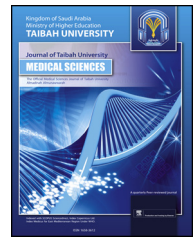




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### Original Article

## Self-reported anxiety of dental procedures among dental students and its relation to gender and level of education



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### المخلص

**أهداف البحث:** تهدف الدراسة إلى تحديد الإجراءات المستخدمة في طب الأسنان التي ينشأ عنها أكبر درجة من القلق، وعلاقة هذا القلق بجنس الطالب واختلاف درجة الشعور به خلال سنوات الدراسة.

**طريقة البحث:** أجريت هذه الدراسة المقطعية في كلية "ساردار بيكم" لطب الأسنان بمقاطعة بيشاور في باكستان خلال شهر يونيو ٢٠١٤م. تم توزيع مقياس "كورة" لقلق الأسنان على جميع الطلبة. يحتوي هذا المقياس على ٢٦ عنصراً لقياس درجة القلق المستشعرة من جراء التعرض لإجراءات مختلفة متعلقة بطب الأسنان. تتدرج الخيارات في هذا المقياس من ١-٤ لكل عنصر، بحيث يمثل ١ أقل درجة و٤ أعلى درجة من القلق.

**النتائج:** كان معدل الاستجابة للنموذج ٦٧.٣٪ (ن = ١٠١؛ ٦٤ طالبة و ٣٧ طالباً). تبين أن الطالبات كن أكثر قلقاً من الطلبة الذكور في الخمس الإجراءات الأكثر إثارة للقلق (الخوف من الحقن/ الإبر، ومعالجة العصب، والخلع، وتعرض السن للهواء البارد). كما تبين أن الخوف كان أشد عند طلبة المراحل قبل السريرية (السنتين الأولى والثانية) منه عند طلبة المراحل السريرية (السنتين الثالثة والرابعة). وجدت فوارق ذات قيمة اعتبارية في ثلاثة إجراءات، تركيب السد المطاطي، وعدم القدرة على إيقاف طبيب الأسنان، وأخذ طبعة الأسنان. كما

سجل طلبة المراحل السريرية قلقاً مرتفعاً تجاه الأخير وطلبة المراحل قبل السريرية قلقاً مرتفعاً تجاه الإجراء الأول والثاني.

**الاستنتاجات:** سجلت أعلى درجات القلق لدى الطالبات وطلبة المراحل قبل السريرية مقارنة بغيرهم. قد تخفف الدروس التثقيفية والتعرض التدريجي للعلاج في المراحل المبكرة من القلق المصاحب للإجراءات المتعلقة بطب الأسنان.

**الكلمات المفتاحية:** القلق من الإجراءات الطبية للأسنان؛ الخوف؛ الرهاب؛ طلبة الأسنان؛ الإجراءات الطبية للأسنان

### Abstract

**Objectives:** The study aimed to identify the dental procedures that elicit the highest level of anxiety by various dental procedures and to determine the correlation of anxiety with students' gender and varying perceptions of anxiety across years of dental education.

**Methods:** This cross-sectional study was conducted at Sardar Begum Dental College, Peshawar, Pakistan during June 2014. The Corah's Dental Anxiety Scale (DAS) was distributed to all students. This instrument had 26 items examining the anxiety levels experienced for different dental procedures. Options ranging from 1 to 4 were provided for every item, where 1 represented low anxiety and 4 represented the highest anxiety.

**Results:** The overall response rate was 67.3% (n = 101; 64 females and 37 males). Among the top five dental procedures eliciting the highest anxiety levels, females were found to be more anxious than males for all

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procedures (fear of injection/needle, root canal treatment, extraction, and application of cold air) except the need for further treatment. Pre-clinical students (1st and 2nd year) were found to be more anxious than clinical students (3rd and 4th year). Significant differences ( $p < 0.05$ ) were found for three procedures: rubber dam placement, inability to stop dentist, and impression taking. Clinical students reported high anxiety for the latter, and pre-clinical students reported higher anxiety for the former two procedures.

**Conclusions:** Higher anxiety levels were reported by females and pre-clinical students than their respective counterparts. Educational sessions and graded exposure therapy at an initial stage of dental educational training may decrease the anxiety associated with dental procedures.

**Keywords:** Anxiety by dental procedures; Dental procedures; Dental students; Fear; Phobia

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## Introduction

Anxiety is defined as the “*fear of unknown*”.<sup>1</sup> A specific phobia is regarded as one of the most commonly occurring anxiety disorders.<sup>2</sup> Dental anxiety is a type of specific phobia that is related to the commonly-feared conditions that are encountered in a dental office, and its prevalence has been reported up to 20% among different study groups.<sup>3</sup> Due to its high prevalence, patients often delay dental treatments (unless there is an emergency), which results in complex dental treatments and leads to poor dental health.<sup>4</sup> Avoidance of dental treatment due to dental anxiety not only situates the oral health of a patient at risk but also poses a severe threat to his general health, as the patient can suffer from a number of serious medical conditions such as septicaemia, sepsis, sinusitis, and osteomyelitis of the face.<sup>5</sup>

The perception of patients concerning anxiety is different for different dental procedures.<sup>6</sup> Therefore, it is logical to anticipate that anxiety levels also vary between different social groups, as well as between the individuals of a same social group. Anxiety related to dental procedures is not only problematic for patients, but it is also a major source of stress for dental practitioners to treat anxious patients. There is now substantial evidence suggesting that the physiological stress responses (increased blood pressure, elevated heart rate, etc.) of dentists are equal to the responses of the patients when procedures are being performed.<sup>7</sup>

One important group of people is dental students, who are future frontline health care providers. It is necessary for a dental student to learn about the techniques that can help them to overcome their own dental anxiety.<sup>8</sup> A decrease in

their anxiety levels would make them confident practitioners, who could in turn treat their patients well.

A number of tools have been developed to measure dental anxiety levels. One such scale is Corah's Dental Anxiety Scale (DAS),<sup>9</sup> which evaluates levels of anxiety in respondents, and identifies the most anxiety-inducing procedure.

There is little data present in the literature regarding the most frightening dental procedure reported by dental students from Pakistan. Therefore, this cross-sectional study was carried out to identify the dental procedures that elicit the highest level of dental anxiety. In addition, the relation of anxiety with students' gender and level of dental education was evaluated.

## Materials and Methods

### *Design of the study*

This cross-sectional study was conducted at Sardar Begum Dental College, Peshawar, Pakistan in June 2014. Ethical approval was acquired from the Ethics Committee of the college; participation in this study was on a voluntary basis, and an informed consent was obtained from all participants. The questionnaires were distributed to all 1st – 4th year students present on the day of study (150 students) at the end of their respective lectures and clinical sessions. The respondents completed the questionnaires anonymously, and no data except gender and year of study were collected.

### *Determining dental anxiety related to various procedures*

The DAS was used for this study. It contains twenty-six items (each representing different dental procedures/situations), probing the level of anxiety experienced for each item. Four options ranging from 1 to 4 were provided for every item, where 1 represented low anxiety, 2 represented moderate anxiety, 3 represented high anxiety, and 4 represented no anxiety.

### *Statistical analysis*

SPSS software (version 19.0; SPSS Inc., Chicago, IL, USA) was utilized for statistical analysis. A one-way ANOVA test was used to evaluate the differences between the anxiety levels reported by male and female students, as well as between pre-clinical (1st – 2nd year) and clinical (3rd – 4th year) dental students. P-values  $< 0.05$  were considered statistically significant.

## Results

This study was conducted with 1st – 4th year dental students. Of the 150 questionnaires circulated, 103 were returned, of which two were excluded, as they were incomplete. The overall response rate was 67.3% (101 of 150) which included 36.6% males (37 of 101) and 63.4% females (64 of 101). The year-wise response rates from all of the dental students/year are summarized in Table 1.

The five procedures that elicited the highest dental anxiety levels collectively in both male and female students are

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