

Dental Interns and Students Self-Confidence toward Oral Surgery Clinical Procedures

Original
Article

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ABSTRACT

Background: Dental colleges in the world have different missions and the dental curriculum varies between dental colleges. Oral surgery is an important clinical specialty in the dental curriculum. As the curriculums vary, the oral surgery teaching and clinical trainings also vary. Due to these variations, it is important to highlight the findings of previous studies that investigated the teaching and education of oral surgery.

Aim: The aim of the study is to summarize the perception of dental interns and students toward oral surgery learning outcomes.

Materials and Methods: In this brief review, a summary of the review of selective previous publications is presented. Medline and Google were used as the search engine for the previously published articles.

Results: The previous studies showed variations in the confidence level of dental undergraduate students toward different oral surgical procedures. Dental interns and students have higher level of self-confidence in performing simple extraction procedures. Other clinical procedures such as surgical extraction, biopsy, and flaps were not perceived well by interns and students.

Conclusion: This review showed that dental students and interns have basic knowledge and clinical oral surgery procedures. It is recommended that dental colleges make every possible effort to update the oral surgery didactic and clinical components of the oral surgery courses for undergraduate students

Key Words: Dental students perception toward OMFS, oral surgery education, self confidence toward oral surgery procedures.

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INTRODUCTION

In Dentistry is a specialty responsible to maintain the health of soft- and hard-tissue of oral and perioral structures and tissues (ADA). This is done by means of prevention, diagnosis, and treatment of oral diseases and conditions including developmental and acquired diseases and syndromes. It has different specialties, one of which is Oral and Maxillofacial Surgery (OMFS).

Oral and Maxillofacial Surgery (OMFS) is a surgical specialty of dentistry concerned with the management of diseases of the jaws, mouth, face and neck regions^[1] (ISCP, 2007). In addition to the management of oral pathological conditions, the practice of Oral and Maxillofacial Surgeon includes many life-threatening conditions of the craniomaxillofacial complex^[2,3] (Vadepally, *et al.* 2015; Kumar, *et al.* 2017) These include trauma to the craniomaxillofacial region, cancers of the head and neck, facial clefts, orthognathic surgery, surgical extractions of impacted teeth, diseases of temporomandibular joints, diseases of salivary glands, fascial space infections, pre-

prosthetic surgery and osseo-integrated implants among others^[4] (Ebele *et al.*, 2019). Furthermore, The American Association of Oral and Maxillofacial Surgeons (AAOMS) listed the purposes of oral surgery to be: reconstructive surgery, tumor removal, dental implant placement, diagnosis and treatment of infections, repairs to the face, jaw, and mouth and the correction of deformities^[5,6] (Alumni Celebration June 172011 ,18-; Tiwari *et al.* 2017).

For the dental undergraduate education, the clinical training as well as the clinical requirements varies from one college to another. Furthermore, in different countries, fresh graduates are required to complete one-year training as an internship before being they are registered as a licensed dentist. This variation makes the learning outcomes of oral surgery courses in different colleges not benchmarked to each other. It is important that a graduate from dental surgery program have similar important learning outcomes in the specialty of oral surgery. Therefore, the aim of the study is to summarize the perception of dental interns and students toward oral surgery learning outcomes.

Oral Surgery Education:

Dental education is a medical education focusing on the dental and para-dental soft and hard tissue. For years, dental education underwent several developmental plans aiming to improve the dental students to better acquire knowledge and clinical experience. Within the dental curriculum, courses are given in different specialties one of which is the OMFS. In addition, OMFS is taught as postgraduate programs.

The development of OMFS started early by James E. Garretson who can be considered with Hullihen to be the founder of OMFS. As early as 1864, the academic structure of the OMFS specialty was established.^[7]

(A Historical Overview of the AAOMS, 2013). Since then, the OMFS has become an integral part of dental and medical specialties. The OMFS is taught to dental undergraduate students in almost all dental colleges.

The parent organization of OMFS, which is the International Association of Oral and Maxillofacial Surgeons (IAOMS) based in the United States and looks after the interest of the specialty on a global basis, has developed an International Guidelines for Training and Education in Oral and Maxillofacial Surgery which were adopted in its meeting held in Durban in 2001^[8] (Revised and approved in Durban 2001). These form the core recommendation of the training in OMFS with acceptance of regional differences.

The aim of the dental curriculum in dental colleges is to provide dental students with the highest theoretical and practical education and training to prepare them for their clinical work after graduation. This includes enhancement of the undergraduate education in the OMFS subjects.^[9,10,11] (Wanigasooriya, 2004; Macluskey *et al.*, 2008; Macluskey *et al.*, 2009). Different teaching and assessment types are used. These include theoretical, preclinical, and clinical teaching.

Assessment of students has a very important and crucial role in evaluating the efficiency of the provided education methods and the achievement of the intended learning outcomes of future graduate dentists^[12,13] (Cowpe *et al.*, 2010; Koole *et al.*, 2017). The different types and aspects of dental curriculum's teaching in general and the OMFS courses in specific ensures the students' performance and achievement to be assessed by academic faculty and clinical instructors and prepare them for the challenges of surgery^[9,11,14,15] (Macluskey *et al.*, 2004; Wanigasooriya, 2004; Macluskey *et al.*, 2009; Kamal *et al.*, 2021).

A graduating dentist must be competent in a broad variety of skills, including investigative, analytical, problem solving, planning, communication, team building, and leadership skills and has to demonstrate a contemporary knowledge and understanding of the broader issues of dental practice^[16] (Chouchene *et al.*, 2020).

Meeting the certification requirements of the OMFS is achieved by proper curriculum and teaching as well as assessment strategies. The curriculum and the teaching include integrated didactic knowledge as well as clinical requirements by means of effective clinical instructions in related topics such as dento-alveolar surgery, anatomy, pathology, management of medically compromised patients, and local anesthesia and pain control.

The clinical teaching of the OMFS courses provides undergraduate dental students with clinical training in local anesthetic techniques, dental extractions, and minor oral surgeries. This is taught to students in order to enhance the skills acquired during undergraduate education^[17] (Aldajani, 2015).

Previous study has highlighted some fundamental issues concerning training^[18] (Laskin, 2008). The most important issue is the countries and regions that needs to decide what standards have to be maintained and carried out for one to become eligible as an OMF Surgeon.

He strongly suggests the need to recognize the competence of dental teaching with subsequent medical training and not essentially a degree as a prerequisite for completion of requirement in maxillofacial surgery. He further emphasizes upon the fact that not all the people who gets associated with the OMFS have or need to have the same range of practice.

Laskin (2008)^[18] divides the scope of OMFS into 3 parts: (i) areas of expertise (includes the oral pathological conditions, oral medicine, dentoalveolar surgery, pre prosthetic surgery and maxillofacial trauma), (ii) areas of competence (this involves orthognathic surgery, TMJ surgery, and local reconstructive surgery), and (iii) areas of familiarity (includes the congenital facial deformities such as cleft lip and palate surgery, regional reconstructive surgery, oncologic surgery, craniofacial surgery, and cosmetic surgery).

Dental Students and Interns OMFS's Clinical Experience:

As any other new practical experience, dentistry clinical training for undergraduate students requires well-structured and designed courses with well-qualified faculty and teaching staff. Preclinical training on manikins may help dental students to develop operative clinical skills as well as increases their competence level in the processes of their actual clinical training.

For these purposes, some dental colleges use preclinical models for the teaching of extraction skills^[19,20] (Ali *et al.*, 2014; Moore *et al.*, 2009). Early exposure to clinical practice may increase the dental students' extraction experience. It has been reported that availability of suitable cases is a limitation of the undergraduate dental students experience in the oral surgery^[20,21] (Moore *et al.*, 2009; Durham, 2020). In the UK, the outcomes of the undergraduate oral surgery

curriculum are to deliver new graduates with the ability to work independently in primary care as a vocational trainee, under the tutelage of an experienced dentist, for a 1-year period. These outcomes are essentially the same as those outlined in the second edition of 'Profile and Competencies of the Graduating European Dentist^[22] (Cowpe *et al.*, 2010). Specifically new graduates are expected to be able to carry out forceps extraction of erupted teeth and roots. In the case of a failed forceps extraction, they should be able to raise a mucoperiosteal flap and carry out bone removal, tooth sectioning and elevation of the roots of the tooth prior to wound closure with sutures.

In addition, they should be competent in the diagnosis and management of third molar related disease and be cognisant with the referral guidelines^[23] (Royal College of Surgeons of England Faculty of Dental Surgery, 1997). In addition, they should also be able to recognise and refer potentially malignant and malignant lesions of the oral mucosa and be able to differentiate between pain of odontogenic and non-odontogenic origin.

(Macluskey *et al.*, 2012). The more the student is trained, the higher his/her confidence to provide the OMFS treatment to patients. In regard to the degree of confidence and the number of teeth extracted, it has been reported that with the increase in the total number of extractions completed, the student's confidence level increased significantly^[17] (Aldajani, 2015). One might assume that upper-level students might have relatively more self-confidence than their lower level counterparts because they have had relatively more clinical experience^[25] (Cabbar *et al.*, 2019).

The confidence levels in performing oral and maxillofacial surgery procedures was investigated by several studies^[17]. Aldajani (2015) reported that undergraduate dental students have the highest level of confidence in giving local anesthesia (96.9%).

He also reported that no students rated the first extraction experience to be "very difficult". In the same study, students reported the lowest level of confidence in taking a biopsy of an intra-oral lesion, or a lesion on the skin, whenever the surgical intervention involved handling of difficult extractions, extracting molars with separation, or extracting third molars, they reported relatively less confidence compared to confidence in performing simple extraction.

In another study, Kamal *et al.*^[15] (2021) found that senior and junior dental undergraduate students have high level of confidence to perform extractions by the use of forceps, and good higher level of confidence when diagnosing conditions commonly seen in oral surgery practice (management acute pericoronitis and haemorrhage from an extraction socket, assessing impacted teeth, and recognizing the clinical features of potentially malignant and malignant lesions of the oral cavity. Similar findings were reported by Burdurlu *et al.*^[26] (2020) in which the

older class reported being more confident than those in lower year groups. Furthermore, several studies reported that after graduation, students have high level of confidence to undertake private practice and perform extractions with forceps and minor oral surgery procedures, confidence scores were favorable^[9,23,24,26] (Wanigasooriya, 2004; Macluskey *et al.*, 2012; Cabbar *et al.*, 2019; Macluskey *et al.*, 2016; Burdulu *et al.*, 2020).

Durham *et al.*^[21] (2007) reported that dental undergraduate students' lack of self-confidence because surgical extraction is one of the most invasive procedures in clinical settings. They related this finding to the lack of practical experience in surgical extraction.

Furthermore, they found that self-confidence regarding surgical extractions significantly correlated with self-confidence regarding mucosal flap reflection, bone removal, sectioning the roots, and suturing^[21] (Durham *et al.* 2007). This might result from the lack of suitable cases for undergraduates to participate in^[20,21] (Durham *et al.* 2007; Moore *et al.* 2009).

This could also possibly be due to postgraduate oral surgery students, who may be performing these extractions instead of undergraduates as part of their education program. Parikh *et al.*^[27] (2017) found that with proper training in oral surgery 77% students are confident enough to deal with patients. This finding was confirmed by Macluskey *et al.*^[24] (2012) who showed that training enabled interns and undergraduate dental students to ensure best patient care.

An important training of dental undergraduate students is the management of medical conditions which is considered an important subject in the dental

curriculums^[28] (Chapman, 1997). It has been reported that, over a 10-year period, 90% of dentists have encountered at least one medical emergency^[29] (Haas, 2006).

Previous study showed that medical emergencies were most likely to occur during and after local anesthesia, primarily during tooth extractions^[30] (Matsuura, 1989). Therefore, it is important for dental educators to train undergraduate dental students and interns to manage medical emergencies with proper oral surgery training.

CONCLUSION:

Dental curriculum varies from one institution to another. Oral surgery is part of the dental education and it is considered as a difficult and stressful specialty by students. In this brief review, variations in the confidence level of dental undergraduate students to perform different oral surgery clinical procedures exist. Therefore, dental schools should take the responsibility to prepare their student to undertake simple extractions, minor surgical procedures on graduation. In addition, it is necessary that institutions understand to which extent oral surgery training has to be imparted to students before they graduate.

CONFLICT OF INTEREST

The authors declare no conflict of interest

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