

Perceived Anxiety among Undergraduate Dental Students During Oral and Written Prosthetic Examination

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Abstract

Background: The test of anxiety refers to emotional states with behavioral and psychological correlates. **Objectives:** To determine if anxiety induced by exams affects the oral and written prosthetic examination performance of dental students in Iraq. **Materials and Methods:** The study sample consisted of 5th year dental students (142 males and females). The participants were given the questionnaire in the first 2 min of the prosthodontic written exam and asked to complete it before opening the exam. For the oral exam, we asked the participating students to fill out the questionnaire while sitting in front of the exam professor committee at the beginning of the exam. Then, a 5-point Likert scale. All data were collected and analyzed using the mean with standard deviation as a simple descriptive statistic to describe the study variables of the association between categorical variables using Kandall's tau test. **Results:** There was a significant difference between the anxiety scale and the degree of anxiety between the oral and written exams. The degree of males in the oral exam was higher than that of females. The anxiety from the written exam was 2.62 for males, whereas it was 3.51 for females, and the degree for males in the written exam was higher than for females. **Conclusion:** There were significant differences between the anxiety scale and the performance on the exam between males and females. There is a significant association between the degree of anxiety and the degree obtained from the oral and written prosthetic examinations. Females were more anxious than males from oral and written exams, and there is a significant difference between genders regarding anxiety levels and exam degrees.

Keywords: Anxiety, oral prosthetic exam, written prosthetic exam

INTRODUCTION

Prosthodontics is a broad field of dentistry. The right learning starts from the undergraduate level, and students who complete the course obtain a bachelor's degree. Studies have predicted that the branch of prosthodontics is challenging, intricate, and difficult to understand when it comes to relating clinical and theoretical aspects. The difficulty of the branch is compounded by patients' exposure during clinical practice, as well as traditional learning methodologies, which can make understanding prosthodontics difficult.^[1] In formal testing or other evaluation methods, test of anxiety refers to emotional statements with behavioral and psychological covariates.^[1] According to Spielberger and Vagg, test anxiety is a common element of anxiety related to how exams are introduced in different academic situations.^[2]

Many studies have shown that intelligent students often receive low scores due to test anxiety.^[3] Students may feel worried, fearful, and nervous during evaluations, which can also affect their learning experience.^[2,4] Test anxiety can be influenced by the type of examination, gender, and the clinical course for dental students.^[5] The evaluation of students through examinations, where they either pass or fail, can have a lasting impact on their careers. International studies have shown that dental students consider exams and grades to be major stressors in dental

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school.^[6-10] Currently, there are complaints about the methods used in clinical exams, such as large numbers of participants, limited evaluation time, and lack of specific evaluation methods.^[11]

The stress affects the aspect of academic performance, which dental educators must understand. In dental education, students develop clinical experiences, apply dental knowledge in decision-making scenarios, and acquire scientific knowledge bases. Some of these three learning fields are sensitive to stress, but they have not been determined yet.^[8,10-15]

In dentistry, oral examinations cause more anxiety than is unidentified, but anecdotal information reveals the students' quivering voice, shaking hands, and increased blood pressure during oral examinations.

Anxiety is an unpleasant arousal in response to danger or threatening demands; test anxiety can interfere with optimal learning at a high level.

The studies record that students with a high level of stress receive lower grades compared to students with a lower level of stress, indicating that overall stress levels during exams result in marginally lower marks.^[9]

In dentistry, students undergo different types of exams, such as written, oral, clinical, and practical, in a rigorous undergraduate program that requires rigorous academic competencies and proficiencies. Dental students face different academic situations and exams, which can lead to anxiety.

Additionally, a modest sample size was used in a few dental investigations. Moreover, there is no empirical research in the literature on dentistry students' test anxiety. Furthermore, correlations between gender, exam style, and test anxiety among dentistry students have not been thoroughly studied.

Therefore, it is necessary to conduct this study with the aim of examining whether anxiety induced by exams affects the oral and written prosthetic examination scores of dental students in Iraq. This study will use variables such as gender and exam type (written and oral) to explore associations.

MATERIALS AND METHODS

Study design and participants

The population consisted of 5th year dental students at the College of Dentistry, University of Babylon in Iraq, in 2022 (February 2022 to June 2022). The students of the 5th stage (142 males and females), including approximately 36 males (25.35%) and 106 females (74.65%), voluntarily participated in the study. They were not obligated to share in this research, and this sharing was voluntary after providing written consent. Inclusion criteria include every healthy student

who has no psychological disorder or systemic disease that may have an effect on their ability to answer the questionnaire.

This study was conducted under real exam conditions. The participants were given the questionnaire within the first 2 min of the prosthetic written exam and were asked to complete it before opening the exam paper. For the oral exam, we asked participating undergraduate dental students to fill out the questionnaire while sitting in front of the exam professor committee at the beginning of the exam. Then we utilized a 5-point Likert scale (1 means strongly not anxious, 2 means not anxious, 3 means normal, 4 means anxious, 5 means strongly anxious).

Ethical approval

The study was conducted in accordance with the ethical guidelines outlined in the Helsinki Declaration. Before a sample was taken, it was done with the patient's verbal and analytical consent. A local ethics committee reviewed and approved the study protocol, subject information, and consent form in accordance with document number 5469 (dated August 20, 2022).

Statistical analysis

All data were collected and analyzed using Statistical Package for Social Sciences Version 22.0 (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY, USA: IBM Corp), and mean with standard deviation were used as simple descriptive statistics to describe the study variables, and the correlation between categorical variables using Kendall's tau test, level of significance set at $P < 0.05$.

RESULTS

The sample consists of males (25.35%) and females (74.65%). Table 1 shows that the mean anxiety of the oral exam for all students was (3.84), while for the written exam (3.29). The degree for the oral exam for all students was (14.31), while for the written exam (14.65), and there is a significant difference between the anxiety scale and the exam level between the oral and written exams.

Table 1: Descriptive statistics

Variables	Mean \pm Std. deviation	Std. error
Anxiety for oral – exam	3.84 \pm 0.951	0.80
Anxiety for written exam	3.29 \pm 0.93	1.099
Degree for written exam	14.65 \pm 1.671	0.141
Degree for oral exam	14.3138 \pm 2.780	0.23413

Table 2: The descriptive statistics for gender

Variables	Mean \pm Std. deviation	Std. error
Anxiety male from oral exam	3.31 \pm 1.167	1.94
Female anxiety from oral exam	4.03 \pm 0.79	0.77
Degree for males of written exam	14.64 \pm 1.588	0.265
Degree for females of oral exam	14.29 \pm 1.697	0.166
Male anxiety from written exam	2.62 \pm 1.125	0.188
Female anxiety from written exam	3.51 \pm 1.002	0.98
Degree for males of oral exam	14.361 \pm 2.78010	0.361
Degree for females of written exam	14.297 \pm 2.969	0.289

Table 3: Correlation according to Kandall's tau test

	Student anxiety	Student degree in oral exam	Student anxiety	Student degree in written exam
Correlation coefficient	1.000	0.201	1.000	0.201
Sig. (2-tailed) for anxiety	–	0.004	–	0.004
Number	142	142	142	142
Correlation coefficient	0.201	1.000	0.201	1.000
Sig.(2-tailed) for oral exam	0.004	–	0.004	–
Number	142	142	142	142

Table 4: Differences between variables using the Mann–Whitney test

	Asymp. Sig. (2-tailed) <i>P</i> value
Differences between the degree of oral exams for both genders	<i>P</i> \leq 0.01
Differences between the degree of written exams for both genders	<i>P</i> \leq 0.01
Differences between the degree of oral exams for males and females	<i>P</i> > 0.01
Differences between the degree of written exams for males and females	<i>P</i> \leq 0.01
Differences between the degree of oral exams and written exams for both genders	<i>P</i> \leq 0.01

Table 2 shows the male anxiety from oral exam (3.31) and for females (4.03), and the degree for males in oral exam (14.36), while for females (14.29); the male anxiety from the written exam (2.62), while for females (3.51), along with the degree for males in the written exam (14.64) and for females (14.29), and there is a significant difference between anxiety levels and degree of exam between males and females.

Table 3 shows that there is a significant correlation at 0.01 level (2-tailed) between the degree of anxiety and degrees obtained from oral and written prosthetic exams, according to Kandall's tau test.

DISCUSSION

To our knowledge, this is the first study to examine parts associated exclusively with anxiety from a prosthodontic exam, written and oral, in Iraq. The 5th year of dental school is a crucial time in a student's life.^[16] Academic performance was negatively affected by test anxiety.^[17,18] Anxiety among students concerning the prosthodontic exam due to a heavy course load typically hinders students' academic learning and should be taken into account when developing and evaluating the curriculum. There are many variables that can be considered as major anxiety factors, such as gender and exam type (written and oral exams) [Table 4].

In this study, the mean of anxiety for the oral exam for all students was higher than the written exam, and this may be due to the fact that each question on a written test has no time restriction. Suppose a student does not know the answer to one. In that case, they can leave it, answer another question, and then come back to the one they left and give it some thought when the test is over, while in the case of an oral exam, there is constant observation and monitoring that might raise the level of anxiety. Each question has its own time that cannot be extended, so if the student cannot answer it, they have no time to think about it. Also, there is a fact that the performance of the students on a timed test is inferior to that of their untimed test.^[19,20] As well, the students are more familiar with this test (written test), and so more familiarity may decrease the level of anxiety.

The oral exam score for all students was less than that for the written exam, and the possible reason is that test results and levels of anxiety generally had an inverse relationship. Better test scores will result from low levels of anxiety, and high levels of anxiety will cause vice versa. Lower test scores because fear prevents a person from using their full capacity for wisdom, which prevents them from learning of exam information. Fear can temporarily weaken intellectual functions.^[4] This result aligns with the result of the research by Westerman *et al.* On undergraduate dental students, there is a statistically significant and adverse correlation between exam performance and anxiety levels.^[21] Contrary to a study on medical novices conducted by Reteguiz, Anderson and Stickley, Chapell *et al.* This study demonstrates no significant relationship between anxiety levels and performance level.^[22-24]

Other authors have reported similar findings, which found that females were more anxious than males during oral and written exams. There is a significant difference between males and females related to anxiety levels and exam performance.^[25-27] Females have higher anxiety levels due to their emotional structure and greater expressivity of thoughts, feelings, and considerations.^[25]

The result also coincided with Wu *et al.*'s,^[28] who found that female students generally display higher mean test

anxiety levels than male students, echoing the findings of some earlier studies.^[9,29,30] On the other hand, these results contrast with those of Tangade *et al.*,^[31] who observed that male students were more anxious than female students, attributing this difference to the male family member being the primary earner. This man's income also disagrees with some other studies.^[3,32]

CONCLUSION

This study highlights that 5th-year undergraduate students experience exam anxiety in prosthodontics. There is a significant correlation between the degree of anxiety and the degree obtained from the oral and written prosthetic exams. There is a significant difference exists between males and females in terms of anxiety levels and exam grades, and the girls were more worried than males during both oral and written exams.

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Conflicts of interest

There are no conflicts of interest.

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