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Original Article

Exploring Oral and Maxillofacial Specialty Awareness Gaps amongst Medical Postgraduate Trainees at Karachi

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ABSTRACT

Objective: To explore gaps in awareness level about oral and maxillofacial surgery among medical postgraduate trainees across Karachi, Pakistan.

Study Design: Cross sectional study

Place and Duration of Study: Shaheed Mohtarma Benazir Bhutto Institute of Trauma, Sindh Institute of Urology and Transplantation, Dr Ruth KM Pfau and Civil Hospital Karachi-Dow University of Health Sciences, Pakistan from Sep 2023 to Aug 2024.

Methodology: A total of 277 postgraduate trainees from various medical and surgical specialties were interviewed using a structured questionnaire to assess their knowledge, attitudes and practices regarding OMFS.

Results: Out of total 277 postgraduate trainees, 246 (88%) of the participants were aware of the name of the specialty, while 180(65%) were familiar with the scope of the field, 212(76.5%) knew that OMFS is branch of Dentistry and 226(81.6%) acknowledge that maxillofacial surgeons perform procedures other than minor oral surgeries under local anesthesia. Only 136(49.1%) of the study population think that OMF surgeons can perform procedures other than dentoalveolar surgeries. Two hundred twenty-eight (82.3%) of the participants would like to add OMFS in a multi-disciplinary team approach and 233(84.1%) think that OMFS should be a medical specialty. Of 39 practice-related questions, 7(17.9%) showed no significant differences ($p > 0.05$), while 32(82.05%) showed significant variations ($p < 0.05$), highlighting the influence of level of training and gaps.

Conclusion: The postgraduate students demonstrate strong awareness of many OMFS roles, but gaps remain in their understanding about specific clinical conditions and procedures.

Keywords: Medical Profession, Oral and Maxillofacial Surgery (OMFS), Postgraduate Students (PG), Pakistan

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INTRODUCTION

The Oral and Maxillofacial Surgery (OMFS) is a sub-specialty of Dentistry, dealing with the diagnosis, surgical and non-surgical treatment, rehabilitation-reconstruction of oral diseases, including infections, trauma and defects affecting the mouth, jaws, face, and neck.[1] This surgical field integrates core aspects of medicine, dentistry and surgery.[2] In Pakistan, OMFS emerged as Minor Oral Surgical specialty in 1990, then it continued to grow and started residency training programs in 1994, since then a lot of development has occurred in the field.[3,4] However, despite of delivering surgical management to an important anatomical area of the body with its full scope across the globe for years, it has been observed that this field has not gained much recognition among people and communities at large.[5] A study in United Kingdom (UK) found poor exposure and knowledge related to OMFS in undergraduate medical students.[6] In Canada, similar research among healthcare professionals represented unfamiliarity with the expertise that the field offers.[7] Study in Saudi Arabia demonstrated lack of knowledge among medical professionals related to Orthognathic surgical procedures.[8] In Pakistan many Medical and Surgical health care professionals are still not fully aware of range of OMFS specialty domain in terms of its scope of clinical work.[9,10]

Based on the above evidence, gaps about OMFS specialty among medical professionals in society needs to be explored. The specific audience, i.e., medical postgraduate trainees, are targeted as they are perceived to be harbingers, and that their awareness about the specialty was not assessed by previous studies in Pakistan. The rationale of exploring these

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factors is to uncover potential areas for improvement in training programs and promote OMFS interdisciplinary collaborations. This will eventually contribute to delivering improved referral culture, enhanced patient management outcomes with OMFS specialty, emerging as an essential surgical profession and to document above stated gaps via this study from Karachi, as very limited data has been published in Pakistan in recent years on this academic area, particularly from Karachi.

METHODOLOGY

Descriptive, cross-sectional study was conducted from September 2023 to August 2024 in different medical and surgical specialty departments at Shaheed Mohtarma Benazir Bhutto Institute of Trauma (SMBBIT), Dr Ruth. K.M. Pfau Civil Hospital Karachi (CHK) - Dow University of Health Sciences (DUHS), and Sindh Institute of Urology and Transplantation (SIUT) Karachi after obtaining institutional ethical approval (ERC-00054/SMBBIT/Approval/2022). The sample size was calculated using a cross-sectional study sample size calculator from OpenEpi.com. The confidence level was set at 95%, and the margin of error was taken as 5%, whereas the anticipated percentage frequency was taken as 23.5% 11 ± 5%, based on the minimum frequency of knowledge among medical postgraduate personnel. The calculator computed the sample size as 277. A non-probability, purposive sampling technique was used.

Inclusion Criteria: Both genders, adults, who are medical postgraduate students enrolled in Fellowship of the College of Physicians and Surgeons Pakistan [4-5 year program (FCPS)], Master's in Surgery [4-year program (MS)], Master's in Science [2-year program (MSc)] and Membership of the College of Physicians and Surgeons Pakistan [2-year program (MCPS)] at SMBBIT, CHK-DUHS and SIUT.

Exclusion Criteria: Dental postgraduate trainees, house officers, undergraduate students of medical and dental professions, resident medical officers (RMOs), senior registrars, and consultants of various related specialties.

Study Participants were approached in person, and consent was obtained from all after explaining the objective and purpose of the study. Confidentiality was ensured by anonymizing every participant's response. The questionnaire included selected participants' characteristics and a set of closed-end questions regarding knowledge and attitude about Oral and Maxillofacial Surgical (OMFS) Specialty, and referral practices amongst medical profession postgraduate trainees, which were adapted from a similar study by Emad Lababidi.[12] with some modifications to suit our study's objectives. Questionnaires were distributed among the study participants, and responses were collected upon completion of the survey proforma.

Data was analyzed using statistical package for the social sciences (SPSS) version 24.0. Descriptive statistics calculated and presented in the form of frequency and percentage for qualitative data while mean with standard deviation was computed for quantitative variables. Percentages were calculated for FCPS, MS, MCPS, and MSc participants, along with a broad categorization of their field of specialization into medicine or surgery. Additionally, PMDC Level III participants were sub-categorized into junior (FCPS R1 and R2; MS 1st and 2nd year) and senior levels (FCPS R3, R4 and R5; MS 3rd and 4th year), whereas PMDC Level II-B programs were not categorized further.

Questionnaire validity and reliability were assessed by Content Validity Index and Cronbach's alpha test respectively. The questionnaire items have an acceptable I-CVI score (≥ 0.78) and S-CVI score of 0.95. The Cronbach's alpha test of the questionnaire for questions related to knowledge was 0.72, for attitude was 0.75, and for practice was 0.70. The comparison of awareness levels among junior and senior level students were determined through Chi-square/fisher's exact test, where appropriate. Level of significance was set at $p \leq 0.05$.

RESULTS

A total of 277 postgraduate students from various medical and surgical specialties were interviewed. The mean age of participants was 27.5±2.1 years, with mean training duration of 3.9±2.3 years. Male participants were 150(54.2%), slightly more than females i.e., 127(45.8%). 180(65.0%) participants were enrolled in the FCPS program, followed by MS which were 55(19.9%), MCPS were 28(10.1%), and MSc. were 14(5.1%). One hundred forty-three (51.62%) of the respondents were from the Medicine domain, with a sizable proportion from the Surgery domain i.e., 134(48.37%).

Two hundred forty-six (88%) participants across programs and training levels were familiar with the name of the specialty, while 180(65%) were aware of its scope. Familiarity with the name and scope of OMFS varied, with juniors generally less informed than seniors which was statistically significant

Table-I: Knowledge regarding Oral and Maxillofacial Surgical Specialty among Medical Postgraduate Students (n = 277)

S. No.	Questions related to knowledge	Postgraduate Program												*p* value
		FCPS (n = 180)				MS (n = 55)				MCPS (n = 28)		MSc. (n = 14)		<0.001
		Junior (n = 58)		Senior (n = 122)		Junior (n = 23)		Senior (n = 32)						
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
1	Are you familiar with the name of the specialty?	56 (96.6%)	2 (3.4%)	121 (99.2%)	1 (0.8%)	13 (56.5%)	10 (43.5%)	30 (93.8%)	2 (6.3%)	21 (75.0%)	7 (25.0%)	5 (35.7%)	9 (64.3%)	
2	Are you familiar with scope, the specialty offers?	45 (77.6%)	13 (22.4%)	104 (85.2%)	18 (14.8%)	4 (17.4%)	19 (82.6%)	18 (56.3%)	14 (43.8%)	9 (32.1%)	19 (67.9%)	0 (0.0%)	14 (100.0%)	<0.001
3	Oral and Maxillofacial Surgery branches from?													
A	Dentistry	49 (84.5%)		118 (96.7%)		8 (34.8%)		21 (65.6%)		16 (57.1%)		0 (0.0%)		<0.001
B	Sub-specialty of general surgery	0 (0.0%)		0 (0.0%)		9 (39.1%)		5 (15.6%)		3 (10.7%)		11 (78.6%)		<0.001
C	Sub-specialty of head and neck surgery	9 (15.5%)		4 (3.3%)		6 (26.1%)		6 (18.8%)		9 (32.1%)		3 (21.4%)		<0.001
4	Do you know OMF Surgeons perform procedures other than minor oral surgeries under local anesthesia?	52 (89.7%)	6 (10.3%)	117 (95.9%)	5 (4.1%)	10 (43.5%)	13 (56.5%)	24 (75.0%)	8 (25.0%)	18 (64.3%)	10 (35.7%)	5 (35.7%)	9 (64.3%)	<0.001
Statistical Analysis: Pearson's Chi-square test														

Table-II: Attitude towards Oral and Maxillofacial surgical specialty among Medical Postgraduate Students (n = 277)

S. No.	Questions related to attitude	Postgraduate Program									
		FCPS (n = 180)				MS (n = 55)				MCPS (n = 28)	
		Junior (n = 58)		Senior (n = 122)		Junior (n = 23)		Senior (n = 32)			
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1	Do you think that OMF surgeons are qualified to perform procedures other than management of dentoalveolar surgeries?	25 (43.1%)	33 (56.9%)	48 (39.3%)	74 (60.7%)	15 (65.2%)	8 (34.8%)	15 (46.9%)	17 (53.1%)	19 (67.9%)	9 (32.1%)
2	Would you like to add OMFS specialty in your multi-disciplinary approach for patient management when needed?	48 (82.8%)	10 (17.2%)	97 (79.5%)	25 (20.5%)	19 (82.6%)	4 (17.4%)	23 (71.9%)	9 (28.1%)	27 (96.4%)	1 (3.6%)
3	Do you think that all surgical branches including OMFS should be a medical specialty?	49 (84.5%)	9 (15.5%)	99 (81.1%)	23 (18.9%)	19 (82.6%)	4 (17.4%)	26 (81.3%)	6 (18.8%)	26 (92.9%)	2 (7.1%)
Statistical Analysis: Pearson's Chi-square test											

(p<0.001). Two hundred twelve (76.5%) participants recognized that OMFS branches from dentistry, though responses showed notable differences (p < 0.001). When asked about its sub-specialty affiliations, participants displayed less clarity, with some attributing it to general surgery or head and neck surgery, reflecting significant variation (p < 0.001). Additionally, 226(81.6%) participants understood that OMFS encompasses more than minor oral surgeries, with seniors being notably more knowledgeable than juniors. This, too, was marked by a statistically significant difference (p < 0.001).

One hundred thirty-six (49.1%) participants believed that OMFS surgeons are well-qualified to perform procedures beyond dentoalveolar surgeries, with a statistically significant difference observed between postgraduate programs and training levels (p < 0.001). Two hundred twenty-eight (82.3%) of the population expressed willingness to involve OMFS specialists in a multidisciplinary approach to patient management when needed, this difference was not statistically significant between groups (p = 0.078). Similarly, 233 (84.1%) of the participants supported recognizing OMFS as a medical specialty alongside other surgical branches, and this response also lacked statistical significance (p = 0.381) between the groups.

For clinical scenarios involving the extraction of wisdom teeth and dental implants, OMFS emerged as the preferred specialty, p-values (<0.05).

Table-III: Referral practices for Oral and Maxillofacial Surgical Specialty among Medical Postgraduate Students (n = 277)

S. No.	Clinical Scenarios	Specialty of Preference	Postgraduate Program						*p*-value
			FCPS (n = 180)		MS (n = 55)		MCPS (n = 28)	MSc. (n = 14)	
			Junior (n = 58)	Senior (n = 122)	Junior (n = 23)	Senior (n = 32)			
1	Extraction of wisdom tooth	OMFS	49 (84.5%)	117 (95.9%)	9 (39.1%)	20 (62.5%)	16 (57.1%)	0 (0.0%)	
		Other	9 (15.5%)	5 (4.1%)	14 (60.9%)	12 (37.5%)	12 (42.9%)	14 (100.0%)	**<0.001**
2	Dental Implants	OMFS	49 (84.5%)	117 (95.9%)	9 (39.1%)	20 (62.5%)	16 (57.1%)	0 (0.0%)	
		Other	9 (15.5%)	5 (4.1%)	14 (60.9%)	12 (37.5%)	12 (42.9%)	14 (100.0%)	<0.001
3	Mandibular fracture	OMFS	44 (75.9%)	116 (95.1%)	7 (30.4%)	16 (50.0%)	15 (53.6%)	0 (0.0%)	
		Orthopedics	14 (24.1%)	6 (4.9%)	16 (69.6%)	16 (50.0%)	13 (46.4%)	14 (100.0%)	<0.001
4	Maxillary fracture	OMFS	7 (12.1%)	12 (9.8%)	8 (34.8%)	11 (34.4%)	9 (32.1%)	9 (64.3%)	
		ENT	43 (74.1%)	107 (87.7%)	7 (30.4%)	17 (53.1%)	16 (57.1%)	1 (7.1%)	
		Neurosurgery	8 (13.8%)	3 (2.5%)	8 (34.8%)	4 (12.5%)	3 (10.7%)	4 (28.6%)	<0.001
5	Nasal Bone Fracture	OMFS	3 (5.2%)	4 (3.3%)	0 (0.0%)	2 (6.3%)	3 (10.7%)	0 (0.0%)	
		ENT	55 (94.8%)	118 (96.7%)	23 (100.0%)	30 (93.8%)	25 (89.3%)	14 (100.0%)	0.399
6	Zygomatic bone fracture	OMFS	52 (89.7%)	119 (97.5%)	10 (43.5%)	21 (65.6%)	23 (82.1%)	3 (21.4%)	
		ENT	6 (10.3%)	3 (2.5%)	13 (56.5%)	11 (34.4%)	5 (17.9%)	11 (78.6%)	<0.001
7	Frontal Bone Fracture	OMFS	6 (10.3%)	8 (6.6%)	5 (21.7%)	8 (25.0%)	8 (28.6%)	3 (21.4%)	
		Neurosurgery	52 (89.7%)	114 (93.4%)	18 (78.3%)	24 (75.0%)	20 (71.4%)	11 (78.6%)	0.006
8	Dento-alveolar fracture	OMFS	58 (100.0%)	122 (100.0%)	13 (56.5%)	27 (84.4%)	25 (89.3%)	3 (21.4%)	
		ENT	0 (0.0%)	0 (0.0%)	10 (43.5%)	5 (15.6%)	3 (10.7%)	11 (78.6%)	<0.001
9	Facial Laceration	OMFS	17 (29.3%)	55 (45.1%)	3 (13.0%)	7 (21.9%)	8 (28.6%)	0 (0.0%)	
		ENT	4 (6.9%)	0 (0.0%)	5 (21.7%)	4 (12.5%)	2 (7.1%)	4 (28.6%)	
		Plastic and Reconstructive Surgery	37 (63.8%)	67 (54.9%)	15 (65.2%)	21 (65.6%)	18 (64.3%)	10 (71.4%)	<0.001
10	Intra-oral laceration	OMFS	52 (89.7%)	119 (97.5%)	11(47.8%)	22 (68.8%)	23 (82.1%)	3 (21.4%)	
		ENT	6 (10.3%)	3 (2.5%)	12 (52.2%)	10 (31.3%)	5 (17.9%)	11 (78.6%)	<0.001
11	Lump in the mouth	OMFS	48 (82.8%)	119 (97.5%)	9 (39.1%)	21 (65.6%)	23 (82.1%)	3 (21.4%)	
		ENT	10 (17.2%)	3 (2.5%)	14 (60.9%)	11 (34.4%)	5 (17.9%)	11 (78.6%)	<0.001
12	Lump in the nose	OMFS	12 (20.7%)	8 (6.6%)	6 (26.1%)	7 (21.9%)	10 (35.7%)	3 (21.4%)	
		ENT	46 (79.3%)	114 (93.4%)	17 (73.9%)	25 (78.1%)	18 (64.3%)	11 (78.6%)	0.002
13	Lump in the parotid	OMFS	27 (46.6%)	49 (40.2%)	15 (65.2%)	15 (46.9%)	19 (67.9%)	14 (100.0%)	
		ENT	31 (53.4%)	73 (59.8%)	8 (34.8%)	17 (53.1%)	9 (32.1%)	0 (0.0%)	<0.001
14	Submandibular swelling	OMFS	18 (31.0%)	27 (22.1%)	12 (52.2%)	8 (25.0%)	13 (46.4%)	8 (57.1%)	
		ENT	40 (69.0%)	95 (77.9%)	11 (47.8%)	24 (75.0%)	15 (53.6%)	6 (42.9%)	0.004
15	Jaw cyst / Tumor / Pathology	OMFS	49 (84.5%)	119 (97.5%)	12 (52.2%)	22 (68.8%)	24 (85.7%)	7 (50.0%)	
		ENT	9 (15.5%)	3 (2.5%)	11 (47.8%)	10 (31.3%)	4 (14.3%)	7 (50.0%)	<0.001
16	Maxillary sinus pathology	OMFS	27 (46.6%)	49 (40.2%)	15 (65.2%)	15 (46.9%)	19 (67.9%)	14 (100.0%)	
		ENT	31 (53.4%)	73 (59.8%)	8 (34.8%)	17 (53.1%)	9 (32.1%)	0 (0.0%)	<0.001
17	Biopsy of an intra-oral lesion	OMFS	49 (84.5%)	119 (97.5%)	10 (43.5%)	21 (65.6%)	23 (82.1%)	3 (21.4%)	
		ENT	9 (15.5%)	3 (2.5%)	13 (56.5%)	11 (34.4%)	5 (17.9%)	11 (78.6%)	<0.001
18	Cancer in mouth	OMFS	48 (82.8%)	119 (97.5%)	9 (39.1%)	21 (65.6%)	23 (82.1%)	3 (21.4%)	
		ENT	10 (17.2%)	3 (2.5%)	14 (60.9%)	11 (34.4%)	5 (17.9%)	11 (78.6%)	<0.001
19	Skin Cancer of face	OMFS	10 (17.2%)	6 (4.9%)	7 (30.4%)	6 (18.8%)	9 (32.1%)	3 (21.4%)	
		Plastic and Reconstructive Surgery	48 (82.8%)	116 (95.1%)	16 (69.6%)	26 (81.3%)	19 (67.9%)	11 (78.6%)	0.001
20	Facial abscess	OMFS	37 (63.8%)	109 (89.3%)	10 (43.5%)	22 (68.8%)	23 (82.1%)	3 (21.4%)	
		ENT	7 (12.1%)	2 (1.6%)	8 (34.8%)	6 (18.8%)	3 (10.7%)	8 (57.1%)	
		Plastic and Reconstructive Surgery	14 (24.1%)	11 (9.0%)	5 (21.7%)	4 (12.5%)	2 (7.1%)	3 (21.4%)	<0.001
21	Infection of mouth	OMFS	49 (84.5%)	119 (97.5%)	14 (60.9%)	24 (75.0%)	25 (89.3%)	9 (64.3%)	
		ENT	9 (15.5%)	3 (2.5%)	9 (39.1%)	8 (25.0%)	3 (10.7%)	5 (35.7%)	<0.001
22	Spreading facial spaces' infection	OMFS	37 (63.8%)	109 (89.3%)	10 (43.5%)	22 (68.8%)	23 (82.1%)	3 (21.4%)	
		ENT	7 (12.1%)	2 (1.6%)	8 (34.8%)	6 (18.8%)	3 (10.7%)	8 (57.1%)	
		Plastic and Reconstructive Surgery	14 (24.1%)	11 (9.0%)	5 (21.7%)	4 (12.5%)	2 (7.1%)	3 (21.4%)	<0.001
23	Necrotizing fasciitis of face	OMFS	37 (63.8%)	109 (89.3%)	10 (43.5%)	22 (68.8%)	23 (82.1%)	3 (21.4%)	
		Plastic and Reconstructive Surgery	21 (36.2%)	13 (10.7%)	13 (56.5%)	10 (31.3%)	5 (17.9%)	11 (78.6%)	<0.001
24	Mucormycosis / Other fungal infection of face	OMFS	37 (63.8%)	109 (89.3%)	10 (43.5%)	22 (68.8%)	23 (82.1%)	3 (21.4%)	
		ENT	7 (12.1%)	2 (1.6%)	8 (34.8%)	6 (18.8%)	3 (10.7%)	8 (57.1%)	
		Plastic and Reconstructive Surgery	14 (24.1%)	11 (9.0%)	5 (21.7%)	4 (12.5%)	2 (7.1%)	3 (21.4%)	<0.001
25	Acute facial pain	OMFS	45 (77.6%)	122 (100.0%)	8 (34.8%)	27 (84.4%)	21 (75.0%)	3 (21.4%)	
		Neurosurgery	13 (22.4%)	0 (0.0%)	15 (65.2%)	5 (15.6%)	7 (25.0%)	11 (78.6%)	<0.001
26	Chronic facial pain	OMFS	34 (58.6%)	120 (98.4%)	6 (26.1%)	27 (84.4%)	15 (53.6%)	2 (14.3%)	
		Neurosurgery	24 (41.4%)	2 (1.6%)	17 (73.9%)	5 (15.6%)	13 (46.4%)	12 (85.7%)	<0.001

27	Trigeminal Neuralgia	OMFS	31 (53.4%)	111 (91.0%)	6 (26.1%)	27 (84.4%)	15 (53.6%)	2 (14.3%)	<0.001
		Neurosurgery	27 (46.6%)	10 (8.2%)	16 (69.6%)	4 (12.5%)	10 (35.7%)	6 (42.9%)	
		Plastic and Reconstructive Surgery	0 (0.0%)	1 (0.8%)	1 (4.3%)	1 (3.1%)	3 (10.7%)	6 (42.9%)	
28	Cleft Lip	OMFS	28 (48.3%)	103 (84.4%)	11 (47.8%)	27 (84.4%)	18 (64.3%)	5 (35.7%)	<0.001
		ENT	16 (27.6%)	7 (5.7%)	6 (26.1%)	1 (3.1%)	5 (17.9%)	1 (7.1%)	
		Plastic and Reconstructive Surgery	14 (24.1%)	12 (9.8%)	6 (26.1%)	4 (12.5%)	5 (17.9%)	8 (57.1%)	
29	Cleft Palate	OMFS	30 (51.7%)	105 (86.1%)	11 (47.8%)	27 (84.4%)	19 (67.9%)	5 (35.7%)	<0.001
		ENT	28 (48.3%)	17 (13.9%)	12 (52.2%)	5 (15.6%)	9 (32.1%)	9 (64.3%)	
30	Tongue tie	OMFS	37 (63.8%)	112 (91.8%)	7 (30.4%)	20 (62.5%)	18 (64.3%)	3 (21.4%)	<0.001
		ENT	21 (36.2%)	10 (8.2%)	16 (69.6%)	12 (37.5%)	10 (35.7%)	11 (78.6%)	
31	Surgical management of OSA	OMFS	22 (37.9%)	49 (40.2%)	7 (30.4%)	12 (37.5%)	11 (39.3%)	3 (21.4%)	0.367
		General Surgery	3 (5.2%)	17 (13.9%)	1 (4.3%)	4 (12.5%)	3 (10.7%)	0 (0.0%)	
		ENT	33 (56.9%)	56 (45.9%)	15 (65.2%)	16 (50.0%)	14 (50.0%)	11 (78.6%)	
32	TMJ Ankylosis / Other pathology	OMFS	58 (100.0%)	122 (100.0%)	23 (100.0%)	32 (100.0%)	28 (100.0%)	14 (100.0%)	a
33	Soft tissue grafts for intra-oral defects	OMFS	9 (15.5%)	32 (26.2%)	5 (21.7%)	12 (37.5%)	9 (32.1%)	0 (0.0%)	0.047
		Plastic and Reconstructive Surgery	49 (84.5%)	90 (73.8%)	18 (78.3%)	20 (62.5%)	19 (67.9%)	14 (100.0%)	
34	Maxillary reconstruction	OMFS	5 (8.6%)	12 (9.8%)	1 (4.3%)	2 (6.3%)	3 (10.7%)	0 (0.0%)	0.774
		Plastic and Reconstructive Surgery	53 (91.4%)	110 (90.2%)	22 (95.7%)	30 (93.8%)	25 (89.3%)	14 (100.0%)	
35	Mandibular reconstruction	OMFS	5 (8.6%)	12 (9.8%)	1 (4.3%)	2 (6.3%)	3 (10.7%)	0 (0.0%)	0.774
		Plastic and Reconstructive Surgery	53 (91.4%)	110 (90.2%)	22 (95.7%)	30 (93.8%)	25 (89.3%)	14 (100.0%)	
36	Nose deformities / rhinoplasty	OMFS	1 (1.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (7.1%)	<0.001
		ENT	42 (72.4%)	111 (91.0%)	17 (73.9%)	28 (87.5%)	23 (82.1%)	5 (35.7%)	
		Plastic and Reconstructive Surgery	15 (25.9%)	11 (9.0%)	6 (26.1%)	4 (12.5%)	5 (17.9%)	8 (57.1%)	
37	Jaw discrepancies	OMFS	21 (36.2%)	42 (34.4%)	17 (73.9%)	11 (34.4%)	13 (46.4%)	12 (85.7%)	<0.001
		Plastic and Reconstructive Surgery	37 (63.8%)	80 (65.6%)	6 (26.1%)	21 (65.6%)	15 (53.6%)	2 (14.3%)	
38	Botox (Cosmetic / Functional)	Plastic and Reconstructive Surgery	30 (51.7%)	76 (62.3%)	14 (60.9%)	14 (43.8%)	16 (57.1%)	8 (57.1%)	0.481
		Other	28 (48.3%)	46 (37.7%)	9 (39.1%)	18 (56.3%)	12 (42.9%)	6 (42.9%)	
39	Surgical facelift	OMFS	8 (13.8%)	2 (1.6%)	3 (13.0%)	5 (15.6%)	4 (14.3%)	1 (7.1%)	0.091
		Plastic and Reconstructive Surgery	47 (81.0%)	107 (87.7%)	19 (82.6%)	23 (71.9%)	22 (78.6%)	11 (78.6%)	
		Other	3 (5.2%)	13 (10.7%)	1 (4.3%)	4 (12.5%)	2 (7.1%)	2 (14.3%)	

aDenotes no statistics are computed because P32 TMJ Ankylosis / Other pathology is a constant.
Statistical Analysis: Pearson's Chi-square test

In facial traumatology, OMFS was frequently chosen for management. However, cases like nasal bone fractures showed a preference for ENT and frontal bone fractures, where Neurosurgery was considered.

For facial pathology and infection cases, OMFS was the preferred specialty, especially for intraoral lumps and infections, *p*-values (<0.05). ENT and Plastic and Reconstructive Surgery were occasionally chosen for extraoral conditions, such as lumps in the parotid or maxillary sinus pathology.

For oral oncology, OMFS was the top choice for mouth cancer, while Plastic and Reconstructive Surgery was preferred for skin cancer of the face, with statistically significant *p*-values (<0.05).

For facial neuropathy, OMFS was preferred for managing facial pain, though Neurosurgery was a common choice for trigeminal neuralgia.

In cases of congenital anomalies like cleft lip, cleft palate, and tongue tie, OMFS was generally referred to, with significant *p*-values (<0.05). Plastic and Reconstructive Surgery was also frequently considered for cleft cases.

OMFS strongly favored for intraoral reconstructions and TMJ pathology, while facial reconstruction and cosmetic procedures, such as rhinoplasty and facelifts, were dominantly associated with Plastic and Reconstructive Surgery, with statistically significant differences (<0.05) supporting this trend.

DISCUSSION

This study provides a comprehensive overview about the Oral and Maxillofacial surgical (OMFS) specialty related gaps among medical postgraduate students. The responses to the questionnaire show that most participants were aware of the name "OMFS."

Internationally, in 1977, the nomenclature of the "Oral Surgery" specialty was upgraded to "Oral and Maxillofacial Surgery" to clarify the scope of the field, specifically for medical personnel and the public in general.[13] Similarly, the CPSP changed the Oral Surgery Fellowship Training Program nomenclature to OMFS in 2017.[14]

The study demonstrates that most participants claim to understand the scope of OMFS specialty, however 35% lack awareness which could limit referrals, interdisciplinary teamwork, and utilization of OMFS services. A study from UK by Jaibaji et al. in 2022 reported lack of awareness about the field resulting in negatively skewed perception of the specialty as a career, and similar study from New Zealand by Robert Mane in 2024 showed low confidence in understanding the broad scope of OMFS, it is present better among dental students as compared to medical respondents.[15,16] A high percentage (76.5%) recognize OMFS as a sub-specialty of dentistry, while others perceive it as a branch of general surgery or more specialized head and neck surgery, previously mentioned in the study from India by Nandagopal in 2019.11 This misconception may stem from the overlapping scope of OMFS with these specialties, particularly in the management of head and neck trauma, pathology and reconstructive procedures.[17]

A significant percentage of the study population acknowledges the role of OMFS surgeons in the management of clinical conditions beyond minor oral surgeries under local anesthesia. On the other hand, only 49.1% of the study population believes that Oral and Maxillofacial surgeons can perform procedures other than dentoalveolar surgeries. Additionally, much of the study population (82.3%) expressed a desire to include OMFS in the multidisciplinary team approach (MDT) when needed, while simultaneously believing that OMFS should be classified as a medical specialty. This observed discrepancy in recognizing the surgical and academic capabilities of OMF surgeons, having dental education background and clinical training, reflects an unsuitable, shallow and negative attitude from medical professionals toward the dental fraternity.

Study from Kanpur, India by Dr S. Gokkulakrishnan in 2022 highlighted that Oral and Maxillofacial surgeons are commonly known as "dentists" in the medical fraternity and as "surgeons" in the dental fraternity.[18] However, OMFS should ideally be the primary referral specialty due to acquired clinical expertise in managing facial traumatology. The high rate of referrals to neurosurgery for frontal bone fractures (86.3%) suggests a lack of recognition of OMFS's capability to manage craniofacial trauma, depending on the complexity of the case. Preference is given to plastic surgeons for purely aesthetic concerns, despite OMFS surgeons being equally skilled in managing facial lacerations as part of their clinical training.[18] Intraoral lacerations were predominantly referred to OMFS, reflecting accurate recognition of its scope.

On practical grounds, it has been observed that certain medical specialties with overlapping scopes of clinical practice with Oral and Maxillofacial Surgery often perceive maxillofacial surgeons as surgically less capable. As a result, they choose to manage relevant treatments themselves. This gap also leads to delayed patient referrals, with associated complications being managed by OMFS. Our results indicate that while OMFS is the preferred specialty for any pathological case of the oro-facial regions, including oral cancers, the medical specialty colleagues mainly refer facial and oral pathology requiring excision to ENT and plastic surgeons. Facial pathology management and reconstructive cases also fall within the scope of OMFS.[16]

The findings show that senior FCPS and MS candidates tend to have a much stronger grasp of knowledge and referral practices compared to junior candidates in the same program and those enrolled in MCPS and MSc programs. This positive knowledge stems from FCPS and MS being major PMDC Level III postgraduate programs, which differ significantly due to their extensive training, greater clinical exposure and practical experience gained by candidates over time. This gap is evident in the other PMDC Level II-B postgraduate programs, such as MCPS and MSc. It should be noted that the outcomes for major and minor postgraduate healthcare programs differ substantially. However, individual differences among medical profession PG trainees for OMFS specialty do exist. By overcoming professional gaps shared from this study, the OMFS residents and consultants with dentistry-based training would receive positive professionalism by all medical, surgical and allied healthcare professional representatives. This would ensure that the patients, society and academics do not suffer and that maximum benefits are achieved.

CONCLUSION

This study indicates that a robust awareness exists among postgraduate medical students about OMFS clinical

roles, gaps remain in their knowledge about specific clinical conditions and related surgical procedures.

LIMITATION OF STUDY

Study limitations include biased candidates' responses due to their personal preferences, dislikes, and past experiences with OMFS specialty colleagues. The cross-sectional random data collected does not represent the entire postgraduate student population of all medical and surgical specialties of Karachi city. More detailed and structured research is needed in this regard.

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Authors' Contribution

Following authors have made substantial contributions to the manuscript as under:

SK & KF & MZ: Data acquisition, data analysis, critical review, approval of the final version to be published.

MA & AAS: Study design, data interpretation, drafting the manuscript, critical review, approval of the final version to be published.

SK: Conception, data acquisition, drafting the manuscript, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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