

Oral maxillofacial surgical residency and its impact on the academic and research productivity at different levels in Pakistan

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Abstract

Oral and maxillofacial (OMF) surgery is a unique speciality. In many countries, OMFS is a dental speciality but the scope of its practice significantly overlaps with other specialities, including otolaryngology, head and neck surgery, plastic surgery, and orthopaedics. Thus, OMF surgery represents a true amalgamation of medical and dental specialities. There are different requirements of OMF residency training, which include a dental undergraduate training, medical training, or both. The training pathways for this speciality have evolved much in the last three decades and there is still no consensus over a single uniform path of becoming an OMF surgeon. An OMF surgeon deals with trauma, cysts, tumours and other pathologies of the maxilla, mandible, and zygomatic complex that need surgical correction. In addition to being a diverse speciality, the academic and research domains of residency have also changed. In Pakistan, residency training in OMF surgery started in 1994 and since then a lot of growth has taken place. This paper summarises the evolution and scope of OMF surgery and the contribution of this speciality in the overall academia and research in Pakistan's national dental scenario.

Keywords: Residency, Oral maxillofacial surgery, Research, Academia.

DOI: <https://doi.org/10.47391/JPMA.2231>

Oral and Maxillofacial Surgery (OMFS) is a clinical speciality that deals with the management of the conditions of the jaws, mouth and neighbouring structures that are susceptible to surgical management. This speciality requires a stringent skills set of surgery in complex anatomical regions of the head and neck.^{1,2} OMFS is an emerging speciality with multiple training models being followed around the world. There are four different pathways to become an OMF surgeon: acquiring a dental degree, followed by OMF residency; acquiring both dental and medical degrees, followed by OMF residency; a medical degree requirement with minimal

dental training, followed by OMF residency; and, lastly, a model where a degree in stomatology is required with a combination of dental and medical education, followed by the residency training.³

In the USA, and formerly in the UK, the OMF speciality has remained as a dental field, whereas in mainland Europe it was a medical field.⁴ In the UK and many countries, dual medical and dental qualifications alongside general surgical training and appropriate postgraduate examinations are the prerequisites to contend for further OMFS training posts.⁵ These compelling demands mean that the impediment in training has already been passed by the time an OMFS trainee has completed his/her basic surgical training.⁶

In Pakistan, OMFS is a dental degree.⁷ Here, MDS (university-based postgraduation) and FCPS (faculty-based apprentice training) are the two routes; both are four-year long courses after the mandatory internship, for becoming an oral and maxillofacial surgeon. The FCPS pathway has an edge in the sense that it has a national exit level examination conducted by the College of Physicians and Surgeons of Pakistan (CPSP). This model has a fixed supervisor to trainee ratio of 1:8, which maintains the quality standards and above all ensures an unbiased assessment.⁸ Whereas in MDS pathway, the degree is conferred after a university examination which mainly involves a thesis defence. Another difference in the two pathways is that the FCPS model is focused towards clinical service and patient care which leads to less emphasis on research, while the MDS training is more geared towards class-room teaching and involves writing mini-essays and research papers.⁹

In Pakistan, as shown in Table-1, there are more than 402 trainees in oral and maxillofacial surgery at various stages of residency. Over all there are 59 CPSP approved supervisors in 42 training centres across the country. Out of the estimated 402 CPSP fellows 59 are accredited supervisors and examiners. These are CPSP statistics, in addition to which there are other supervisors for MDS as well offering training posts in Lahore, Islamabad, and Karachi. As the fundamental training of MDS and FCPS is the same, many MDS and MSc supervisors are fellows of CPSP and Royal Surgical Colleges of England, Scotland,

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Table-1: Distribution of Oral and Maxillofacial Surgery specialists, trainees, trainers and residency programme in Pakistan (Approximate Numbers updated).

Speciality contribution	Sindh	Punjab	KPK	Balochistan	AJK Gilgit-Baltistan	Total
Number of training programmes	10	23	10	2	0	45
Number of trainees	132	220	65	18	0	435
Number of CPSP/Other Specialists	78	140	84	14	0	316
Number of supervisors	14	28	12	5	0	59
Number of Specialists Registered at PMDC	638	1038	500	65	51	2292

* The table includes specialists and trainees of the CPSP programme as well as other residency programmes. KPK: Khyber Pakhtunkhwa, AJK: Azad Jammu and Kashmir

and Ireland. This is to be noted that many centres of OMFS are also imparting MCPS and MSc training. Both MCPS and MSc training programmes are full-time two-year long programmes, designed for clinicians who intend to work in district level hospitals and secondary centres. As per the PMDC website statistics, the total number of registered and practicing OMF surgeons in Pakistan is close to 700.

In Pakistan, the OMFS speciality started in early 1990 as minor oral surgery programme that was confined mainly to tooth extraction, impactions and removal of cysts from the jaw bones. It later evolved into surgical dentistry training where the scope of the speciality expanded to work under general anaesthesia, involving more invasive procedures, oral implantology, management of maxillofacial trauma, and benign tumours of the jaws. Later, the speciality further evolved into its present form of oral and maxillofacial surgery where the clinicians are expected to manage orthognathic surgeries, temporomandibular joint surgeries and management of the malignancies in the mouth and jaws. The present state of OMFS demands the clinician to offer hospital-based dental care of medically compromised patients, working alongside other surgical teams.

In most of the Western countries, Oral Pathology and Oral Medicine are considered separate specialities. However, in Pakistan, these two are considered an integral part of OMFS training. This has helped the OMF clinicians to acquire a broader role as oral physicians as well as helped the local academia by providing manpower to teach at the undergraduate dental colleges, fulfilling the statutory requirements set up by the regulatory body (PMDC or PMC).

Over the past 30 years, the supply of locally trained OMF specialists has not only offered well-trained clinicians to the hospitals but also provided faculty who can impart teaching to the undergraduate students. Presently, OMFS has become a distinct speciality with its regular training posts. The OMF surgeons perform a wide range of surgeries in operating rooms along with sister specialities of ENT surgery and plastic surgery.

The combination of academic and clinical services have compelled young surgeons to participate in basic and clinical research, although the speciality is still in its infancy. There are many reasons why an increasing number of young dental graduates are choosing career in OMFS. These include vast clinical and training opportunities, ambition to teach dental students, and get involved in dental research to get scientific papers published for professional recognition.¹⁰

A survey done by the American Dental Association, shows that there has been a decline in the number of full-time faculty in the US dental schools and the number of graduates entering academia, leading to an increase in the faculty vacancies. In the five-year period that was surveyed, 0.89 was the mean of residents who joined full-time academics (about 1 in 12 graduates).¹¹

There is a significant need to inculcate research in the clinical residency of OMFS. Presently, research rotations of three months are being offered in some residency programmes in the US and Canada, whilst other programmes mandate one- or two-year long research rotation to encourage more residents to become academicians.¹² The surgical specialities in the UK are represented poorly in academic medicine, and it is significantly rare for trainees in OMFS to have any formal training in research.

According to a research conducted in 2011, 75% of the programme directors determined that their residents participated in research. However only 36% of the programmes offered scheduled research time, (usually three months or less) which was considered quite insufficient by most residents. The research experience was highly regarded by most residency directors and residents seeking a career in academics; however, those opting to work in private practice only considered it irrelevant.

Currently, the research being conducted is quite distant from generating any substantial benefits to the society on a larger scale. Advanced diplomas and degrees now hold the requirement of credible research, which is inspiring postgraduates and residents to invest more efforts into

Table-2: Contribution of OMF surgery and allied disciplines in the Medline indexed dental research in Pakistan.

Specialty contribution	JCPSP n (%)	JPMA n (%)	PJMS n (%)	JAMC n (%)
Oral Medicine	11 (4.3)	12 (7.4)	4 (8.2)	9 (8.8)
Oral Pathology	25 (9.9)	14 (8.6)	13 (26.5)	25 (24.5)
OMF Surgery	54 (21.3)	24 (14.7)	11 (22.4)	15 (14.7)
Other specialties of dentistry	163 (64.5)	113 (69.3)	21 (42.9)	53 (51.9)
Total dental papers	253 (100)	163 (100)	49(100)	102(100)

JCPSP: Journal of the college of Physicians and Surgeons of Pakistan.

JPMA: Journal of the Pakistan Medical Association.

PJMS: Pakistan Journal of Medical Sciences.

JAMC: Journal of the Ayub Medical College Abbottabad.

it.¹³ As the world of dentistry is progressing, getting involved in research is the only way to stay relevant. Recent policies of PMDC and HEC and more financial support granted to residents is making them more inclined towards research. The UNESCO Institute of Statistics summarised that developing countries contributed to only 27% of the total health researchers, with Pakistan's overall contribution to research being only 0.04%. Absence of proper mentors to spread awareness on the essence of research, scarce funding and poor time management are responsible for the fewer number of postgraduates engaging in research in the low-income provinces of Pakistan.¹⁴

For the past three decades, OMF specialists in Pakistan, have contributed substantially in academics at dental colleges as well as elevated the standard of OMFS care for patients. The research contribution of OMF surgeons is shown in Table-2. This does not include a large number of papers that have been published in the non-PubMed indexed journals of Pakistan. Similarly, papers published in international indexed or non-indexed journals outside the country are also not mentioned here. Despite these limitations in data collection, the contribution of OMF surgeons in Pakistan's national dental research scenario is quite satisfactory.

With the current trends and enthusiasm, in future a significant contribution is expected from the speciality for generating quality research, offering clinical services and

academics. Furthermore, to achieve quality in research, mentoring and role modelling and availability of research courses would be needed for international recognition in the field of OMFS.

Disclaimer: None to declare.

Conflict of Interest: None to declare.

Funding Sources: None to declare.

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