, mean and standard deviation

Question	Mean	SD
Exams and quizzes	3.75	0.452
patients arriving late or missing the appointments	3.50	0.674
busy working days	2.58	1.240
Financial resources	2.58	1.311
Difficult to acquire the specialized manual skills required for lab and clinical work.	2.50	1.087
fulfilling the clinical requirement	2.42	1.240
no enough staff number	2.00	1.128

Comparing responses to the top seven stressors based on the research level as shown in **table 5**, no significant differences were found between responses of the study levels to these questions ($P > 0.05$).

Table 5: Comparison of responses based on research level for the top seven stressors

Question	Study level						
	3 rd level		4 th level		5 th level		
	Mean +SD		Mean +SD		Mean +SD		Sig
Examination and quizzes	3.50	.577	4.00	.000	3.75	.500	0.19
patients arriving late or missing the appointments	3.00	.816	3.50	.577	4.00	.000	0.50
Busy working days	3.00	1.414	2.50	1.291	2.25	1.258	0.72
Financial resources	2.75	1.258	2.75	1.500	2.25	1.500	0.10
Difficult to acquire the specialized manual skills required for lab and clinical work.	2.50	1.291	2.50	1.000	2.50	1.291	1.00
fulfilling the clinical requirement	1.50	1.000	3.00	1.414	2.75	.957	0.32
no enough staff number	1.50	1.000	2.00	1.414	2.50	1.000	0.85

Discussion

The engaging in interactions with students is essential in identifying factors that may intensify the stress of education to the point where students' resilience is surpassed. Assessing the serious challenges that a student faces helps the dentistry college improve its preclinical and clinical training methods. In this survey, we focused on third, fourth and fifth-year students since previous research has indicated that they experience more stress than other grade levels. It may be explained by the cumulative impact of workload and performance pressure.^{17, 18, 19, 20}

Identifying the real causes of stress that effect on the students at the Faculty of Dentistry, Dijlah University, is the primary goal of this study. Staff and management may be able to reduce students' stress by determining potential sources of stress by means of making adjustments to the circumstances or course of study, using strategies for reducing stress and offering tools for reducing stress in dentistry education. According to the questionnaire responses in our study, the two most stressful variables for all of the students were the

“pressure to perform” and the “workload”. This finding corresponds to the majority of research efforts intended for discovering the origin of stress that effect on dental students.^{2, 13, 16, 17}

According to the study levels, the amount of stress raised as study levels increased, particularly during the change into clinical training, a highly significant ($p < 0.001$) variations were noted among study levels in the topics of "patient treatment" and "faculty and administrations," workload and " Self-efficacy belief " and "Performance pressure, this comes in agreement with other studies.^{2,9,13,14}

The most stressful question in the (Self-Efficacy & Beliefs) group was (fulfilling the clinical requirement). It was rated as a medium to severe stressor by the student. This is a reasonable explanation given that dental students must complete a demanding clinical requirement in addition to numerous assignments, tests, and other requirements. The remaining time restrictions for free personal time and social interactions lead to stressed-out students, and this conclusion differs from previous research.^{11, 18, 21}

The results showed that students throughout all study years were agreed that the primary exciting stressor in (faculty and administration) group was (no enough training staff). This may be connected to the fact that there are no enough training staff in preclinical laboratories and clinics. This is consistent with what earlier research has shown,^{6, 13, 16, 22} insufficient teaching personnel exacerbated the anxiety in treatment of the patients, and there wasn't enough time to finish the requirement. Nevertheless, came to the conclusion that the sources of stress experienced by these undergraduate dentistry students differed based on the time of year and program year.

Regarding to the workload category, the students were most upset about the (Busy working days) item. This was partly because of their physical and mental tiredness, and partly because of the traffic problem, which is becoming more and more of a problem in Baghdad. It is important to remember that a student's travel home might take two to three hours on average, particularly during rush hour.

Out of the 42 stressor items, (patients missing or delay for their meeting) was regarded as the biggest stressor in the (Patient Treatment group). Since there are many dentistry colleges in Baghdad (both governmental and private), it might be challenging for dental students to find patients. The students' prospects of locating enough patients—both in quantity and quality—to fulfill the clinical needs were impacted by the increasing needs for dental patients a small region resulting from this geographic condensation.

According to the results of our survey, stress levels related to the (Difficult to acquire the specialized manual skills required for lab and clinical work) were higher in the (Clinical Training category). Several studies^{23, 24} had examined the discrepancy in learning abilities between the laboratory and

clinical parts and have concluded that early involvement in a laboratory should be combined with the traditional teaching of dental materials in the early years of BDS training in order to give theoretical learning and practical context.

In the (performance pressure) category, (Examination & quizzes) was regarded as the first stressful factor, this may be due to massive quantity of information that lecturers provide, the difficulty of examinations (which might be caused by the type of questions), the competition for grades, the shortage of time as well as the student requires assistance to manage both clinical and academic duties at the same time which intern leads to insufficient time to study for tests and assignments, Other authors also noted this sudden increase in stress.^{11, 25}

While, the (Financial resources) stressed the students most in the (Others) category, this is because Dijlah university is a private university with high tuition fees, which puts financial pressure on the student in addition to personal expenses, as a result, it lead to increase stress on the student from failing and bring back the studying year.

Conclusions

Dental students undergo a lot of pressures in their academic and professional lives. Staff and administrators can reduce students' stress by determining potential sources of stress, through adjusting the learning environment and content of training. As suggested by the authors, psychology courses have to be introduced to and taught at dentistry institutions. In addition, it is advised that students select the clinical teachers with whom they are most comfortable. It might also be possible to reduce the student-to-supervisor ratio in order to encourage greater student participation and enable more useful input. Also to solve this problem, it is important to select student counselors and advisors to each student throughout their

academic career and to get student their opinions on instructors and courses.

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