

Stressors among Dental Students during the COVID-19 Pandemic

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Abstract:

Psychological stress is one of the most common problems among students, especially dental students, and this problem has been exacerbated during the COVID-19 pandemic. The study included 96 students from the Faculty of Dentistry at Al-Sham Private University in Syria, and used a modified version of the DES questionnaire to investigate the most important causes of psychological stress among students; The study findings revealed a moderate to high degree of psychological stress and the (Fear of infection while dealing with patients) was the most causative factor of stress

Keywords: Dental Student, Stress, COVID-19



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عوامل الضغط النفسي لدى طلاب طب الأسنان خلال جائحة كوفيد-19

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الملخص:

يعد الإجهاد النفسي من أكثر المشاكل شيوعاً بين الطلاب، وخاصة طلاب طب الأسنان، وقد تفاقمت هذه المشكلة أثناء جائحة COVID-19. شملت الدراسة 96 طالباً من كلية طب الأسنان في جامعة الشام الخاصة في سوريا، واستخدمت نسخة معدلة من استبيان DES لبحث أهم أسباب الإجهاد النفسي لدى الطلاب. كشفت نتائج الدراسة عن وجود درجة متوسطة إلى عالية من الضغط النفسي خلال فترة الجائحة وكان عامل الخوف من العدوى أثناء معالجة المرضى هو أكثر العوامل المسببة للضغط النفسي

الكلمات المفتاحية: طلاب طب الأسنان، الضغط النفسي، كوفيد-19

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Introduction:

Stress is a very broad term that has been inaccurately used to describe various psychological conditions (Elani HW *et al.*, 2014), it can be defined as an uncomfortable emotional experience accompanied by biochemical, physiological, and behavioral changes (Alzahem AM *et al.*, 2011), in other words as a state of psychological or emotional tension resulting from adverse or difficult circumstances (Tariq S, 2019). Academic stress is a reaction to responsibilities that burden students during their studies. Dental students are among the students who are most exposed to academic stress, and therefore they have been an area of interest for many researchers (Elani HW *et al.*, 2014) (Abu-Ghazaleh SB *et al.*, 2016) (Uraz A *et al.*, 2013). Recent research in China and Iran has shown an increase in anxiety and depression rates after the Corona pandemic (Qiu J *et al.*, 2020) (Zandifar A, 2020).

In Wang's study, there was an increase in anxiety among students in the United States (Xiaomei W *et al.*, 2020).

It was found that psychological stress among dental students increases over the years of their academic studies, which is reflected in their opinions and health (Gadotti IC *et al.*, 2018). These pressures can also cause occupational burnout syndrome, which includes an increased feeling of emotional exhaustion, the development of pessimistic attitudes, and the tendency to negatively evaluate oneself and one's achievements (Wilson VJ *et al.*, 2015).

The aim of this study is to investigate the most important causes of psychological stress and its level among dental students at Al-Sham Private University during the Corona pandemic.

Methods:

A modified version of the DES questionnaire was designed to be compatible with the Syrian society and the current conditions during the Corona pandemic. The original version of the questionnaire was translated and distributed to students to assess students' understanding of all items and knowledge of emerging problems during the Corona pandemic,

some items were modified and some phrases related to the virus were added.

The final version consisted of 28 phrases, each phrase expressing a problem causing psychological stress. The questionnaire was divided into several sections, each section composed of 7 phrases (academic stress - clinical stress - personal stress - stress related to the Covid 19 pandemic). The answer to each phrase is to choose a value for the intensity of the psychological pressure resulting from each problem on a scale (1 - does not cause any pressure, 2 - causes mild pressure, 3 - causes moderate pressure, 4 - causes severe pressure, 5 - causes very severe pressure).

The sample consisted of clinical stage students at Al-Sham Private University (4th and 5th years) due to the large amount of work required to be completed in this term. After taking all ethical and academic approvals, a survey was distributed consisting of a section of demographic information, the modified version of the DES questionnaire, and a final section containing two yes/no questions.

100 questionnaires were distributed to students at one time to answer the questionnaire. After the questionnaires were collected, all data were checked and incomplete questionnaires were excluded. 96 questionnaires were accepted and included in the study with a response rate of 96%.

The ages of the participants were between 22-25. All participating students were in direct contact with patients in their clinical courses. The study was conducted in the second semester of the academic year 2020-2021.

The study sample consisted of 96 students at Al-Sham Private University in their clinical stage of study (46 males - 50 females, ratio 1-1.1). Frequency distributions and descriptive statistics were tabulated in IBM SPSS (version 24). The descriptive statistics for the sample size are presented in Table No. 1.

Table (1): Demographics and characteristics of respondents (n=96).

Demographics/characteristics	No. (%) of respondents
1. Gender	
a. Male	46 (47.91)
b. Female	50 (52.08)
2. Academic Year	
b .Fourth year	51 (53.12)
c .Fifth year	45 (46.87)
3. TMJ Disorders	
a. not suffer	56 (58.33)
b. suffer	40 (41.66)

Results:

After analyzing the results for psychological stress in the academic side, the mean score was (3.13) for the whole aspect, and the phrase (tests and grades) were scored the highest level on the scale (3.78) while the phrase (Competition with colleagues in class)was In the second place (3.64) While the phrase (College rules and regulations) was in the last rank at the lowest level among the rest of the phrases of this aspect(2.4). Detailed descriptive statistics for each phrase of the academic aspect stress are presented in Table No 2.

Table (2): Descriptive statistics of academic stressors.

Academic domain	Mean	Std. Deviation	Relative importance
Tests and grades	3.78	1.15	75.63%
Competition with colleagues in class	3.64	1.24	72.71%
The amount of work required during the study	3.38	1.36	67.50%
Difficulties in the required work during the study	3.28	1.53	65.63%
Difference in the opinions of teachers while evaluating your work	2.79	1.41	55.83%
Difficulty mastering the necessary hand skills	2.63	1.43	52.50%
College rules and regulations	2.40	1.23	47.92%
Total	3.13	1.27	62.53%

For the results of psychological stress related to clinical aspect, the mean score was (3.304) for the clinical side as a whole, and the phrase (Difficulty in accomplishing the required clinical cases) ranked first in the highest score (3.82) as the most stress-causing factor, while the phrase (Difficulty learning clinical techniques and methods of treatment in the clinic) was in the last rank as the lowest score factor with a mean (2.79). Detailed descriptive statistics for each phrase from the aspect related to clinical stress are presented in Table No 3.

Table (3): Descriptive statistics of clinical stressors.

Clinical domain	Mean	Std. Deviation	Relative importance
Difficulty in accomplishing the required clinical cases	3.82	0.99	76.46%
Failure of the patient to comply with treatment sessions appointments	3.68	0.94	73.54%
The inability of the patient to complete the treatment	3.45	1.02	68.96%
Dealing with patients not maintaining their personal hygiene	3.32	1.18	66.46%
Exposure to criticism while working in clinics	3.21	1.29	64.17%
Responsibility for treating and caring about patients	2.88	1.25	57.50%
Difficulty learning clinical techniques and methods of treatment in the clinic	2.79	1.17	55.83%
Total	3.31	1.07	66.13%

As for the psychological stress related to the personal aspect, the phrase (Lack of time to rest or activities) ranked first with the highest mean (3.11), while the phrase (Social communication with other students and colleagues) was the lowest with a mean (1.63) and the average was the degree of

psychological stress for the personal aspect as a whole(2.477). Detailed descriptive statistics for each phrase from the aspect related to personal stress are presented in Table No 4.

Table (4): Descriptive statistics of personal stressors.

Personal domain	Mean	Std. Deviation	Relative importance
Lack of time to rest or activities	3.14	1.31	62.71%
Insecurity about future employment	3.11	1.34	62.29%
Collision of your expectations of college with reality	3.03	1.32	60.63%
Financial Responsibilities	2.96	1.34	59.17%
Lack of a suitable family conditions	1.79	0.78	35.83%
Special health conditions	1.72	0.77	34.38%
Social communication with other students and colleagues	1.63	0.73	32.50%
Total	2.48	0.98	49.64%

Regarding the results of the statements related to the Covid-19 pandemic, the phrase "Fear of infection while dealing with patients" ranked first with an average of (4.02), and the average rate of psychological stress related to Covid 19 as a whole was (3.2).Detailed descriptive statistics for each phrase from the aspect related to covid 19 are presented in Table No 5.

Table (5): Descriptive statistics of covid-19 related stressors.

Covid-19 related domain	Mean	Std. Deviation	Relative importance
Fear of infection while dealing with patients	4.02	0.65	80.42%
Lack of practicing time due to home quarantine conditions	3.94	0.84	78.75%
Difficulty implementing clinical cases due to patients' fear of the virus	3.11	1.35	62.29%
Lack of knowledge of distance education technologies	2.94	1.33	58.75%
Financial problems related to the pandemic	2.88	1.30	57.50%
Special health conditions Postponing some exams several times	2.81	1.33	56.25%
Obstruction of some a ministrative matters	2.72	1.36	54.38%
Total	3.20	1.12	64.05%

To study the differences in the averages of psychological stress according to the gender variable, independent samples t-test were used, and the results were statistically significant in favor of females, These results are shown in detail in Table 6

Table (6): independent Samples t-test

	Gander	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
academic	Male	46	1.95	0.67	-18.700-	94	0.00
	Female	50	4.21	0.50			
clinical	Male	46	2.36	0.64	-15.838-	94	0.00
	Female	50	4.18	0.48			
personal	Male	46	1.68	0.64	-12.188-	94	0.00
	Female	50	3.22	0.59			
Covid-19	Male	46	2.22	0.69	-14.557-	94	0.00
	Female	50	4.10	0.57			
Total	Male	46	2.05	0.64	-15.971-	94	0.00
	Female	50	3.92	0.51			

Discussion:

The study of dentistry is one of the most demanding environments that cause stress and psychological pressure, which affects the general health of students (Arheiam A *et al.*, 2019). There have been many studies that dealt with the issue of psychological stress suffered by dental students, and there was a very large diversity in the measurements and tools used in those studies to assess the state of stress and its level (Elani HW *et al.*, 2014). A large

percentage of previous studies related to the subject of psychological stress among dental students adopted the DES questionnaire in order to determine the level of psychological stress and the most important factors causing stress, such as the Abu-Ghazaleh study in 2016 (Abu-Ghazaleh SB *et al.*, 2016), and (Wilson VJ *et al.*, 2015), , (Terán E& Mayta-Tovalino F, 2019), (Ahuja V, 2018), while other questionnaires were used to determine psychological stress in general and not only among

dental students such as DASS, as in Tay study in 2019 (Tay KJ, 2019), and (Stormon N, 2019), while Maślak-Bereś used PSS questionnaire in his study (Maślak-Bereś *et al.*, 2019).

The importance of this study attributed to the great difference in the means and results of previous similar studies, and because of the specificity of each community, this Study based on a special questionnaire that has been designed to suit the academic conditions of Al-Sham Private University, Especially during the COVID-19 pandemic.

According to the results of this study, the levels of psychological stress among students were between moderate and severe, Especially statements related to the Covid 19 pandemic. These results are similar to what was found by previous studies that studied the subject of psychological stress among dental students Such as the Arheiam study conducted in 2019 in Libya, which found moderate to high levels of psychological stress among students (Arheiam A *et al.*, 2019), Halboub study 2019 conducted in Yemen on a sample of 1500 students and used the modified DES index. The result was that the psychological stress of dental students in Yemen is from moderate to high (Halboub E *et al.*, 2019). and the study of Abu Ghazaleh in Jordan in 2016, which concluded that psychological stress at the University of Jordan was high and the first factor was the fear of not completing the clinical requirements (Abu-Ghazaleh SB *et al.*, 2016). The previous three studies are close to our study, as they were conducted in Arab countries and societies similar to our Syrian society, especially the studies of Al-Rahim and Halaboub, where both Libya and Yemen

live under war conditions similar to Syria that affect students' performance and mental health.

Globally, the results were also similar in terms of students' exposure to severe stress, such as the Bhayat study that was conducted in South Africa and showed severe levels of psychological stress among students (Bhayat A & Madiba TK, 2017), and the 2019 study of Teran in Peru, which resulted in high rates of psychological stress among students and that increases with their advancing years, especially with the increase in clinical requirements (Terán E & Mayta-Tovalino F, 2019). As for Stormon's study, it was used in his study In 2019, the DASS questionnaire and its results also recorded high levels of psychological stress among students in Australia, but it did not identify the causative factors as in our study, due to the difference in the questionnaire used (Stormon N, 2019).

As for the most stress-causing factors in terms of severity, they were in our study: " Fear of infection while dealing with patients " with an average of (4,02) and " Lack of practicing time due to home quarantine conditions " with an average of (3,94) from the pressures of the covid 19 related side, " Tests and grades " with an average of (3,78) and " Competition with colleagues in class " with an average of (3,64) of academic side pressures, "

Conclusions:

dentistry is one of the most stressful environments, and the Covid-19 pandemic is a problem that increased the intensity of tension and pressure for students.

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