

## Original Research Article

## Clinical anxiety among junior dental students: Trainers and students' perspective

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**Abstract:** The aim of this study was to determine provoking factors of clinical anxiety among dental students from trainers and students' perspective. A cross-sectional study was conducted among junior dental students of Taibah Dental College and their trainers using the 38-item modified Moss and McManus clinical anxiety questionnaire. Totally, 123 students and 27 clinical trainers participated. In 5 out of 32 situations significant differences in anxiety were reported by students and trainers ( $P < 0.05$ ). Dental students reported higher level of anxiety than clinical trainers when they are presenting cases in clinical sessions, helping in a faint, failure of local anaesthesia injection and not meeting the requirements before the exam. However, clinical trainers were more anxious than dental students when they get involved in arresting postoperative bleeding ( $P < 0.05$ ). Clinical trainers shared largely the same perspective with dental students on the following clinical anxiety provoking situations: when they getting diagnosis wrong, inadvertently hurting the patients, are dealing with psychiatric patients, treating medically compromised patients, coping with uncooperative patient, dealing with fainting patient, fracturing a tooth, extracting wrong tooth, causing accidental pulp exposure, fear of patient's satisfaction, tearing of the cheek/lips due to catching on a dental burr, getting infected by patients, and giving wrong treatment ( $P > 0.05$ ). It was concluded that clinical trainers and students have great similarity in their perspective on the clinical anxiety provoking situations with slight differences. Clinical trainers' anxiety dramatically increased with the most risky clinical conditions such as getting infected by patients, arresting postoperative bleeding and dealing with psychiatric patients.

**Keywords:** Clinical anxiety, dental students, trainers

**INTRODUCTION:**

Anxiety is one of the most common causes of dental fear [1]. There have been three stable and reliable factors which contribute to dental fear. The first factor is related to pattern of dental avoidance and anticipatory anxiety, second related to fear which is associated with specific dental stimuli and procedures and the third concerned with physiologic arousal during dental treatment [2]. Fear develops through interaction of three phenomena, those which are instinctive, dependent on maturation and developed through learning from individual and social experience [3]. Medicine and dentistry are stressful professions. Dental and medical students suffer high levels of stress and may experience adverse psychological symptoms and use dysfunctional coping mechanisms [4]. Several studies have been carried out to investigate anxiety provoking situations among medical and nursing students, but only a few among dental students [5]. Moss and McManus [6] investigated the anxieties of new clinical medical

students. It was found that about half of the total clinical situations elicited moderate to severe anxiety state among participants. Gender variation in the development of anxiety among medical students from pre-clinical to clinical stages of their education was documented by Greenfield et al [7]. A study by Davidovich et al [8] was carried out to assess self-reported stress during the performance of different procedures in pediatric dentistry, according to the professional experience of the dentists. Higher rates of stress during operative procedures were reported among dental students rather than experienced dentists. Anxiety of the pediatric patients, regardless the location of the procedure whether it was in upper or lower jaw, affected the dentists' reported level of stress. Levels and sources of stress, anger, anxiety and sadness, and associated coping mechanisms, in fourth-year dental and medical students were investigated by Hariss et al [4]. Online questionnaire was emailed to all fourth-year dental and medical students at the University of Otago,

in Dunedin (New Zealand). Findings of this study revealed that mental stability is indispensable for the compassionate, professional and competent delivery of care by health professionals. The high prevalence of detrimental emotions and adverse mental states reported by students before they enter the health workforce is alarming and needs to be addressed. A questionnaire study was conducted at medical college in Islamabad, Pakistan, from January to April 2014 to determine the probable factors responsible for stress among undergraduate medical students. The results of this study showed that the majority of undergraduate students experienced stress due to both academic and emotional factors [9]. It is evident that both the specialist and the patient's apprehension must be seen as a critical syndrome obliging treatment. One might say every time the dental practitioner is confronted with an apprehensive patient; he/she is managing a crisis [10]. It is not a dental emergency; however the crisis of apprehension for the dental practitioner confronting the fearful patient may result in a feeling of insufficiency and dissatisfaction unless he is trained to manage the issue expertly [10-20]. Lack of information from the trainers on the perceived anxiety provoking situations among dental students in the study also preclude the evaluation of disparity and similarities and the ability to make an informed recommendation geared toward alleviating anxiety and improving overall training. The objective of this study is to determine the clinical anxiety provoking factors among dental students from trainers and students' perspective.

#### MATERIAL AND METHODS:

This cross-sectional study was conducted among 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, Internship dental students, teaching staff members and dental practitioners working at Taibah Dental College in the period from 29<sup>th</sup> of February until 14<sup>th</sup> of May 2016 using the 38-item modified Moss and McManus clinical anxiety questionnaire [6]. Ethical approval was obtained from Taibah Dental College Ethics and Research Committee. The list of dental students and practitioners (consultants, specialist registrars, junior and senior dentists) was obtained from examination office at Taibah dental College. Only students and staff members whose holding a Bachelor Degree in Dentistry or equivalent were eligible to participate (No = 200). This includes 160 students and 40 trainers. A special data

collection form was developed and validated through a pilot study. The pilot study comprised 10 students and its aim was to evaluate the clarity of the described questions and the feasibility of the planned data collection form. Study questionnaire was distributed to students by class leaders, and by Head of Department to dental staff and trainers. Information was collected from participants on the areas that they consider it as greatest sources of anxiety. Students indicated their anxiety for each situation on a 4 – point scale ('Not anxious', 'Slightly anxious', 'Fairly anxious' and 'Very anxious'), scored as 1, 2, 3 and 4 for statistical analysis. Teaching staff and dental practitioners were asked to complete the questionnaire as they thought the dental clinical students had done. Uncooperative students, trainers or teaching staff were excluded. Data was collected and analysed. The statistical analysis was carried out using SPSS software (SPSS 20.0, SPSS Inc., Chicago, USA).

#### RESULTS:

Totally, 200 subjects were invited to take part. However, only 150 subjects approved to complete the study questionnaire (123 students and 27 clinical trainers). The final response rate was therefore 75%. The mean age of participant students was 22.8 years with a range between 20 and 26 years of age. However the mean age of the clinical trainers was 45.6 years with a range between 33 and 62 years of age. The number of male and female dental students was (73/50) respectively. In clinical trainers group there were 23 male and 4 female. Among those, there were 24 trainers holding a PhD degree, 2 holding a master degree and one with a Bachelor Degree in Dentistry.

#### Main analysis

It was considered appropriate to use non-parametric tests to analyse the data. The Mann-Whitney U Test was used to identify any significant difference between students and clinical trainers. Significance level was set at  $p < 0.05$ . In 5 out of 32 situations significant differences in anxiety were reported by students and trainers ( $P < 0.05$ ) (Table 1). Clinically, dental students reported higher level of anxiety than clinical trainers when they are presenting cases in clinical sessions, helping in a faint, failure of local anaesthesia (LA) injection and not meeting the requirements before the exam. However, clinical trainers were more anxious than dental students when they get involved in arresting postoperative bleeding.

**Table-1: Clinical situations with significant difference in mean anxiety scores**

Item	Dental student Mean (SD)	Clinical trainer Mean (SD)	p-value
Presenting cases in clinical session	2.11 (0.89)	1.56 (0.64)	<b>0.003</b>
Helping in a faint	2.50 (0.93)	1.85(0.99)	<b>0.002</b>
Failure of LA injection	1.89 (0.78)	1.56 (0.89)	<b>0.019</b>
Arresting post-operative bleeding	1.98 (0.87)	2.67 (1.00)	<b>0.001</b>
Inability to meet requirements before exams	3.20 (1.00)	1.89 (1.01)	<b>&lt;0.001</b>

Interestingly, participants in both groups recorded that they have high anxiety scores when they are dealing with psychiatric patients, treating medically compromised patients, coping with uncooperative patient, dealing with fainting patient, fracturing a tooth,

extracting wrong tooth, causing accidental pulp exposure, fear of patient's satisfaction, tearing of the cheek/lips due to catching on a dental burr, getting infected by patients, and giving wrong treatment ( $P>0.05$ ) (Table 2).

**Table-2: Thirteen dental situations with heights level of anxiety reported by both dental student and clinical trainers.**

Item	Dental student Mean (SD)	Clinical trainer Mean (SD)	p-value
Getting diagnosis wrong	2.19(0.76)	2.15(0.95)	0.631
Inadvertently hurting the patient	2.33(0.88)	2.30(0.99)	0.767
Dealing with psychiatric patients	2.44(0.90)	2.56(1.01)	0.621
Treating medically compromised patients	2.44(0.96)	2.44(1.05)	0.907
Coping with unco-operative patient	2.26(0.79)	2.15(1.06)	0.488
Dealing with fainting patient	2.56(1.03)	2.56(1.01)	0.955
Fracturing a tooth	2.27(0.95)	2.30(1.03)	0.814
Extracting wrong tooth	2.84(1.15)	3.22(1.05)	0.10
Accidental pulp exposure	2.70(1.04)	2.30(0.91)	0.064
Fear of patient's satisfaction	1.99(0.78)	2.04(0.81)	0.742
Tearing of the cheek/lips due to catching on a dental burr	2.37(0.91)	2.52(1.01)	0.377
Getting infected by patients	3.07(1.03)	2.93(1.27)	0.821
Giving a wrong treatment	2.68(0.88)	2.81(0.92)	0.461

## DISCUSSION

Studying dentistry is still considered for many students as a risky mission associated with scary situations [21-23]. The Levels of anxiety and depression will continue to increase as long as various stress factors are still present. Consequently, a prompt action is required in order to have psychologically healthy dental professionals in the future [23]. These improvements can be done through gradual modification for the current education system [24, 25]. This study was conducted by using a questionnaire which included 32 dental situations to determine the most anxious factors which might provoke the level of dental fear and anxiety amongst clinical trainers and junior clinical students.

The results of this study shows that dental students reported higher level of anxiety than clinical trainers when they are presenting cases in clinical sessions, helping in a faint, failure of LA injection and not meeting the requirements before the exam. However, clinical trainers were more anxious than dental students when they get involved in arresting postoperative bleeding. These points were recorded in 5 out of 32 situations of this study questionnaire. One possible explanation for increasing the level of anxiety in the junior dental students is their fear of getting involved with dental procedures which containing in somehow life threatening [26]. Moreover, students may be more delicate and sympathetic towards patient's physical status than trainers who held long life experience making them with no emotional arousal [8, 27]. The first author of this manuscript asked one of the

third year students who was very anxious in the first extraction session about the reasons for his unexplained scariness. The student said "I imagine myself having a tooth extraction and every time patient feels pain, I assume his panic feeling and taking in my account the worst scenario such as bleeding and breaking jaw might happened". On the other hand, participants in both groups considered 13 dental situations in this questionnaire as most anxious ones. These included dealing with psychiatric patients, treating medically compromised patients, coping with uncooperative patient, dealing with fainting patient, fracturing a tooth, extracting wrong tooth, causing accidental pulp exposure, fear of patient's satisfaction, tearing of the cheek/lips due to catching on a dental burr, getting infected by patients, and giving wrong treatment. Moreover, both dental students and clinical trainers scored either mild or no anxiety with 15 dental situations of this questionnaire. The results of the current study are consistent with earlier finding of previous study conducted by Kieser and Herbison, 2000 [28]. Anxiety questionnaire was completed by 120 dental students who were in their second and third years of study at the Faculty of Dentistry, University of Otago. This questionnaire was designed to analyze the expected discomfort with shifting from preclinical to clinical teaching amongst dental students. The findings of Kieser and Herbison's study revealed that the highest levels of anxiety associated with general clinical situations were felt for getting diagnosis wrong, hurting patients, dealing with medical emergencies, and getting infected. Majority of students were stressed by the prospect of surgical procedures, temporomandibular

joint problems, and failed local analgesia. Second year students recorded the highest anxiety scores on giving an inferior alveolar nerve block and in dealing with poor oral hygiene patients [29].

It was noticed in this study that there were similarity in the level of anxiety amongst dental students and clinical trainers regarding the most threatening dental situations. This can be explained by the fact that dental clinical students in Taibah Dental College were trained and fully prepared by the suitable courses and information before they would have started their clinical work. However in few dental situations such as: arresting postoperative bleeding, dealing with psychiatric patient, involving with a faint and fracturing a tooth, dental students either exaggerated or undermined their levels of anxiety. This can be explained by lack of knowledge or negligence of the dental student [29-32]. Finally, still dental treatment is considered as a main source of anxiety which affects not only the patient's perception but also all junior and senior dental practitioners [10]. A successful dental school is that one that has a competent teachers and clinical trainers. This can be achieved by running especially for new clinical students activities which contribute to their professional development and is relevant to their practice [33-38]. By establishing such action, a competent dental student will be able to perform any kind of dental treatment with a minimal level of anxiety [39].

#### CONCLUSION:

This investigation has demonstrated that clinical trainers and students have great similarity in their perspective on clinical anxiety provoking situations with slight differences. Clinical trainers' anxiety dramatically increased with most risky clinical conditions such as getting infected by patients, arresting postoperative bleeding and dealing with psychiatric patients. The prevalence of this anxiety demonstrates the need for both early recognition and student management strategies (psychological and clinical management) to positively influence their clinical experience.

Limitation of this study was the sample size. So, further study with larger sample size for both clinical trainers and dental students might have more valid conclusion.

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