

Original article

**Perception by Laypersons and Healthcare Professionals
Towards Oral and Maxillofacial Surgery**

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Abstract

Background: Oral and maxillofacial surgery (OMFS) is a surgical branch of dentistry that deals with the wide spectrum of diseases, injuries and defects in the maxillofacial region. There are plenty of people who have lack of awareness towards the wide surgical scope provided by OMFS as reported by previous study done in Boston in 1996. The purpose of this study was to assess the level of awareness among the general public and healthcare professionals towards Oral and Maxillofacial Surgery specialty in Hospital Universiti Sains Malaysia (HUSM). **Materials and Methods:** A total of 186 standardized questionnaire was distributed to 6 groups of respondents which include laypersons attending HUSM, 4th year dental and medical students, dental officers, medical officers and paramedical workers from various departments such as Emergency department, Ear, Nose and Throat (ENT) department, medical family clinic and dental clinic of HUSM. **Results:** The data showed that 100% of students and practitioners had heard of OMFS, whereas only 68.9% of the laypersons have heard of the specialty. Furthermore, only 11.6% of the lay responders had been treated by an OMFS. The full results also suggested that about 50% of laypersons, 35% of medical professionals and 30% of dental professionals had lack of understanding about the range of care provided by OMFS specialty. **Conclusion:** A thorough education need to be implemented among dental and medical undergraduate students as well as professionals so that they can make a proper referral later on and automatically provide correct information to the laypersons.

Introduction

Oral and Maxillofacial surgeons have unique expertise in the management of maxillofacial trauma due to their background in both dentistry and medicine leading to advanced specialist training in Oral and Maxillofacial Surgery (OMFS). According to the International Association of Oral and Maxillofacial Surgeons, OMFS is the surgical specialty that includes the diagnosis, surgical and related treatments of a wide spectrum of diseases, injuries, defects and aesthetic aspects of the mouth, teeth, jaws, face, head and neck¹.

The scope and practice of Oral and Maxillofacial Surgery has dramatically increased over the past several decades. However, the recognition of our specialty and all that we can offer patients is still

a mystery to a large number of the general public at large². This lack of understanding is even more important when it comes to health professionals. Patient regularly present to their dentists or emergency departments with abnormalities that require the expertise of specialists in OMFS. Our medical and dental colleagues need to have the necessary knowledge to make informed decisions about their patients management³. Apparently, study done in 1996 revealed that many healthcare professionals still had lack of awareness about the wide scope of surgical procedures that OMFS has to offer⁴.

It is vital that both the medical and dental communities, as well as the public, become better educated about the scope of OMFS. This understanding

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is critical for patients to receive the best treatment available by appropriately trained surgeons⁵. An informed healthcare professional will be able to refer patients to the correct specialist. Similarly, educated patient who armed with the correct information will be able to request for appropriate referrals⁶.

Study done in 1996 suggest that greater progress must be made in the education of medical and dental students as well as the laypersons if the specialty of Oral and Maxillofacial Surgery (OMFS) is to be practiced in its full scope⁴. There had been some improvements in the awareness towards OMFS among laypersons and healthcare professionals in United Kingdom from 1994-2005.

In 2006, a study was done in south India demonstrated that medical professionals are still not understand the expertise and scope of the specialty. The specialty is still searching for its identity rather among the healthcare providers than among the laypersons. It had been appointed that lack of publicity by the professional bodies and also by the individual professionals should be the reason⁷. This is one of the scenarios happening in developing country after more than 60 years OMFS has been formed.

Therefore, the aim of this study is to assess the level of awareness towards Oral and Maxillofacial Surgery (OMFS) among laypersons and healthcare professionals in HUSM.

Materials and Methods

This cross sectional study was carried out on a total of 86 randomly selected laypersons attending Hospital Universiti Sains Malaysia (HUSM) and 100 of healthcare professionals incorporating of 4th year dental and medical students of USM, dental officers of HUSM dental clinic, medical officers and paramedical workers of HUSM from various department (accident & emergency, medical and ENT department) which was proportionately subdivided for each group (proportionate stratified random sampling).

Inclusion criteria were an adult age >18 for both laypersons and healthcare professionals. Healthcare workers among the laypersons have been excluded. Questionnaires prepared were

obtain from previous studies of Ameerally⁵, Subashraj⁷.

The laypersons were randomly selected and approached at the accident & emergency department, dental clinic and medical family clinic HUSM, and were explained about the study. Once the respondents has agreed to participate in the research, questionnaire was given and respondents were asked to self administered the questionnaire. The questionnaire was collect immediately after the respondents completed it. The data was then analysed using SPSS version 18.0 statistical software by descriptive statistics. Results were expressed as frequency table for each respondents group.

Ethical approval was obtained from the Human Ethics Committee of Universiti Sains Malaysia (USM).

Results

Tables 1 through 8 show the data collected from all the categories (laypersons, dental students, medical students, dental officers, medical officers and paramedical workers)

Not surprisingly, all of the healthcare professionals have heard of Oral and Maxillofacial Surgery (OMFS) specialty. However, only 68.6% of the laypersons had heard of this specialty (Table I & Figure 1). With respect to the other specialties, 87.2% has heard of ENT specialty and 86% has heard of Plastic Surgery specialty (Table I, Figure 2 & Figure 3)

Furthermore only 12% of the laypersons responders had previously been treated by an OMFS (Table II). Chi square test was performed to analyze the association between having been treated and awareness towards OMFS among the laypersons. Because certain data sets had cells that were less than an expected value of 5 (Table III), the chi square test might not have been a valid test to perform. Alternatively, the Fisher exact test was used to calculate the deviation from the null hypothesis exactly, rather than the used of approximations routinely used with chi square test. Result shows $p = 0.085$, is not significant (Table IV). Hence, among the laypersons, there was no correlation between having been treated by OMFS and being aware of the specialty.

Table I: Have you ever heard of the following specialist?

Have you ever heard of the following specialist	OMFS (%)	ENT (%)	Plastic (%)
Laypersons (N=86)	68.6	87.2	86.0
Dental student (N=20)	100	100	100
Medical student (N=20)	100	100	100
Dental officers (N=20)	100	100	100
Medical officers (N=20)	100	100	100
Paramedical workers (N=20)	100	100	100

*Abbreviations: OMFS, Oral and Maxillofacial Surgeon; ENT, Ear, Nose and Throat

Table V, VI, VII, VIII, IX and X shows the results for the 6 groups of respondents towards 21 clinical situations given. 55-85% of the respondents preferred plastic surgeon to treat a cut on the face

(Table V, VI, VII, VIII, & X). For the cut on the tongue, majority of the respondents, 50-90% of the respondents choose OMFS to treat the condition. When treating of fractured jaw and fractured tooth,

Table II: Have you ever been treated by the following specialist?

Have you ever been treated by the following specialist	OMFS (%)	ENT (%)	Plastic (%)
Laypersons (N=86)	11.6	8	3
Dental student (N=20)	20	10	0
Medical student (N=20)	20	35	5
Dental officers (N=20)	35	35	5
Medical officers (N=20)	10	30	5
Paramedical workers (N=20)	15	20	5

*Abbreviations: OMFS, Oral and Maxillofacial Surgeon; ENT, Ear, Nose and Throat

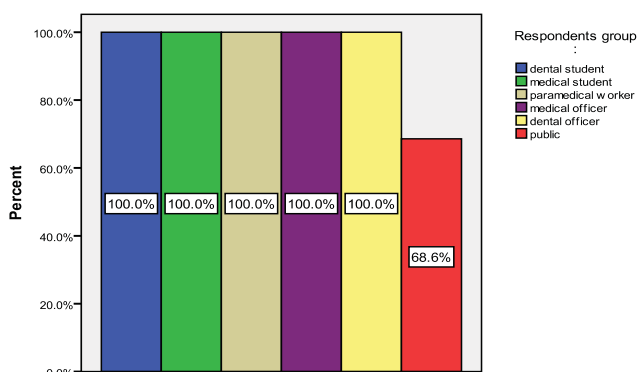


Figure 1: Have you ever heard of the existence of the OMFS specialty

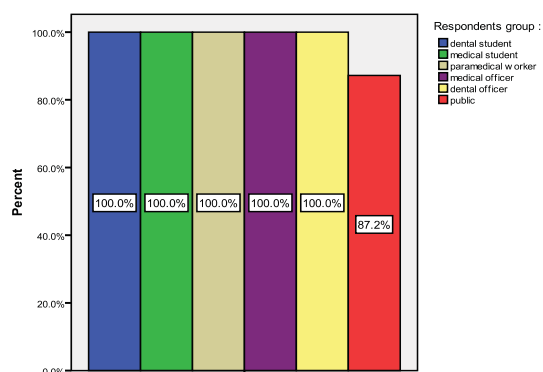


Figure 2: Have you ever heard of the existence of ENT specialties

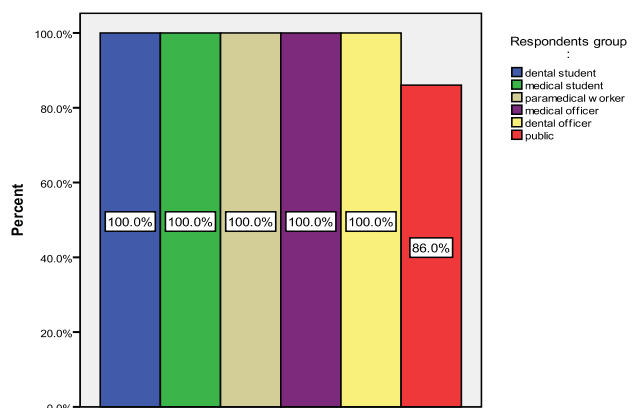


Figure 3: Have you ever heard of the existence of PLASTIC surgery specialties

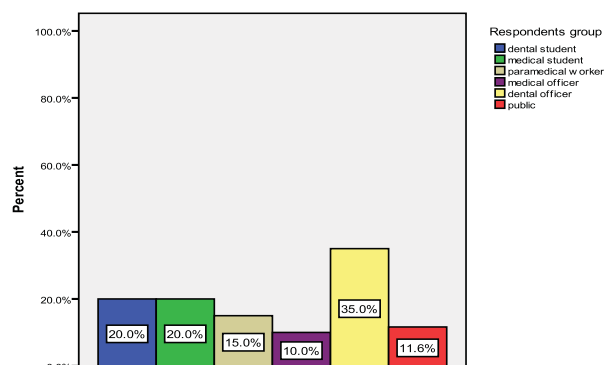


Figure 4: Have you ever been treated by OMFS specialties

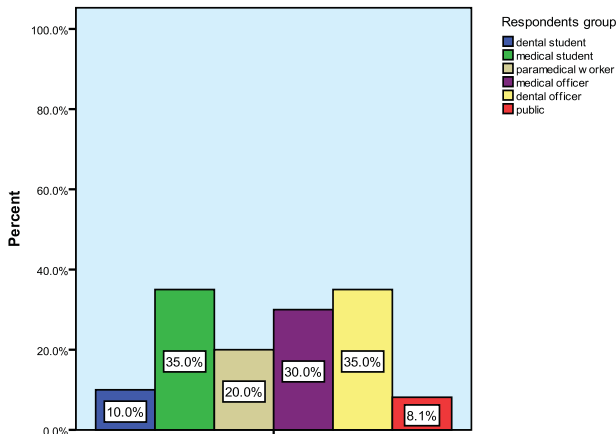


Figure 5: Have you ever been treated by ENT specialties

70-100% of the respondents, wanted OMFS consultation.

For black eye condition, 60% of the dental students (Table VI), 80% of dental officers (Table VIII) and 50% of paramedical workers (Table X) think that OMFS could treat the condition, while medical officers would rather referred the case to other than listed specialties such as ophthalmologist, casualty or surgery (Table IX). Same goes to laypersons, 34% of them felt that none of the listed specialties could treat the condition, while 24% of laypersons would consult with OMFS (Table V). 95-100% of the respondents choose ENT to attend for bleeding from ears and nose (Table V, VI, VII, VIII, IX & X).

With regard to cancer of cheeks and tongue, 55-95% of the respondents (73%) would consult OMFS for the treatment. However, 50% of the MO respondents would consult ENT specialist for the treatment of cancer of tongue, while the other 50% chose OMFS (Table VIII). For the treatment of cancer of sinus, 42-95% of the respondents preferred ENT and only dental students (85%) preferred OMFS to treat the condition (Table VI).

Majority of respondents (70-100%) would consult OMFS for the treatment of TMJ disorder (Table V, VI, VII, VIII, IX & X). For the salivary gland disease, 50-80% of respondents preferred OMFS to manage the condition. However, 60% of MO preferred ENT consultation (Table IV). 40% of laypersons chose plastic surgeon to treat swelling on the face (Table V) while other respondents mostly chose OMFS. 75-100% of respondents would consult ENT specialist for swelling in the neck. Most of the respondents, 75-80% chose an

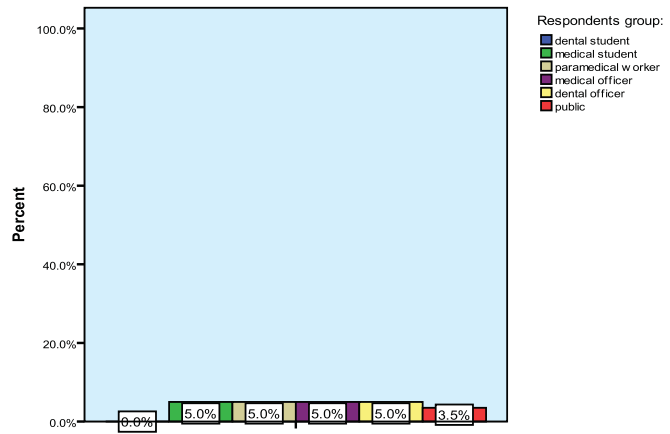


Figure 6: Have you ever been treated by PLASTIC surgery specialties

ENT surgeon for operating sinus surgery, however, 80% of dental students choose OMFS specialty. 86-100% of respondents choose ENT specialist to treat patient with difficulty in breathing through the nose. Regarding management of cleft lip and palate, 58% of medical professionals would referred the case to plastic surgeon (Table VIII) while most of dental professionals, paramedical workers and laypersons chose OMFS (70%) to treat the condition.

With regard to cosmetic surgery of nose, as well as facial deformity and asymmetrical, most of the respondents would consult plastic surgeon respectively (70-75%). 86% of respondents preferred OMFS to treat difficulty in mouth opening. Similarly with third molar problems and dental implant, majority of respondents chose OMFS (Table V, VI, VII, VIII, IX & X).

Discussion

The scope of Oral and Maxillofacial Surgery (OMFS) specialty still produces some confusion especially among the laypersons. The majority of healthcare professionals and laypersons recognize OMFS, but some students and professionals are not aware of the wide surgical field of the specialty⁴. This study demonstrated that only 68.6% of the laypersons had heard of the specialty of OMFS, and not surprisingly, all of the healthcare professionals had heard of this specialty. Ifeacho⁶ compared their results with those of Ameerally⁵ and noticed that recognition of OMFS among the laypersons and healthcare professionals had increased (21-34%) but that specialty had improved only marginally⁶. The treatment of cleft lip and palate deformities demonstrated a difference between dental students and professionals,

Table III: Is there any correlation between either the respondents have heard of the specialties and having been treated by OMFS specialties

		have you ever heard of the existence of the OMFS specialties		Total
		yes	No	
have you ever beenyes treated by OMFS specialties	Count	29	1	30
	% within have you ever been treated by OMFS specialties	96.7%	3.3%	100.0%
no	Count	130	26	156
	% within have you ever been treated by OMFS specialties	83.3%	16.7%	100.0%
Total	Count	159	27	186
	% within have you ever been treated by OMFS specialties	85.5%	14.5%	100.0%

* 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.35. The above table output shows that 1 cell have expected count of less than 5. Assumption for chi square test is not met. So, take the Fisher's Exact Test result that is Exact sig. (2-sided). The $p=0.085$

who preferred OMFS for the management of cleft lip and palate while medical students and professionals, favoured the plastic surgeon in the same situation. Similar results were found in previous study done in Brazil³.

to be similar with a study done in Boston 15 years ago. The study attributed that this is due to a lack of publicity in media, along with the fact that OMFS is grounded in dentistry rather than in medicine. There is also a tremendous overlap between

Table IV: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.605 ^a	1	.058	.085	.042
Continuity Correction ^b	2.610	1	.106		
Likelihood Ratio	4.747	1	.029		
Fisher's Exact Test					
Linear-by-Linear Association	3.585	1	.058		
N of Valid Cases	186				

$p > 0.05$, do not reject null hypothesis, not significant.

There is **no significant association** between having been treated by OMFS and had heard of the OMFS specialty.

Our finding proves that there was a clear division in awareness between the conditions relating to the mouth in the head and neck region, despite the latter being well within the scope of OMFS as demonstrated by a study done in Birmingham, United Kingdom⁶. However, both of healthcare professionals and laypersons are still confused about the surgical scopes that OMFS can offer. This is consistent with previously published data that indicated extremely poor recognition of the specialty by the laypersons². The result was found

the specialties of Ear, Nose and Throat (ENT), Plastic surgery and OMFS with no definite procedure specific to each specialty⁴.

The pioneer of similar study in 1994 stated that if patient are to receive the optimal treatment for oral and facial problems, dental and medical practitioners need to have a better understanding of what our specialty has to offer. In conjunction to that, health coordinators have to be informed of the importance of this specialty in the management of complex and diverse problems within a well defined anatomical area⁵.

Table V: Laypersons responses to the question, which surgeon do you expect to treat the following? (N=86)

	OMFS (%)	ENT (%)	Plastic (%)	Others (%)
<i>a cut on the face</i>	29	2	67	2
<i>a cut on the tongue</i>	79	19	0	2
<i>fractured jaw</i>	74	16	5	5
<i>fractured tooth</i>	90	6	0	5
<i>black eye</i>	24	2	19	34
<i>bleeding from nose and ears</i>	56	91	2	1
<i>cancer of the cheeks</i>	57	7	27	9
<i>cancer of sinus</i>	34	42	10	14
<i>cancer of tongue</i>	76	17	2	5
<i>TMJ disorder</i>	70	14	6	10
<i>Salivary gland disease</i>	65	34	0	1
<i>Swelling on the face</i>	31	14	40	15
<i>Swelling in the neck</i>	16	70	5	9
<i>Sinus surgery</i>	35	44	7	14
<i>Cleft lip and palate</i>	69	14	10	7
<i>Difficulty in mouth opening</i>	81	13	2	4
<i>Difficulty in nose breathing</i>	5	86	2	7
<i>Cosmetic surgery of nose</i>	4	41	55	1
<i>Facial deformity and asymmetry</i>	19	2	72	7
<i>Third molar problems</i>	78	6	2	14
<i>Dental implant</i>	80	4	1	15

*abbreviations: OMFS, oral and maxillofacial surgeon; ENT, ear, nose and throat; TMJ, temporomandibular joint

In addition, the length of the name is fairly difficult to pronounce and presents a problem to lay person especially in Kelantan who normally use local dialect instead of universal Malay language or English language. Ameerally et al. demonstrated that OMFS has a long and complicated Latin name and suggested changing to a much simpler name such as 'Oral and Facial Surgery'⁵. As recently in 1993, the governing bodies of the American Association of OMFS formed a task force to discuss a possible name change for the specialty. Any change from the current name was rejected at that time. One of the concerns over changing the name was that another specialty of dentistry or medicine might adopt the abandoned⁸. Furthermore, in 2010, a study demonstrated that a change in the nomenclature of OMFS will not be of benefit in improving any existing confusion regarding the specialty's surgical scope, in fact they suggested an efforts in increasing the exposure of OMFS to dental and medical undergraduates and foundation year doctors as a means of indirectly enhancing its profile⁹.

Laskin et al evaluated knowledge of 12 different specialties to determine whether such unfamiliarity is true only for OMFS or whether it occurs with other specialties. The result of this study showed that name recognition was not a problem only for OMFS¹⁰. Although this does not mean that no effort should be made to inform the public about what OMF surgeons do, it does indicate that no name alone can ever be completely descriptive^{11, 12, 13}.

This study was performed only in Kubang Kerian, Kelantan and therefore the results may not be applicable elsewhere. Regional variations exist, and surgeons are responsible for educating their own community and referral circles about the scope of their practice, which will depend on training, experience and areas of interest. It appears that greater progress must be made in the education of medical and dental students as well as laypersons, if the specialty of OMFS is to be practiced in its full scope^{3, 4, 14-15}. Awareness among dental and medical professionals could be improved by

Table VI: Dental students responses to the question, which surgeon do you expect to treat the following? (N=20)

	OMFS (%)	ENT (%)	Plastic (%)	Others (%)
<i>a cut on the face</i>	35	0	65	0
<i>a cut on the tongue</i>	90	10	0	0
<i>fractured jaw</i>	95	5	0	0
<i>fractured tooth</i>	95	5	0	5
<i>black eye</i>	60	10	5	25
<i>bleeding from nose and ears</i>	0	95	0	5
<i>cancer of the cheeks</i>	95	0	5	0
<i>cancer of sinus</i>	85	10	0	5
<i>cancer of tongue</i>	100	0	0	0
<i>TMJ disorder</i>	90	0	0	10
<i>Salivary gland disease</i>	80	5	0	15
<i>Swelling on the face</i>	90	0	0	10
<i>Swelling in the neck</i>	50	45	0	5
<i>Sinus surgery</i>	80	15	0	5
<i>Cleft lip and palate</i>	85	0	15	0
<i>Difficulty in mouth opening</i>	95	0	0	5
<i>Difficulty in nose breathing</i>	0	95	0	5
<i>Cosmetic surgery of nose</i>	0	5	95	0
<i>Facial deformity and asymmetry</i>	15	0	85	0
<i>Third molar problems</i>	100	0	0	0
<i>Dental implant</i>	100	0	0	0

*abbreviations: OMFS, oral and maxillofacial surgeon; ENT, ear,nose and throat; TMJ, temporomandibular joint

Table VII: Medical students responses to the question, which surgeon do you expect to treat the following? (N=20)

	OMFS (%)	ENT (%)	Plastic (%)	Others (%)
<i>a cut on the face</i>	25	0	70	5
<i>a cut on the tongue</i>	50	45	0	5
<i>fractured jaw</i>	100	0	0	0
<i>fractured tooth</i>	95	0	0	5
<i>black eye</i>	25	20	15	40
<i>bleeding from nose and ears</i>	0	100	0	0
<i>cancer of the cheeks</i>	60	15	25	0
<i>cancer of sinus</i>	0	95	5	0
<i>cancer of tongue</i>	55	40	0	5
<i>TMJ disorder</i>	95	5	0	0
<i>Salivary gland disease</i>	50	45	0	5
<i>Swelling on the face</i>	40	0	40	20
<i>Swelling in the neck</i>	5	85	5	5
<i>Sinus surgery</i>	15	85	0	0
<i>Cleft lip and palate</i>	35	10	5	0
<i>Difficulty in mouth opening</i>	85	10	5	0
<i>Difficulty in nose breathing</i>	0	100	0	0
<i>Cosmetic surgery of nose</i>	0	10	90	0
<i>Facial deformity and asymmetry</i>	15	5	80	0
<i>Third molar problems</i>	95	0	0	5
<i>Dental implant</i>	90	5	0	5

*abbreviations: OMFS, oral and maxillofacial surgeon; ENT, ear,nose and throat; TMJ, temporomandibular joint

Table VIII: Dental officers responses to the question, which surgeon do you expect to treat the following? (N=20)

	OMFS (%)	ENT (%)	Plastic (%)	Others (%)
<i>a cut on the face</i>	40	0	55	5
<i>a cut on the tongue</i>	95	5	0	0
<i>fractured jaw</i>	100	0	0	0
<i>fractured tooth</i>	90	0	0	10
<i>black eye</i>	80	0	5	15
<i>bleeding from nose and ears</i>	5	95	0	0
<i>cancer of the cheeks</i>	75	20	5	0
<i>cancer of sinus</i>	25	75	0	0
<i>cancer of tongue</i>	75	25	0	0
<i>TMJ disorder</i>	100	0	0	0
<i>Salivary gland disease</i>	65	25	0	10
<i>Swelling on the face</i>	80	15	5	0
<i>Swelling in the neck</i>	20	80	0	0
<i>Sinus surgery</i>	20	75	5	0
<i>Cleft lip and palate</i>	55	15	30	0
<i>Difficulty in mouth opening</i>	95	5	0	0
<i>Difficulty in nose breathing</i>	10	90	0	0
<i>Cosmetic surgery of nose</i>	0	5	95	0
<i>Facial deformity and asymmetry</i>	45	5	55	0
<i>Third molar problems</i>	100	0	0	0
<i>Dental implant</i>	100	0	0	0

*abbreviations: OMFS, oral and maxillofacial surgeon; ENT, ear,nose and throat; TMJ, temporomandibular joint

Table IX: Medical officers responses to the question, which surgeon do you expect to treat the following? (N=20)

	OMFS (%)	ENT (%)	Plastic (%)	Others (%)
<i>a cut on the face</i>	15	0	85	0
<i>a cut on the tongue</i>	80	20	0	0
<i>fractured jaw</i>	95	0	0	5
<i>fractured tooth</i>	80	0	0	20
<i>black eye</i>	35	15	10	40
<i>bleeding from nose and ears</i>	0	100	0	0
<i>cancer of the cheeks</i>	55	25	20	0
<i>cancer of sinus</i>	20	80	0	0
<i>cancer of tongue</i>	50	50	0	0
<i>TMJ disorder</i>	95	5	0	0
<i>Salivary gland disease</i>	40	60	0	0
<i>Swelling on the face</i>	45	35	20	0
<i>Swelling in the neck</i>	0	100	0	0
<i>Sinus surgery</i>	20	80	0	0
<i>Cleft lip and palate</i>	25	15	60	0
<i>Difficulty in mouth opening</i>	85	15	0	0
<i>Difficulty in nose breathing</i>	0	100	0	0
<i>Cosmetic surgery of nose</i>	0	25	75	0
<i>Facial deformity and asymmetry</i>	30	5	65	0
<i>Third molar problems</i>	85	0	0	15
<i>Dental implant</i>	80	0	0	20

*abbreviations: OMFS, oral and maxillofacial surgeon; ENT, ear,nose and throat; TMJ, temporomandibular joint

Table X: Paramedical workers responses to the question, which surgeon do you expect to treat the following? (N=20)

	OMFS (%)	ENT (%)	Plastic (%)	Others (%)
<i>a cut on the face</i>	35	0	65	0
<i>a cut on the tongue</i>	70	20	10	0
<i>fractured jaw</i>	95	5	0	0
<i>fractured tooth</i>	100	0	0	0
<i>black eye</i>	50	25	0	25
<i>bleeding from nose and ears</i>	0	100	0	0
<i>cancer of the cheeks</i>	75	15	10	0
<i>cancer of sinus</i>	25	75	0	0
<i>cancer of tongue</i>	75	25	0	0
<i>TMJ disorder</i>	95	5	0	0
<i>Salivary gland disease</i>	55	45	0	0
<i>Swelling on the face</i>	75	5	15	5
<i>Swelling in the neck</i>	10	90	0	0
<i>Sinus surgery</i>	30	70	0	0
<i>Cleft lip and palate</i>	75	5	20	0
<i>Difficulty in mouth opening</i>	90	10	0	0
<i>Difficulty in nose breathing</i>	0	100	0	0
<i>Cosmetic surgery of nose</i>	0	10	90	0
<i>Facial deformity and asymmetry</i>	20	0	80	0
<i>Third molar problems</i>	20	0	0	0
<i>Dental implant</i>	95	0	0	5

*abbreviations: OMFS, oral and maxillofacial surgeon; ENT, ear, nose and throat; TMJ, temporomandibular joint

arranging more interdisciplinary sessions and inter-departmental discussions⁷.

Conclusion

In conclusion, laypersons and healthcare professionals are aware of Oral and Maxillofacial

Surgery (OMFS) specialty but they have lack of understanding of the full scope of OMFS. Thus, a thorough education and sound understanding of OMFS scope needed among dental and medical professionals as well as students and laypersons for better awareness among them in the future.

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