INTRODUCTION

Dentistry is profession of perfectionism with clinical knowledge and high academic excellence along with patient management skills. In India, dental education is a hierarchical system in which, the first 2 years are preclinical while third and final year are years, where students are exposed to clinics and patients followed by 1 year of internship.\(^1\)\(^2\) Dental curricula require students to attain diverse proficiencies including acquisition of theoretical knowledge, clinical competencies and interpersonal skills.\(^3\) All these stressful environment may lead to fear and anxiety in dental students. Anxiety is an emotion characterized by feelings of tension, worried thoughts and physical changes like increase in blood pressure.\(^4\) Clinical anxiety is the emotional reaction that health professional feels before delivering health care.\(^5\) The transition from preclinical to clinical settings i.e. doing procedures on phantom upto delivering health care to patient poses challenges that may cause undergraduate dental students to experience anxiety. It might be in dental education system due to apprehension of reduced performance or being incapable of doing clinical work. With transition in years there is increase in stress among dental students. Various studies have reported that managing patients was one of the most stressful condition.\(^6\)\(^9\) Sources of anxiety may vary among students exposed to different preclinical curricula and different educational environment.\(^10\) The anxiety can be considered as double edge sword. Minimal anxiety is good for students as it makes them task oriented and aids concentration. However excessive anxiety increases risk of psychosomatic disorder, decreases learning, impairs performances and undermines optimal healthcare behaviour.\(^11\)

ASSESSMENT OF CLINICAL ANXIETY AMONG THIRD AND FINAL YEAR UNDERGRADUATE STUDENTS OF DENTAL COLLEGES OF AHMEDABAD CITY- A CROSS SECTIONAL STUDY

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ABSTRACT

Aim: Dental curricula require students to attain diverse proficiencies including acquisition of theoretical knowledge, clinical competencies and interpersonal skills which may lead to stress and anxiety among students. Hence, present study was aimed to evaluate clinical anxiety in third and final year undergraduate dental students of Ahmedabad city.

Materials and methods: A cross sectional study was conducted among third and final year undergraduate students of three randomly selected dental colleges of Ahmedabad city between March to May 2019 using modified moss and mac mannus questionnaire consisting of 38 items covering six domains. Unpaired t test was used for inferential analysis. Level of significance was kept at 5%.

Results: Severe anxiety producing conditions among all the students were getting infected by patient, examination failure, fracture of tooth, extraction of wrong tooth and accidental pulp exposure. Third year students showed significantly higher anxiety than final year students among 21 items out of 38 items. Females were significantly higher anxious in 15 situations compared to males. In communication related domain, males were significantly higher anxious than female.

Conclusion: The results of the present study indicated that in general moderate level of clinical anxiety was present among all the students regardless of year of the study and gender. Identification of potential problems in dental teaching programs is important as it might give the students, faculty and administrators an opportunity to take precautionary measures, if needed to prevent clinical anxiety.
From the available literature it has been found that very few studies have been carried out to assess clinical anxiety in undergraduate dental students as compared to medical courses. Hence, present study was aimed to evaluate clinical anxiety in third and final year undergraduate students of dental colleges of Ahmedabad city with following objectives

- To evaluate clinical anxiety level in third and final year undergraduate student.
- To compare the clinical anxiety between third and final year undergraduate dental student.
- To compare the clinical anxiety between male and female undergraduate dental students.

**MATERIALS AND METHODS**

A descriptive cross sectional study was conducted among third and final year undergraduate students of three randomly selected dental colleges of Ahmedabad city between March to May 2019. Ethical approval to conduct the study was obtained from Institution Review Board of AMC Dental College & Hospital(AMC/IRB/PHD/INT04//19).

A specially designed proforma was used for collection of data. The structured proforma consisted of two parts, the first part pertaining to the questions that included demographic information like age, gender, year of study and name of the college. The second part consisted of modified Moss and MacManus questionnaire for assessing clinical anxiety which consisted of 38 close ended items covering 6 domains (Academic related situations, Communication and health team interactions, Investigations related situations, Diagnosis related situations, Act of treatment related situations, Deficiencies and error in treatment related situations) and the responses were given in four point Likert scale. The scale ranges from “not anxious,” “slightly anxious,” “moderately anxious,” to “very anxious.” For the purpose of analysis, response was scored 1 for not anxious, 2 for slightly anxious, 3 for moderately anxious, and 4 for very anxious. Validity of this questionnaire has already been assessed among Indian students.

Prior to the start of the study, permission to collect the data was obtained from the Dean of the concerned colleges and a day and date was finalized. All the students who were present on the day of data collection and willing to sign the informed consent form were included in the study. The purpose of the study was explained to all participants and 15 to 20 minutes were given to fill up the study proforma during their leisure time. The completely filled study proforma with duly signed consent form were only used for analysis of data.

**Statistical analysis:** A total of 394 completely filled proforma were used for analysis. To check the appropriateness of sample size, power analysis was done which has revealed the power of the study of 82%, hence the sample size was considered sufficient to analyze and interpret the data. Data was analyzed by using SPSS version 17. Unpaired t test was used for inferential analysis. Level of significance was kept at 5%

**RESULTS**

**Table 1** Over all mean anxiety score according to study year and gender

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third year</td>
<td>2.24(1.01)</td>
<td>0.13</td>
</tr>
<tr>
<td>Final year</td>
<td>2.09(0.94)</td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>2.10(1.00)</td>
<td>0.50</td>
</tr>
<tr>
<td>Females</td>
<td>2.17(0.96)</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 shows overall mean anxiety score according to study year and gender. Third year students were slightly higher anxious than final year students with mean anxiety score of 2.24(1.01) and 2.09(0.94) respectively & females being slightly more anxious than male with mean anxiety score of 2.17(0.96) and 2.10(1.00) respectively, but the results were not statistically significant.

**Table 3** shows distribution of perceived source of clinical anxiety in male and female .Out of 38 situations female were significantly higher anxious in 15 situations which were mainly related to academic domain along with deficiencies and error in treatment related situations. In communication related domain, males were significantly higher anxious than female. The severe anxiety provoking situations amongst all the students in descending order were getting infected by patients, extracting wrong tooth, examination failure, accidental pulp exposure and fracture of the root.

**DISCUSSION**

The learning process of professional knowledge, skills and attitudes were reported as the most stressful period of medical training. The mental status of dental students is one of the important issue to be taken into consideration for well being of student.
Table 2 shows distribution of perceived source of clinical anxiety among third and final year dental students.

Third year students showed significantly higher anxiety in situations like clinical case presentation, Inability to meet requirement, Difficult question from patient, Talking with patients, Communication with elderly, Taking History & pulse requirement, Difficult question from patient, Talking with situations like clinical case presentation, Inability to meet anxiety in third and final year dental students.

Using extraction force, Using high speed hand piece , Fracturing a tooth and Accidental pulp exposure.

Table 3 shows distribution of perceived source of clinical anxiety among male and female dental students.
cope up with learning new clinical dentistry skills along with exam of medical subjects and in final year they have to take up the exams of 8 subjects in which the practical exam are on patients having certain criteria which might make it more difficult and more specific.

Students were severe anxious in situations like fracturing the tooth and extracting wrong tooth. The findings are in accordance with the study reported by Lakshmi et al., Obarisiagbon et al.14, Kieser et al.15. This may be due to the fear of not being able to extract the retained tooth due to inability to get proper apical thrust grip by forceps or also not knowing the direction & amount of force to be applied to remove the fractured tooth and medico legal implications associated with extraction of wrong tooth.17

Significantly higher anxiety among third year students was noted in communicating with patients, taking history, examining patients and making and presenting diagnosis to the instructor as compared to final year students. It might be because of transition and acquaintance with the new environment of dealing with the patients directly in the clinical setting. The higher anxiety in telling patient about not knowing the diagnosis might be due to fear of being embarrassed in admitting their inability or lesser knowledge in front of patient & may also have the fear of losing their trust.18

Significantly more anxiety among third year students in restorative dentistry like using high speed hand piece and accidental pulp exposure might be because of doing the restorative procedure directly on patients in the clinics. The fine neuromuscular skills might not have developed in them and they might have the fear of inadvertently hurting the patients by causing damage to surrounding oral structures like tongue, buccal mucosa.14

The failure to meet clinical requirement, which is one of the requirement for qualification for the examination, disqualifies one from participating the examination, thereby explaining its ranking in clinical anxiety provoking situations in final year students. The results are in accordance with the study reported by Obarisiagbon et al.14

Uncooperative patients and child patients require lot of patience, efforts & understanding of their psychology. Low interest coupled with lack of confidence & skill regarding management of child patients & uncooperative patients might have produced more anxiety among third year students compared to final year students. This finding is reinforced by study conducted by Kalaa et al. among dental student in Turkey.19

Females were significantly more anxious than males in situation like inability to make requiremnet, examination failure, making diagnosis, not being able to defend diagnosis, psychiatry patient, coping with uncooperative patient, extracting wrong tooth, trainer detecting calculus after scaling, fear of patient satisfaction for denture and getting infected by patient. The findings are in accordance with study reported by Kieser et al.20 and Acharya et al.21. This dissimilarity may be because women being better able to show their feelings of fear because of their though control strategies and metacognitive beliefs, which lead them towards emotional and neurotic problems.22 Furthermore, physiological condition such as fear, stress, social phobia are more prevalent in females and clinical anxiety may be related with such feelings.21-22

Males were more anxious than females in situation like clinical case presentation, interacting with nurses , talking with patient, communication with elderly, measuring BP and filling of lab request form. It may be because females find same-sex social interactions to be more rewarding than males, and females are more sensitive to the rewarding actions of oxytocin than males, according to a new research on the brain mechanisms that determine the rewarding properties of social interactions.23

CONCLUSION AND CLINICAL SIGNIFICANCE

The results of the present study indicated that in general, moderate level of clinical anxiety was present among all the students regardless of year of the study or gender. Severe level of clinical anxiety was noted in 5 out of 38 situations. Severe clinical anxiety increases the risk of psychosomatic illness, impairs learning and thus affects the clinical outcome of dental treatment to a greater extent. Establishment of student advisor and student counselors within dental school as recommended by Schwartz et al.24 along with a good mentor- mentee relationship can foster a better learning environment and may help to reduce level of clinical anxiety. These specific psychological strategies will help in combating the burden of anxiety and stress in students that will further enhance the quality of dental treatment. It would be interesting if we get a chance to explore the same from teacher’s perspective also. These psychological perspectives of the students related to clinical anxiety requires a plethora of further research in efforts to capture valid and reliable results.

Acknowledgement

We are grateful to the Dean of AMC Dental College and Hospital, Dr. Dolly Patel for her invaluable mentorship, support and guidance for the study. We are also sincerely thankful to the Dean of all the respective Dental Colleges of Ahmedabad, who permit us to conduct this study. Last but not the least, we are extremely thankful to the students who willingly participated in this study.

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