

# Major Factors Causing Examination Anxiety in Undergraduate Dental Students - A Questionnaire Based Cross-Sectional Study

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## Abstract

**Objectives:** To assess examination related anxiety among undergraduate dental students, and to determine the factors contributing to exam anxiety among them. **Methods:** 237 dental graduates participated in this questionnaire based cross-sectional study. The data regarding the factors contributing to exam anxiety were collected using a questionnaire that consisted of 15 questions on a 3-point Likert scale. The questionnaire was uploaded to "Google Docs" as a survey and disseminated to participants through "Whatsapp". Frequency and percentage were applied for data description. Chi-square (C2) test was applied to test the association between two categorical variables. p-values less than 0.05 were considered statistically significant. **Results:** Of these, 200 participants completed the study. Male participants were 103 (51.5%) while female participants were 97 (48.5%). Most participants (n=140, 70%) had excessive course load. The majority of participants experienced fear of failure during the exam (n=127, 63.5%). More than half of the participants the sample had distractions during their studies (n=109, 54.5%). The existence of distractions during studies and finding dental vocabulary difficult were found to be statistically significant according to gender (p-values = 0.04 and 0.01 respectively). **Conclusion:** The study showed a prevalence of exam anxiety among undergraduate dental students. The major factors causing examination anxiety were excessive course load, fear of failure during exam, and studying all night before exams.

**Keywords:** Examination; Anxiety; Students; Dental

## Introduction

Dental examinations can be a significant source of stress among dental students. According to Cooper et al., higher levels of stress have been observed among dental students than in the general population. [1] Inam et al. reported that the leading cause for anxiety is examination stress, and that 60% of students suffer from anxiety throughout their studying. [2]

Anxiety can be defined as the feeling of apprehension or dread about the present or the future accompanied by several autonomic signs and somatic symptoms such as tremors, palpitations, and sweating. [3] Exam anxiety is when this condition manifests during examination. [4] Anxiety during examination and before is by itself normal and natural. What matters is the intensity of excitement or extraordinary anxiety that can affect performance. [5] A lower academic performance has been observed in students with high test anxiety than in those with low test anxiety. [6] Moreover, Chapell et al. reported negative correlation between test anxiety and academic performance. [7]

For dental educators, anxiety among dental students has been an issue of major concern. [8] The dental school curriculum and atmosphere are known to be highly challenging, with demanding learning conditions. [9] This is primarily due to the early clinical

exposure and the style of academic training that many programs implement, with rigorous academic proficiencies required during a thorough 5-year program. [10-12]

Factors contributing to exam anxiety have been the subject of several studies. Sansgiry et al. reported that inefficient studying through inconsistent content coverage and studying all night before exams, are major factors leading to exam related anxiety. [13] Other factors can be psychological and can contribute significantly to exam anxiety. Negative and irrational thinking about exams, outcomes of exams and feelings of no control over exam situation are reported in several studies. [14,15]

There are limited studies that assess examination anxieties among undergraduate dental students in Saudi Arabia. Therefore, this study aimed to assess examination related anxiety among undergraduate dental students, and to determine

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the factors contributing to exam anxiety among undergraduate students of College of Dentistry, King Khalid University, Abha, Saudi Arabia.

## Materials and Methods

Ethical approval was sought from the Head of the Department Human Research Ethics Committee of King Khalid University, Abha, Aseer Region of Saudi Arabia (SRC/REG/2018-2019/96) and the study was carried out in accordance with the code of ethics in the Declaration of Helsinki. This was a cross sectional study conducted during the present academic year at the College of Dentistry, King Khalid University and it included all the enrolled dental undergraduates of this institution.

The data collection tool comprised a questionnaire adopted from a recent study by Alammari and Bukhary.<sup>[8]</sup> The inclusion criterion for participants in this study was that they were enrolled as undergraduate dental students at King Khalid University, both males and females. The questionnaire composed of 15 questions on a 3-point Likert scale to determine the factors contributing to exam anxiety. The questionnaire was uploaded to “Google Docs” as a survey and disseminated to participants through “Whatsapp”. An informed consent describing the nature and objectives of the study for participation in the online survey was provided to all participants on the first page of the online questionnaire. It was made clear that there was no compulsion to participate in this study and this was completely voluntary. Furthermore, it was made clear that all responses were anonymous and collected data were kept fully confidential to be used only for research purposes.

### Data analysis

A subject-level analysis was performed statistically for each of the parameters using SPSS software for Windows, Version 21.0.(SPSS Inc., Chicago, IL, USA). Frequency and percentage were calculated as summary measures for condensing the raw data. Chi-square test was applied to test the association between two categorical variables. A calculated p value less than 0.05 is considered statistically significant.

## Results

Among the 250 dental students to whom the questionnaires were sent out, 200 of them completed the study. Although 237 participants returned the questionnaire, 37 of them (22 males and 15 females) were not complete because of few missing responses.

Table 1 shows participants distribution according to gender. Male participants were 103 (51.5%) while female participants were 97 (48.5%). Table 2 shows participants distribution according to anxiety factors. Most participants (n=140, 70%)

had excessive course load. Almost half the sample did not have enough time to revise before the exam (n=99, 49.5%) while a third of them were able to manage their time for studies (n=67, 33.5%). Almost half the students had excessive parental expectations (n=93, 46.5%) too.

Although a third of the sample were able to recall and revise their lessons before exams (n=66, 33%), most participants admitted having experienced fear of failure during the exam (n=127, 63.5%). Nearly a third of the students had a problem in understanding their lessons in English (n=65, 32.5%) but more than half the sample were aware of the pattern in the exam (n=116, 58%) and majority of participants stayed up all night studying on the night of the exam (n=141, 70.5%). More than half the sample had distractions during their studies (n=109, 54.5%) and almost half the number of participants saw their eating habits during exams as unhealthy (n=93, 46.5%). Half of the participants experienced peer pressure to perform well (n=98, 49%) and about a third of the sample found dental vocabulary difficult (n=71, 35.5%)

Table 3 shows statistically significant anxiety factors according to gender. The existence of distractions during studies and finding dental vocabulary difficult were found to be statistically significant according to gender (p-values = 0.04 and 0.01 respectively).

## Discussion

To the best of our knowledge this is the first detailed report of major factors causing examination anxiety in undergraduate dental students from south west region of Saudi Arabia. The current study results showed that 70% among participants have excessive course load. Similar findings were reported in a number of studies. Khan et al. conducted a study to assess examination related anxiety among first professional medical students. Results showed 60% having excessive course load.<sup>[16]</sup> Another study by Hashmat et al. aimed to assess examination related anxiety among final professional medical students. Extensive course load was the most reported anxiety factor by students with 90.8%.<sup>[17]</sup> In Alammari and Bukhary’s study, results showed that anxiety among dental students was mostly considered to be due to excessive course load, as cited by 67.3% of the dental students.<sup>[8]</sup>

In the current study, almost half the participants (49.5%) did not have enough time to revise before the exam. This finding is in concordance with several study findings. A study by Simran et al. aimed to assess exam related anxiety among 1st year M.B.B.S. students. Results showed 87% of the students reported lack of time to revise before exam as one of the major factors contributing to exam anxiety.<sup>[18]</sup> Other studies reported similar findings where lack of time management was among the

**Table 1: Participants distribution according to gender.**

Gender	No.	Percentage (%)
Male	103	51.5
Female	97	48.5
Total	200	100.0

**Table 2: Participants distribution according to anxiety factors.**

Anxiety Factor	Agree	Disagree	Neutral
Do you have too much (excessive) course load?	140 (70%)	18 (9%)	42 (21%)
Do you have enough time to revise before exam?	57 (28.5%)	99 (49.5%)	44 (22%)
Are you able to manage time for studies?	67 (33.5%)	63 (31.5%)	70 (35%)
Do you have excessive parental expectation?	93 (46.5%)	39 (19.5%)	68 (34%)
Are you able to recall and revise your lessons prior to exam?	66 (33%)	64 (32%)	70 (35%)
Do you experience fear of failure during exam?	127 (63.5%)	33 (16.5%)	40 (20%)
Do you have a problem understanding your lesson in English?	65 (32.5%)	74 (37%)	61 (30.5%)
Are you aware of the pattern of exam?	116 (58%)	29 (14.5%)	55 (27.5%)
Do you study all night before the day of exam?	141 (70.5%)	27 (13.5%)	32 (16%)
Are there any distractions during studies? (e.g. mobiles, internet)	109 (54.5%)	33 (16.5%)	58 (29%)
Do you think you're eating habit is healthy during exams?	68 (34%)	93 (46.5%)	39 (19.5%)
Do you have pressure from A grade students to perform well?	98 (49%)	49 (24.5%)	53 (26.5%)
Do you find dental vocabulary difficult?	71 (35.5%)	55 (27.5%)	74 (37%)
Do you find the time of the exam convenient?	66 (33%)	55 (27.5%)	79 (39.5%)
Do you memorize the lessons without understanding?	63 (31.5%)	73 (36.5%)	64 (32%)

**Table 3: Statistically significant anxiety factors according to gender.**

Anxiety Factor	Male	Female	P- value
Are there any distractions during studies? (e.g. Mobiles, internet)	63 (57.8%)	46 (42.2%)	0.04
Do you find dental vocabulary difficult?	38 (53.5%)	33 (46.5%)	0.01

major factors contributing to exam related anxiety.<sup>[19,20]</sup>

The current study revealed almost half of the students had excessive parental expectations (46.5%). Similar results were reported by Nazeer and Sultana where high parental expectations were among the contributing factors of exam anxiety.<sup>[21]</sup> Simran et al. also reported 80% of the students complained from excessive parental expectations.<sup>[18]</sup> However, different results were reported by Patil and Aithala where parental pressure was a contributory factor for exam anxiety among only 4-9% of the students.<sup>[3]</sup> Difference in study setting and population may account for the difference in results.

The current study results revealed that most participants experience fear of failure during exams (63.5%). This finding is in concordance with a number of studies. In a study conducted by Rosal et al. aimed to examine depression in medical students during their training, results showed that among anticipated sources of stress, those dealing with perceived failure were highly stressful.<sup>[22]</sup> Al-Samadani and Al-Dharrab reported that fear of failure was present among 59% of fourth and fifth year dental students.<sup>[9]</sup> Similarly in Alammari and Bukhary's study, fear of failure during a quiz was present among 59.7% of students.<sup>[8]</sup>

In the current study, the majority of participants stay all night studying on the night of the exam (70.5%). In a study by Sansgiry et al., it was reported that studying all night during exams is a major factor leading to exam anxiety.<sup>[13]</sup> Simran et al. reported 58% studying all night during exam.<sup>[18]</sup> Patil and Aithala also reported that studying all night before the exam was observed among 50-63% of students.<sup>[3]</sup> The fact that more than half the participants experienced distractions during their studies is in accordance with the findings of Simran et al. According to the results reported 56% experiencing distractions during studying, with more males (60%) experiencing distractions during studies

than females (50%) with a statistically significant p-value (p<0.001).<sup>[18]</sup>

However, different findings were reported in Alammari and Bukhary's study where more females (63%) experienced distractions than males (33%) with a statistically significant p-value (p=0.001).<sup>[8]</sup> Difference in study setting and sample size may account for the difference in results. In the current study, 35.5% find dental vocabulary difficult, and more males (53.5%) are finding it difficult than females (46.5%) with a statistically significant p-value (p=0.01).

Different findings were reported by Alammari and Bukhary where the lack of English language proficiency was the main contributor (70%) to the development of preclinical anxiety.<sup>8</sup> In addition, more females (69.2%) suffered from lack of English language proficiency than males (30.8%) with a statistically significant p-value (p<0.001).<sup>8</sup> Difference in study setting and sample size may account for the difference in results.

### Conclusion

The current study showed a prevalence of exam anxiety among undergraduate dental students. The major factors causing examination anxiety were excessive course load, fear of failure during exam, and studying all night before exams. Counseling services and stress management programs must be launched and implemented as comprehensively as possible. Further research is needed to further understand the major factors causing examination anxiety and how to avoid them for better student performance.

### Recommendations

Since examination anxiety can often adversely interfere with the performance of the students, it is recommended that the students identify such factors through mindfulness. Recognizing the problems is the first step in managing it effectively. It is also

recommended that students consult with a psychologist or a counselor for expert management.

### Competing Interest

The authors declare that they have no competing interests.

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### Author's Contributions

LA and RA conceived the study. LA, RA, MAJ and BJ conducted research, provided research materials, and collected and organized data. LA, MAJ and BJ analyzed and interpreted data. LA, RA, MAJ and BJ wrote initial and final draft of article and provided logistic support. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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