

# Oral and maxillofacial surgery training/practice in Egypt: a questionnaire for surgeons and current trainees

Original  
Article

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## ABSTRACT

The aims of the current study are to shed light on the distribution of trainees and surgeons among different training schemes available in Egypt, elaborate the surgical interests of surgeons and trainees considering the different subspecialties related to oral and maxillofacial surgery and explore opinions regarding the presence of two separate training programs one for oral surgery and the other for oral and maxillofacial surgery. An anonymous online questionnaire was sent out to Egyptian oral and maxillofacial trainees and surgeons to identify their training backgrounds and surgical interests. 137 responses were received for this questionnaire; 70 from trainees and 37 from surgeons. There were no statistical differences between both groups concerning the surgical interest. Both groups affirmed that presence of a unified training program for the speciality as well as having two separate training programs are better. Based on responses to this questionnaire, it could be concluded that academic degree programs are the currently the most common training pathways for speciality training. It could also be concluded that trainees and surgeons share the same surgical interests. Creation of two separate training programs is recommended by both groups as well.

**Key Words:** Surgical training; Oral and maxillofacial surgery; oral surgery; maxillofacial surgery

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## BACKGROUND:

Oral and maxillofacial surgery (OMFS) is a highly diverse specialty all around the globe <sup>[1][2]</sup>. It is considered as a bridge between the worlds of dentistry and medicine. To which side does this specialty belong is variable according to the geographic region <sup>[3]</sup>. In most European countries it is considered a medical specialty, hence a medical degree is mandatory. Countries like Italy, France and Spain maxillofacial surgery is a strictly medical specialty practiced by medical graduates undergoing a maxillofacial surgical residency <sup>[4]</sup>. Countries like Germany, Netherlands, Belgium and the United Kingdom promote the dual qualification scheme where graduates from medicine or dentistry need to achieve their second degree prior to commencing training or along with their specialty training. Denmark, Sweden and Iceland still have this specialty maintained as a branch of dentistry. <sup>[5]</sup>

In the American continents, entry to the specialty training is reserved for dental graduates; with some residency programs offering an additional medical degree as a plus. In Middle Eastern countries and most Asian countries entry to the specialty is completed by dental graduates yet the training programs vary between academic programs offering masters or doctorate degrees, residency programs or professional degree programs <sup>[1]</sup>. Laskin in 2008 <sup>[3]</sup>,

promoted that the future of the specialty is for surgeons of dental origin, a notion I personally agree with. On the other hand, Almuharraqi's view was that the identity of maxillofacial surgeons is the dual qualification <sup>[6]</sup>.

### *Oral and Maxillofacial Surgery in Egypt:*

In Egypt, the specialization in OMFS is attainable through several routes. First is the academic master's degree offered by the universities, these programs are usually of 3 years duration in average and not residency based for postgraduate students. Most of these programs are oral surgery oriented, with minimal exposure to maxillofacial surgery training for the postgraduate trainees. In continuation to training, successful candidates could elect to pursue clinical doctorate degree, where advanced maxillofacial surgery training is offered.

The second route into the specialty is through the Egyptian Fellowship of OMFS. This is a 5-year residency-based training program, training takes place at public hospitals, university hospitals and dental schools. The third pathway is the Arab Board of OMFS that is a hospital-based training program yet training for this program only takes place at 3 dedicated hospitals. The last entry route into the field is through obtaining the Diploma of Membership of Oral and Maxillofacial surgery (MOMS), offered the Royal college of surgeons of Edinburgh or

equivalent programs/diplomas. Yet the quality of the training and its standardization is the current point of debate, the same debate and turmoil is evident in the article by Bell about the surgical training in the USA [7].

To appreciate the current progress and development concerning the speciality in Egypt, understanding of the complex Egyptian healthcare system is due. Healthcare services are provided through three main entities, 1) Public hospitals and medical units, 2) University hospitals and dental schools and 3) The private sector; including both clinics and hospitals.

Public hospitals did not include an OMFS department in their structure till after 2010, the date were the law governing the practice of dentistry in Egypt had been changed to elaborate the scope of practice of OMFS. Currently, the number of public hospitals with an active OMFS department is on the rise.

The position of dental schools in Egypt, currently 60 in number, is quite inconstant. Only a few are integrated within university hospitals with their respective maxillofacial surgery staff members operating in the hospitals' operating rooms and share in the emergency services. Part of the dental schools have their own operating rooms and inpatient facilities as a part of the dental school. The long-term plans of the rest of dental schools regarding maxillofacial surgery services is unclear; with most of them recently founded. Only a handful of dental schools settled for an oral surgery department.

Regarding the private sector, there are only a few hospitals have a dedicated maxillofacial surgery department. None the less, most of the oral and maxillofacial surgeons at private hospitals receive their patients at the hospital's dental services unit and rarely from an emergency room call. Private dental clinics are another way for patients to seek maxillofacial surgery service, yet public awareness about the specialty and scope of practice is quite deficient. [8]

Even though currently OMFS is reclaimed as a specialty of dentistry in Egypt, it still is practiced by a wide array of specialities. Some of the plastic surgery departments in Egyptian universities have the name of "Plastic, Reconstructive and Maxillofacial Surgery". Head and neck departments might perform maxillofacial surgeries and even a few of general surgery departments have a dedicated maxillofacial surgery unit incorporated into it. This inter speciality competition is also a problem that is found in other places of the world. [9]

In this anonymous online survey distributed among current OMFS trainees as well as established surgeons, distribution among the different training programs available along with additional information were gathered to shed light on this specialty in Egypt.

**METHODS:**

An anonymous online survey was distributed among the current surgical trainees/postgraduate students and established surgeons using WhatsApp groups. There are a few known groups for the specialty, that are used for fast circulation of announcements, updates, case discussions or sharing interesting scientific data related to the field. Unfortunately, there is no official figure considering the number of oral and maxillofacial trainees/postgraduate students or surgeons in Egypt. Participation in the questionnaire was voluntary. Survey was conducted in the Arabic language

Statistical analysis of the collected data was completed using Chi square test. The significance level was set at p<0.05 within all tests. Statistical analysis was performed with R statistical analysis software version 4.1.3 for Windows. (R Core Team (2022). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria) The survey consisted of several multiple-choice questions (table 1) with a directing question to separate the results of current trainees/postgraduate students from those of established surgeons.

**Table 1:** Survey questions distributed upon trainees and surgeons

Personal identification	-Age -Are you currently enrolled in a training program? •Yes •No
Current trainees/ postgraduate students	-What is the training program you are currently enrolled in? •Masters •PhD •Egyptian Fellowship Board •Arab Board •MOMS* •Other -What is the training facility of the program? •Dental school •Public hospital -Which of the following subspecialties are of interest at the training facility? (Multiple options could be selected) •Oral surgery •Implantology •Trauma •Cleft lip and palate •Oncology  •Orthognathic surgery •Salivary glands •Reconstructive surgeries •TMJ

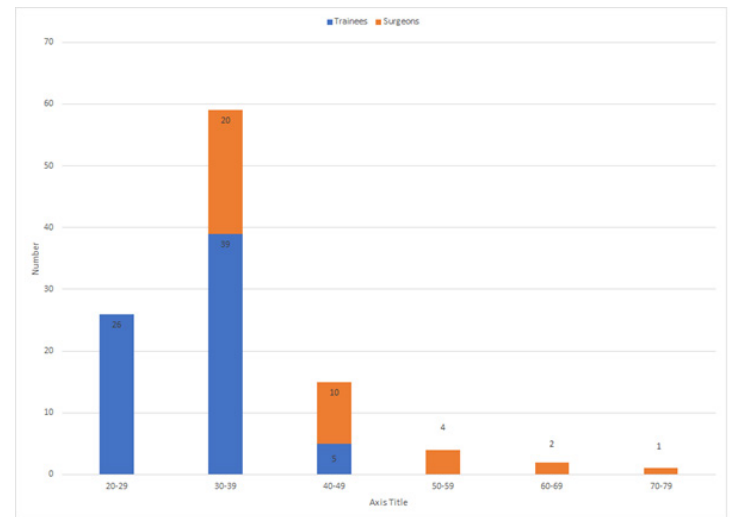
	<ul style="list-style-type: none"> <li>•Head and neck infections</li> <li>-What are your personal interests in surgery? (Multiple options could be selected)</li> <li>•Oral surgery</li> <li>•Implantology</li> <li>•Trauma</li> <li>•Cleft lip and palate</li> <li>•Oncology</li> <li>•Orthognathic surgery</li> <li>•Salivary glands</li> <li>•Reconstructive surgeries</li> <li>•Head and neck infections</li> <li>•TMJ</li> <li>-Would you prefer to have two separate training programs, a short one for oral surgery and an extensive one for OMFS?</li> <li>•Yes</li> <li>•No</li> <li>•Maybe</li> <li>-If the separate oral surgery program existed, will you be interested to join?</li> <li>•Yes</li> <li>•No</li> <li>•Maybe</li> </ul>
<p>Established surgeons</p>	<ul style="list-style-type: none"> <li>-What is the highest specialized degree achieved?</li> <li>•Masters</li> <li>•Doctorate</li> <li>•Egyptian fellowship board</li> <li>•Arab Board</li> <li>•MOMS</li> <li>•Other</li> <li>-Where do you practice maxillofacial surgery?</li> <li>•Public hospital</li> <li>•Dental school</li> <li>•Private sector</li> <li>-What are your main surgical interests? (Multiple options could be selected)</li> <li>•Oral surgery</li> <li>•Implantology</li> <li>•Trauma</li> <li>•Cleft lip and palate</li> <li>•Oncology</li> <li>•Orthognathic surgery</li> <li>•Salivary glands</li> <li>•Reconstructive surgeries</li> <li>•Head and neck infections</li> <li>•TMJ</li> <li>-Would you prefer to have a unified training program for OMFS in Egypt?</li> <li>•Yes</li> <li>•No</li> <li>•Maybe</li> <li>- Would you prefer to have two separate training programs, a short one for oral surgery and an extensive one for OMFS?</li> <li>•Yes</li> <li>•No</li> <li>•Maybe</li> </ul>

\*MOMS: membership in oral and maxillofacial surgery exam offered by the Royal College of Surgeons in Edinburgh

**RESULTS:**

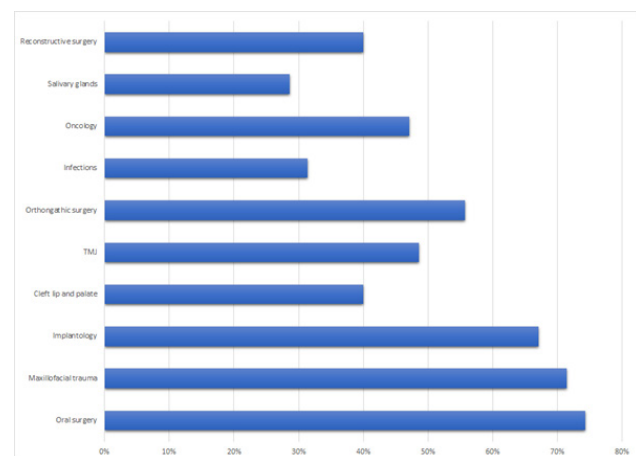
107 responses were submitted to this survey, 70 responses (65.4%) were by current trainees/postgraduate students while the remaining 37 responses (34.6%) were by established surgeons who had completed their training. Age distribution of respondents is presented in figure 1.

**Figure 1** age distribution of respondents

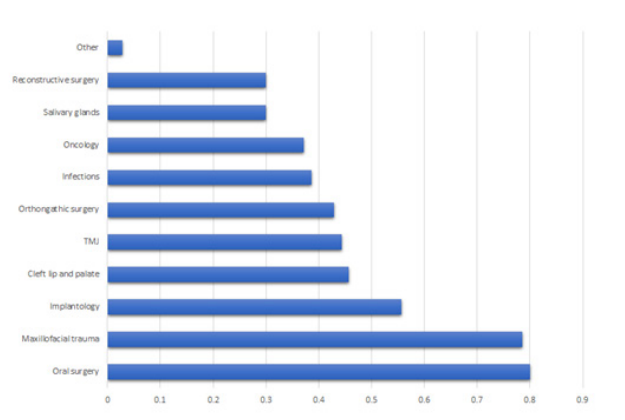


Responses by current trainees/post graduate students: The distribution of respondent trainees among the different training programs was as follows: Masters programs 45%, Egyptian Fellowship 25%, Doctorate 20%, Arab Board 4%, Diploma of Membership of the Royal college of Surgeons (MOMS) 3%, Other programs (undergoing two programs at the same institution at the same time) 3%. The training was conducted at dental schools 66% while the training was conducted at public hospitals 34%. The surgical interest of both trainees and the training institution are shown in figures 2 and 3 respectively.

**Figure 2** surgical interest of trainees



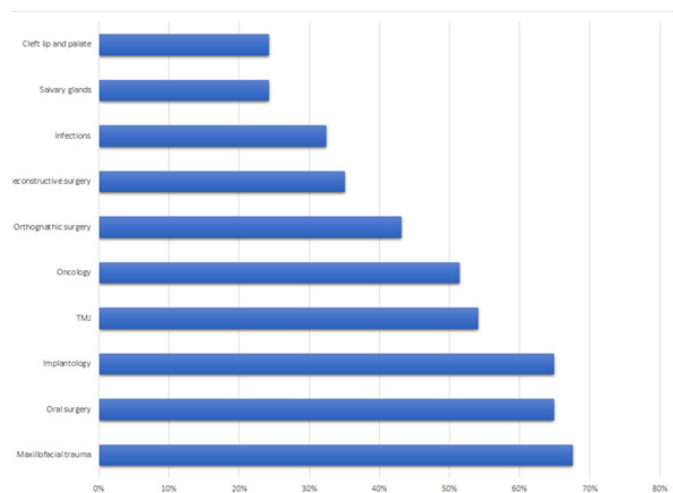
**Figure 3** surgical interest and scope of practice of training institution



As for the question about the personal preference and recommendation for having a two distinct training programs a short one for oral surgery and longer one for OMFS; responses were Yes 64%, No 14%, Maybe 22%. For the question about the possibility of joining an oral surgery program if it existed; responses were Yes 59%, No 20%, Maybe 21%.

**Responses by established surgeons:** Distribution of the highest qualification achieved by surgeons were as follows: Doctorate 43%, Egyptian Fellowship 22%, Masters 16%, Arab Board 8%, MOMS 8%, Other (academic and a non-academic degree) 3%. Surgeons performed maxillofacial surgeries at the following locations: Public hospitals 49%, Dental schools 31%, Private hospitals 20%. The surgical interest and main areas of expertise of the established surgeons is demonstrated in figure 4.

**Figure 4** surgical interest and scope of practice of established surgeons



As for the question about the personal recommendation and preference regarding having a unified Egyptian training program, surgeons responded Yes 81%, No 11%, Maybe 8%. Responses about the personal preference and recommendation about having two separate programs one for oral surgery and a second for OMFS: Yes 78%, No 11%, Maybe 11%.

**Statistical analysis:** Regarding surgical interest, the majority of trainees 52(74.3%) chose “Oral surgery” as their interest of choice, while the majority of surgeons 25(67.6%) chose “Implantology”. In comparison to trainees, a higher percentage of surgeons chose “TMJ”, “Salivary glands” and “Reconstructive surgery” as the preferred interest. The reverse was true regarding other interests. The difference between both groups was not statistically significant ( $\chi^2=2.54$ ,  $p=0.980$ ). Regarding the recommendation of a separate surgical program, the majority of both groups chose “Yes” and the difference was also not statistically significant ( $\chi^2=2.46$ ,  $p=0.293$ ). Intergroup comparisons, frequency and percentage values for the answers to both questions are presented in tables (2 and 3).

**Table 2:** Intergroup comparison of surgical interest

Surgical interest	Trainees (n=70)	Surgeons (n=37)	$\chi^2$	p-value
<b>Oral surgery</b>	n 52	24		
	% 74.3%	64.9%		
<b>Maxillofacial trauma</b>	n 47	24		
	% 67.1%	64.9%		
<b>Implantology</b>	n 50	25		
	% 71.4%	67.6%		
<b>Cleft lip and palate</b>	n 28	9		
	% 40.0%	24.3%		
<b>TMJ</b>	n 33	19	2.54	0.980
	% 47.1%	51.4%		
<b>Orthognathic surgery</b>	n 39	16		
	% 55.7%	43.2%		
<b>Infections</b>	n 20	10		
	% 28.6%	27.0%		
<b>Oncology</b>	n 28	13		
	% 40.0%	35.1%		
<b>Salivary glands</b>	n 22	12		
	% 31.4%	32.4%		
<b>Reconstructive surgery</b>	n 34	20		
	% 48.6%	54.1%		



**Table 3:** Intergroup comparison of separate program recommendation

Separate program recommendation		Trainees (n=70)	Surgeons (n=37)	$\chi^2$	p-value
Yes	n	45	29	2.46	0.293
	%	64.3%	78.4%		
No	n	10	4		
	%	14.3%	10.8%		
May be	n	15	4		
	%	21.4%	10.8%		

## DISCUSSION:

Surveys and questionnaires have become an integral part of the surgical literature over the past few years. There has been a sharp rise in the number of published surveys concerned with OMFS. A few of them discuss and give an overview of the scope of practice, working conditions and surgical interests<sup>[10][11]</sup> educational outcomes,<sup>[12][13]</sup> or even for information delivery to patients.<sup>[14]</sup> In this survey, it is noticed the rise in the number of trainees compared to the current practicing surgeons. Such increase in the number of interested graduates was also noted by Aghalo in 2022 commenting on the number of applicants to OMFS residency in the united states.<sup>[15]</sup> In our study this increase is possibly attributed to several reasons as the annual increase of dental graduates in Egypt as well as the increase in number of available training opportunities. The lack of an official figure indicating the actual numbers of practicing surgeons and trainees/ postgraduate students might affect this interpretation. Taking my current institution as an example, 10 years ago only 5 postgraduate students would be accepted into the program when compared to 20 postgraduate students accepted the past academic year.

Based on the survey results, it can be noted that the master's degree pathway for specialization is favoured by most graduates with surgical interest. This could be influenced by several inherent differences between the academic pathway and other training programs among which are 1) in most cases it is not residency based, so postgraduate students have more flexibility to continue with their private dental practice. 2) The shorter duration needed to acquire the degree. 3) Focusing more on oral surgery; which is more useful in the trainees' private dental practice.

A fact that was augmented by 64% agreement among trainees that they prefer having a separate oral surgery program as well as 59% stating that they would have joined such program.

Responses from the trainees and surgeons showed statistical agreement regarding the personal areas of interest. With oral surgery, maxillofacial trauma and implantology being favoured by the majority while the areas of least interest were salivary glands and head and neck infections. These surgical interests show quite a difference between the current study and other studies from Germany<sup>[11][16]</sup>, where most residents showed most interest in aesthetic surgery and the least favoured was cleft surgery. In the studies published in Germany, interest traumatology was relatively low as it came in third and fourth place. This discrepancy regarding traumatology might be justified by the difference in the incidence of maxillofacial trauma in developing and developed countries.<sup>[17]</sup> As for Egyptian surgeons and trainees favouring oral surgery and implantology is possibly due to the fact that most surgeons and trainees work in private dental practices along with their hospital jobs or training.

What was interesting in this survey is the agreement between both groups regarding the recommended separation between oral surgery training and OMFS training. This might be attributed to several possible factors 1) most dental graduates seek a career in the private practice right after graduation, the private practice is based almost exclusively on dental clinics. 2) the shorter duration of training and easier learning curve for oral surgery when compared to maxillofacial surgery. 3) lack of public awareness still about the speciality and the scope of practice; a notion that have been recorded in several earlier studies<sup>[8][18]</sup> The separation between the two tracks is currently taking place in several countries in the world as the UK and Australia, where they started to revert to the oral surgery alone as a separate speciality starting the year 2010 in the UK and 2017 in Australia.<sup>[19][20]</sup> Such separation if it was to take place, would lead to a reduction in the number of applicants to the OMFS programs offered by the dental schools or hospitals. With this reduction in the number of applicants, I expect an increase in the quality of training for each surgical trainee.

The future:

Only recently in 2022, a law governing the training of clinical healthcare specialties was issued in Egypt. According to the law, a unified national training program and degree will replace the diverse training programs offered by clinical medical or dental specialties in Egypt. Effects of this law and exact details of the training programs are currently under creation, with an expectation that these unified training programs to be in action within the upcoming few years.

## CONCLUSION

It could be noted based on the responses to this current questionnaire, that OMFS is a growing dental speciality in Egypt. Surgeons and trainees/postgraduate students share the same surgical interests. A possible separation between two training pathways deserves to be taken into consideration.

**DECLARATIONS:**

Ethics approval:

All methods were carried out in accordance with relevant guidelines. This questionnaire acquired the approval of the Research Ethics Committee of the Faculty of Dentistry at Ainshams University numbered FDASU-REC IR052201. The Research Ethics Committee of the Faculty of Dentistry at Ainshams University waived the need for informed consent in this study.

**Consent for publication:**

Not applicable

**Competing interests:**

The author declares that he has no competing interests.

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