


Domains of Students' Concerns in Oral Diagnosis and Surgery Clinic

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Background: Oral diagnosis and surgery education is the main educational subject in dental schools. Due to its importance and the demand to achieve a proper level of training, dental students might have some concerns related to this subject. The study aims to investigate domains related to students' concerns in oral surgery clinics.

Materials and Method: An online questionnaire of five domains was circulated to 211 fourth, and fifth-year students. The domains include; the benefit of oral surgery lectures in oral surgery clinic; the importance of oral surgery clinic, what they fear the most during their oral surgery training; difficulty domain, and importance domain. It was distributed to a sample of 211 fourth-, and fifth-year students at the Ibn Sina College of Dentistry, Baghdad, Iraq in January, and February 2022.

Results: In the domain of "benefit of oral surgery lectures in the oral surgery clinic" Half of the respondents think theory lectures are useful. About one-third of the students believe it is essential. The most important item in the domain of "most factors students' fear" was the item of nerve injury (42.1%). Incomplete tooth removal was reported in (32.7%), whereas post-extraction bleeding was reported by (19.2%). In the domain "the most difficult" 71% of students stated that it is dealing with uncooperative patients was the most important item. Similarly, in the domain "the most important" the majority of students reported that correct surgical diagnosis (70.1%) is the most important item, followed by master extraction technique (26.2%), and master anesthesia technique (3.7%).

Conclusion: This study evaluated the "fear", "difficulty", and "importance" domains of students' concerns during oral surgery training. There is a noticeable shift in students' attention toward clinical reasoning compared to the technical aspects of surgical training. This positive shift reflects the perceived importance of diagnosis for proper clinical practice. This needs to be encouraged by the teaching staff.

Keywords: oral surgery, dental education, clinical reasoning

Introduction

Oral surgery is a branch of dentistry that deals with diagnosing, preventing, and/or treating diseases, disorders, and/or conditions of the oral cavity.¹ Surgery is a very practical subject and requires hands-on experience to develop the skills required to practice it successfully. It also mandates efficient diagnostic skills. That is why oral diagnosis and oral surgery are merged into one clinical department in some dental education institutes to encourage the simultaneous development of both cognitive and surgical skills.²

Both oral diagnostics and oral surgery necessitate apt knowledge of anatomy, applied physiology, and pathological conditions to reach accurate management. Furthermore, undergraduate dental students need to develop sound diagnostic alongside technical skills. These skills are acquired through extensive practice.^{1,3}

Needed knowledge and skills in oral surgical training might put the undergraduate student under the pressure of these requirements. This results in a certain degree of stress during clinical training.⁴ Clinical training exposes students to a variety of patient-related stressors similar to those experienced by dentists⁵ and could generate certain concerns from the students toward their performance.

The study aims to evaluate the domains of concern toward oral surgery training from students' perspectives.

Materials and Methods

An online questionnaire of five domains was selected and formulated with their items by the students with the assistance of the first researcher. The domains include three core domains; what they fear the most during their oral surgery training; difficulty domain, and importance domains. There are two complementary domains: the benefit of oral surgery clinics; the importance of oral surgery clinics. In addition, gender and academic level were included in the questionnaire.

To ensure the validity of the selected instrument, the domains of the questionnaire and their items were suggested by randomly selected 5th-year students with the assistance of the first researcher. The first researcher has over 10 years of academic experience in oral surgery education.

All participants were informed about the nature of the questionnaire and the aim of this study and consented. A statement was provided at the beginning of the questionnaire stating that the participant has the choice of participation or withdrawal. The questionnaire was circulated to 211 fourth, and fifth-year students at the Ibn Sina College of Dentistry, Baghdad, Iraq between January, and February 2022. The choice of 5th-year and 4th-year students as study respondents was because there is no clinical training for the 3rd-year students in Iraqi dental schools.

The research was acquired by the ethical research committee of Al-Mustansiriyah University. Participants were informed about the aim of the research, and they are free to participate or decline their participation. Their identity will be anonymized.

SPSS Ver.25 was used for statistical analysis. Both descriptive and inferential statistics were applied to provide the study results. Percentages for each domain item were provided. Spearman Correlation Analysis was used to identify the relationship between ordinal variables. Chi-Square Test was applied to identify the relationship between categorical variables, categorical and ordinal variables.

Results

The female-to-male ratio as shown in Table 1 is 3/1. The number of participants from the fourth year is higher than the fifth-year students. Fourth-year female participants showed a significantly higher number of responses compared to both males and females in the fourth and fifth years. Almost half of the responses were provided by fourth-year female students.

Figure 1 highlights the highest responses for the domains (most important-nerve injury students, difficulty-dealing with an uncooperative patient, and fear-correct surgical diagnosis). Dealing with uncooperative patients and surgical diagnosis showed the highest level of responses compared to all other items in all domains for both males and females with comparable numbers. In contrast, nerve injury showed less level of concern among the participants.

As shown in Table 2, not all students share the same level of appreciation toward the role of oral surgery lectures in oral surgery clinic training oral surgery clinics are either unnecessary or useless one-third of the students believe it is essential. Interestingly, around 3% of students think oral surgery clinics are either unnecessary or useless. Spearman Correlation Analysis showed no significant relationship was found between the benefit of the lecture's domain and important items and what students fear domains ($P= 0.505$ and 0.371 respectively).

There are two major factors in the fear domain, as stated by students. The most of which interesting is the fear of nerve injury. Students, seem to be cautious about IAN injury Post-extraction. The second cause was the fear of

Table 1 Participants' Gender by Academic Year (n=211)

Academic Year	Male	Female
Fourth Year	24	97
Fifth Year	27	63
Total	51	160

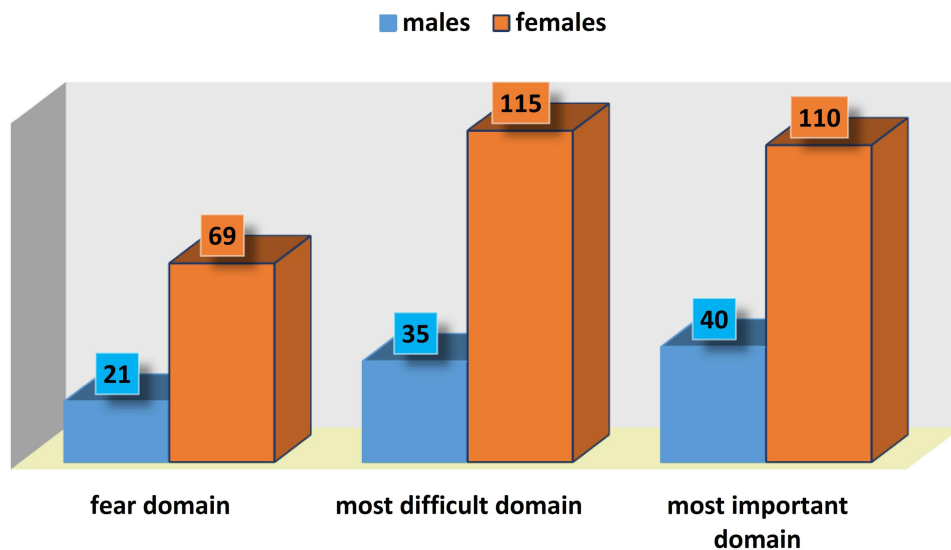


Figure 1 Highest responses among all the domains' items.

incomplete tooth removal. Post-extraction bleeding was reported by some students. Failure of anaesthesia was reported as one of the fear factors in a smaller number of responses. The least percentage of fear of soft tissue injury during dental extraction.

Table 2 Response of Students for Each Item in the Five Domains by Gender (n=211)

Item	Males	Females
Domain/ benefit of oral surgery lectures in the clinic		
Useful to a good extent	27	86
Extremely useful	16	63
Useful to a little extent	3	10
Not really useful	4	0
I do not rely on them	1	1
Domain/ importance of oral diagnosis and surgery clinic		
Essential	31	102
Very important	14	50
Important	5	7
Not necessary	1	0
Not really useful	0	1
Domain/most factors students' fear		
Nerve injury	21	69
Incomplete tooth removal	20	48
Post-extraction bleeding	6	34

(Continued)

Table 2 (Continued).

Item	Males	Females
Failure of anesthesia	1	8
Soft tissue injury	3	1
Domain/most difficult		
Dealing with an uncooperative patient	35	115
Extraction of a multi-rooted tooth	13	35
Inferior alveolar block anesthesia	3	10
Domain/most important		
Correct surgical diagnosis	40	110
Master extraction technique	9	45
Master anesthesia technique	2	5

As the domain of “most important” shows, correct surgical diagnosis occupies the thinking of the vast majority (70.1%) of the students. Mastering the extraction technique was considered an important item in this domain by 26.2% of the respondents. Only a small minority (less than 5%) think mastering local anaesthetic techniques is the most important item. Chi-Square Test showed a highly significant relationship between the importance and fear domains ($P=0.003$).

Dealing with an uncooperative patient is considered the major item in the difficulty domain. It largely surpasses the altogether extraction of multiple root teeth and the difficulty of local anaesthesia altogether. Both 4th and 5th-year students shared a comparable level of concern regarding the difficulty domain (Figure 2). It is expected that local anaesthesia is not found as difficult, in technical terms, as the extraction of a multi-rooted tooth. Less than 10% of students referred to the difficulty of local anaesthesia compared to extraction of a multi-rooted tooth, which was voted for by about 23% of the participants. Chi-Square Test showed no significant relationship between fear and difficulty domains ($P=0.115$).

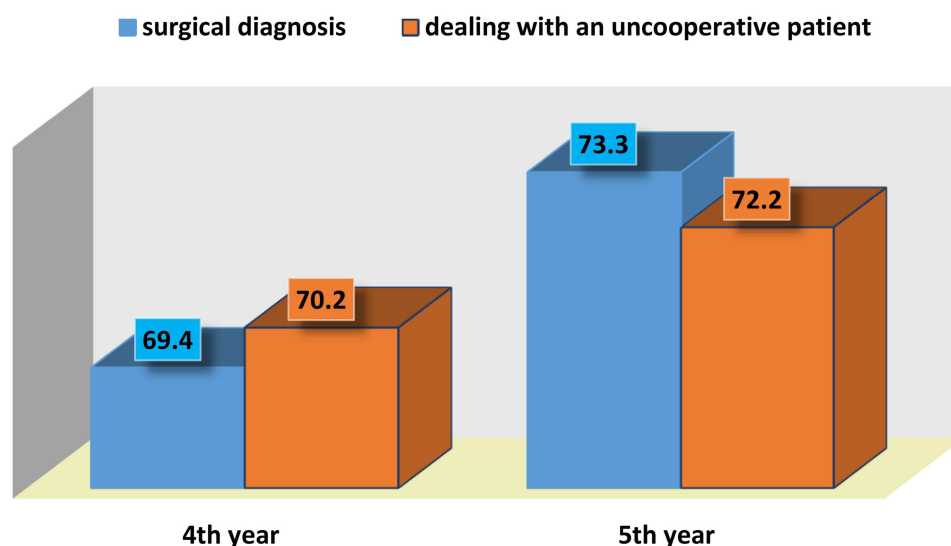
**Figure 2** 4th and 5th-year students' response levels in relation to patient management and diagnosis.

Table 2 clarifies the importance of correct surgical diagnosis, as an important learning objective from students' perspective. It was reported by the vast majority of students. Similar to the Difficulty Domain, 4th and 5th-year students provided close percentages in relation to the Surgical Diagnosis item (Figure 2). The second important thing students wish to learn is to master extraction techniques as reported by approximately one-fourth of the respondents. Mastering anesthetic techniques was reported by a small minority of students.

Discussion

This study attempts to highlight the main aspects of oral surgery training within the academic context. Knowledge of students' concerns toward oral surgery education allows them to have an active role in their clinical education process. This is what specifies this study. It is a fact that domains and items were suggested by the students themselves. The five domains could help to focus the educational effort in a direction of more importance from students' point of view.

As reported by other Iraqi studies, there are more female participants in this study, which could be attributed to females being interested in dentistry more than males.^{6,7} It is, also, expected that most respondents are from the fifth year because they seem more interested. They have more experience in oral surgery clinics compared to other students. The more practice student has more relevant the questions become. Fifth-year students are more aware of their needs and can provide more accurate information.

The nature of the question and the range of possible choices for answers reflect the students' mindset. Give the researcher to have a better understanding of students' viewpoints. Furthermore, students' views toward their colleagues' answers also guided the discussion section. This sheds light on students' opinions regarding different provided answers.

Students' responses regarding their benefit from theoretical knowledge in their practice theory is mainly maxillofacial rather than oral surgery material in the fifth year provided theoretical material is not confined to the oral surgery theory is mainly maxillofacial rather than oral surgery material in the fifth year material.

The results of this study can be viewed from two aspects. The first aspect is the relationship between the domains. This aspect raises more than one educational concern, as it reflects what is perceived as a shortage in the overall training process. It was expected that students' concerns, and fears to be changed with the progress of their undergraduate practice. The absence of an obvious relationship between students' answers toward the practice environment in the oral surgery clinic and the study year is alarming. It could be a sign that advances in clinical training during the study in oral surgery clinics are not as productive as they should be.

The lack of a noticeable relationship between "fears" and "difficulty" domains might reflect the fact that fears are more related to their theoretical background rather than their practical training. The fear of IAN injury during dental extraction is not something students usually face during straightforward dental extraction. It is mainly faced during surgical extraction of the lower third molar,⁸ which is a procedure they only assist in.

An interesting finding in this study is the item of "dealing with an uncooperative patient". There are different types of uncooperative patients; such as aggressive, manipulative, patients with invasive companions, or help-rejecters.⁹ Although an uncooperative patient is a fact, still, the literature does not seem to focus on this concern among dental students. Most of the available studies focus on managing uncooperative children.¹⁰⁻¹² Being an obvious item in the domain of difficulty makes it necessary to help students to overcome this difficulty with communication training.¹³

The noticeable link, however, between "fear" and "importance" domains might reflect the need for pre-clinical extraction training to master dental extraction and avoid its complication. Mastering dental extraction seems to be the students' main focus during their oral surgical training. This confirms what has been mentioned in the literature about the technical aspect of surgical training. For undergraduate students, this is an essential prerequisite for their training.²

This study's findings raise three essential issues of undergraduate oral surgical training, which are crucial for students. These are; surgical diagnosis, dealing with uncooperative patients, and mastering the extraction technique. These factors complement each other. The authors addressing of these factors helps students to build their clinical confidence. Problem-based clinical education might need to be implemented.¹⁴

Both 4th and 5th-year students were affected by COVID-19 Lockdown. A previous study conducted on the outcome of oral surgery education during COVID-19 on oral surgery education found that oral surgery has lost its peculiarity among other clinical subjects.⁶

Nevertheless, there is a positive finding of this study, which is the second major issue raised by this study. The importance of surgical diagnosis being a student's obvious concern might be considered an important shift in their attitude toward clinical reasoning. Clinical reasoning is broadly defined as the cognitive processes that enable clinicians to utilize and analyze clinical information.^{15,16} A previous study conducted by an Iraqi research team found that undergraduate students' essential focus is on the technical aspect of surgical training.⁷

Dealing with patients while performing the diagnosis appears to occupy an important area within the students' concerns. Performing both tasks simultaneously could be an important finding of this study. Competence in clinical reasoning could boost students' confidence during patient examination and overall management. Students' fear of uncooperative patients is related to their lack of confidence. This lack of confidence can be addressed by preparing clinical reasoning skills. Of course, continuous training will also help students to be more confident as they treat more patients.

The shift in the students' thinking toward clinical reasoning needs to be implemented with a wider scope of clinical training, which in turn will shape the outcome.¹⁷ Implementation of this study's findings in Iraq should consider academic staff awareness toward students' cognitive skills side by side with the development of their technical skills. For example, higher marks need to be given for the accuracy of surgical diagnosis.^{18–20}

It is logical to assume that the domains of "fear", "difficulty", and "importance" are common in students regardless of their academic affiliation. It is expected, however, that some items could differ in terms of wording or presence or missing other items within each domain. This is the main limitation of this study. However, this would encourage other studies to be conducted in different academic institutes with more emphasis on these domains.

Conclusion

This study evaluated the "fear", "difficulty", and "importance" domains of students' concerns during oral surgery training. There is a noticeable shift in students' attention toward clinical reasoning compared to the technical aspects of surgical training. This positive shift, which reflects the perceived importance of diagnosis for proper clinical practice. This needs to be encouraged by the teaching staff.

Acknowledgments

The authors would like to thank Mustansiriyah University and Ibn Sina University of Medical and Pharmaceutical Sciences; College of Dentistry, Baghdad – Iraq (www.uomustansiriyah.edu.iq). Also, the authors would like to express their gratitude to Maha Natheer Ismael, Rusul Abbas Thamer and Ghadeer Ahmed Fouad for their help in data collection and organization. In addition, the authors' thanks are extended to the participants for sharing their concerns and providing the material for this research.

Funding

This research did not receive any funds from any institute or agency.

Disclosure

The authors confirm that there is no conflict of interest related to this research.

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