

# INSIGHTS AND PERSPECTIVES: EXPLORING THE TRAINEE EXPERIENCES IN MAXILLOFACIAL POSTGRADUATE TRAINING

Fahimuddin<sup>1</sup>, Naveed Afzal Khan<sup>2</sup>, Muhammad Masood Khan<sup>3</sup>, Harmain Kayani<sup>1</sup>, Shahid Ali Shah<sup>4</sup>, Mushyyada Durrani<sup>5</sup>, Atta Ur Rehman<sup>6</sup>,

## ABSTRACT

**Objective:** To explore the perspective of maxillofacial trainees about postgraduate training in maxillofacial surgery.

**Methodology:** Exploratory Qualitative study design (Case study) was adopted. A seven-question questionnaire was developed and piloted to identify the different perceptions of dental trainees. Six semi-structured interviews were conducted. Purposive Sampling was used. Thematic analysis was undertaken with Triangulation of transcripts

**Results:** Three main themes emerged from the data analyses. Sculpting Surgeons: Excellence in Maxillofacial Surgical Skills emerged as the first theme. This was based on the need to master the prerequisite skills for a maxillofacial surgeon with a focus on simulation, hands-on training, and workshops. Navigating Complexity: Challenges in Maxillofacial training emerged as the second theme and included the challenges the trainees face. Elevating Excellence: Enhancing Maxillofacial Training was the third theme that emerged from the suggestions of the trainees to improve their development.

**Conclusion:** Development of expertise in surgical skills is paramount for maxillofacial surgeons and opportunities need to be provided to enhance the development of trainees in these skills. The challenges highlighted need to be addressed to enhance the level of postgraduate training and achieve excellence in Maxillofacial Training.

**Keywords:** Perceptions, trainee, maxillofacial, surgeons, postgraduate training, FCPS.

## INTRODUCTION

Maxillofacial postgraduate training is a highly specialized field, which requires many different skills (e.g. surgical procedures, patient management, interdisciplinary cooperation) to be mastered by individuals. Maxillofacial surgery deals with the diagnosis and treatment of oral/facial diseases, injuries or defects. The practice is characterized by intensive training which requires extensive knowledge and skills. Pakistan like many other countries has tailored postgraduate maxillofacial training programs aimed at producing highly competent surgeons who can handle these complex cases<sup>1</sup>.

Postgraduate Trainees in maxillofacial programs face various difficulties and challenges. It is important to note that high stress levels and burnout are implicated in the intensity of this training where trainees often report feeling exhausted and emotionally drained affecting learning as well as performance<sup>2</sup>. Studies conducted in the United States and Europe point out that long working hours, high patient loads, and pressure to meet academic plus clinical benchmarks contribute towards trainee stress<sup>3</sup>.

As healthcare systems and surgical techniques evolve, innovative educational strategies are essential for surgical training to gain competency and technical skill expertise. Surgical residency programs that follow a traditional apprenticeship model are inefficient, costly, and endanger patient safety. The use of simulation technology in medical education and surgical training stems from the need to provide more effective surgical training models<sup>4</sup>.

Effective supervision, mentorship plus support systems are crucial in addressing the difficulties faced by maxillofacial trainees. they serve an important role among others such as guidance provision and emotional support channels as well as creating avenues for professional growth<sup>5,6</sup>, while boosting trainees' confidence to achieve the outlined competencies of their training<sup>7</sup>.

Postgraduate Trainees in maxillofacial surgery face distinctive challenges and opportunities

<sup>1</sup>Hayatabad Medical Complex, Peshawar

<sup>2</sup>Khyber Girls Medical College, Peshawar

<sup>3</sup>Khyber Medical University Institute of Dental Sciences, Kohat

<sup>4</sup>Université de Montpellier, Montpellier, France

<sup>5</sup>Peshawar Medical College, Peshawar

<sup>6</sup>Khyber College of Dentistry, Peshawar

## Address for Correspondence

### Dr. Naveed Afzal Khan

Assistant Professor, Department of Medical Education, Khyber Girls Medical College, Peshawar  
dr.naveed@live.com

that shape their educational experiences and career paths. Therefore, insights into these experiences are useful for understanding issues that affect the quality of training, barriers faced by trainees, and support that can make their professional development more effective.

## METHODOLOGY

An exploratory qualitative study design with a case study approach was adopted for this study. An interview guide comprising seven questions was developed and piloted to explore the insights and perspectives of postgraduate maxillofacial trainees about postgraduate training in maxillofacial surgery. Ethical approval was obtained from the Institutional Review Board of HMC. Purposive Sampling was used based on the experience and years of training. Informed written consent was taken from each participant. The participants were assured of their anonymity. Six semi-structured interviews were conducted with postgraduate maxillofacial trainees till the saturation point was achieved<sup>8</sup>. The interviews were recorded

and transcribed. The many aspects quality of this qualitative research were ensured. Respondent validation of the interview transcripts was done. Dependability was ensured by keeping the audit trail. Thematic analysis was undertaken with Triangulation of transcripts<sup>9</sup>.

## RESULTS

Three main themes emerged from the thematic analysis of the transcribed data shown in Figure 1. **Sculpting Surgeons: Excellence in Maxillofacial Surgical Skills** emerged as the first theme. This was based on the need to master the prerequisite skills for a maxillofacial surgeon with a focus on simulation along with hands-on training and workshops. **Navigating Complexity: Challenges in Maxillofacial training** emerged as the second theme and included the challenges being faced by the trainees. **Elevating Excellence: Enhancing Maxillofacial Training** was the third theme that emerged from the suggestions of the trainees to improve their development.



**Figure 1: Themes and subthemes from the transcribed data.**

### **Theme 1: Sculpting Surgeons: Excellence in Maxillofacial Surgical Skills**

The trainees were focused on the importance of surgical skills for a maxillofacial trainee. They highlighted the need for learning opportunities to develop these surgical skills. They felt that good patient exposure was integral to achieving the required levels of competence. They appreciated the organization of hands-on workshops for the opportunity to develop many of the needed surgical skills under supervision and guidance. They highlighted the need to focus on simulation along with hands-on training. The representative quotes for this theme are in Table 1.

<b>Table 1: Quotes for Sculpting Surgeons: Excellence in Maxillofacial Surgical Skills</b>	
1.	Skills are very important, especially for a surgeon. A surgeon is nothing without skills though he or she may have enough knowledge.
2.	All of the cases have been taught to us in a step-wise manner under direct supervision by our supervisor. That is to say that we are given plenty of opportunities to learn different surgical skills.
3.	Hands-on are a must. I was very much excited for the upcoming hands-on workshop on 3D models and that was why I had chosen it out of many because it involved skills.
4.	First, it should be on cadavers or simulation models or any model and then live surgery. Because one may get mastery in hand-eye coordination before doing it on a live patient.
5.	One gets to practice on a model to their heart's content without having a time limit. It is best to practice on a model before performing on a live patient. I agree that there should be more hands-on workshops.
6.	There should be a variety of such workshops.

## **Theme 2: Navigating Complexity: Challenges in Maxillofacial Training**

This emerged as the second theme and included the challenges being faced by the trainees. They felt that their training suffered due to the lack of patient exposure and proper guidance, mainly attributed to the large number of trainees in each department. Poor armamentarium and infection prevention and control also posed a major source of problems. The trainees felt that their training was especially lacking in guidance and opportunities regarding research. The representative quotes for this theme are in Table 2.

<b>Table 2: Quotes for Navigating Complexity: Challenges in Maxillofacial Training</b>	
1.	Skills are achieved through practice. What I have seen in this hospital is the unequal distribution of patients among consultants and because of that, we don't get much exposure to different types of cases. To improve our skills we need more patient exposure.
2.	All the deficiencies we are facing in learning (surgical) skills are due to the unequal patient distribution.
3.	Apart from patient flow, there is also a deficiency in the armamentarium. A lot of Instruments are deficient and because of that, we end up rescheduling patients most of the time.
4.	There is quite a lot of deficiency with respect to armamentarium and space. There are limited units and deficient dental extraction instruments. Apart from that there is no concern for an aseptic environment.
5.	We should get proper guidance about research. Just one CPSP workshop isn't enough to understand how to do research. We need someone who has done real research to guide us.

## **Theme 3: Elevating Excellence: Enhancing Maxillofacial Training**

The third theme emerged from the suggestions of the trainees to improve their development during their post-graduate training. They shared the need to focus on the acquisition of knowledge and experiences in a variety of learning strategies. They emphasized the preparation for their FCPS examination and wanted the training to better prepare them for passing their exams. They felt that research was neglected massively during their postgraduate training and emphasized the need for involvement in research projects to better develop their research skills and publications. The representative quotes for this theme are in Table 3.

<b>Table 3: Quotes for Elevating Excellence: Enhancing Maxillofacial Training</b>	
1.	Well, there should be proper ward rounds with history presentations. Something that is missing in our department. There should be more case-based studies as it is more effective. But in our department, there is more focus on giving simple topic presentations

2. No one discusses the exam (FCPS part II) or what we should study for our respective years/levels, so we really don't have any idea.
3. I still struggle with taking a good history from a patient whether it's a trauma case or any other. I'm still not clear on doing a proper examination or reaching a diagnosis from an exam point of view.
4. Equal patient distribution, to allow more hands-on (opportunities) to improve our skills.
5. There should be more hands-on workshops. We don't get that many opportunities in our hospital due to a lack of patient flow.
6. To focus more on the training and have more support from our teachers with proper guidance

## DISCUSSION

This study investigated the key components of postgraduate maxillofacial training by focusing on the experiences of trainees. The three overarching themes, "Sculpting Surgeons: Excellence in Maxillofacial Surgical Skills," "Navigating Complexity: Challenges in Maxillofacial Training," and "Elevating Excellence: Enhancing Maxillofacial Training," offer a comprehensive look at the strengths, weaknesses, and possible ways to improve the current training programs.

The acquisition of surgical skills is central to maxillofacial surgeon training. Respondents highlighted the significance of hands-on workshops. The use of simulation-based learning reflects this need for practical experience in gaining mastery over intricate surgical procedures. These results are consistent with Kumar S et al<sup>1</sup> as well as Badash I et al<sup>4</sup> which emphasize that relevant skill-based courses must support theoretical knowledge. Thus, it could be determined that supervised hands-on workshop sessions have helped the participants to become good surgeons. It is essential to develop surgical skills among maxillofacial surgeons. The importance of practical experience through hands-on workshops using simulation-based learning cannot be over-emphasized as mentioned by some participants concerning complex techniques needed during surgical procedures.

Trainees' observations expose systemic issues affecting our training programs, with the inadequate exposure of certain cases being a primary concern. The difference in the number of patients seen by various trainees due to a large number of trainees in a setup and other factors like different training settings are

undermining the all-inclusive clinical experience for our trainees and need to be addressed so that every student can have equal chances to learn. The deficiency concerning the armamentarium worsens the situation. Tetteh S et al. also draw attention to the limited availability of resources found in developed countries<sup>10</sup>. This necessitates a call for investment towards modernizing our training environments through the incorporation of up-to-date technologies. Furthermore, lack or inadequate research opportunities lead to incomplete educational development because skills become lopsidedly biased toward either purely practical or theoretical aspects<sup>4</sup>. The resulting high anxiety levels, burnout, and emotional exhaustion are global concerns<sup>2,3</sup>.

The recommendations of the trainees regarding improved training suggest that it is important to have a comprehensive strategy for professional development. Prioritizing better preparation for the FCPS examination necessitates well-structured exam-based training modules. The need for more participation in research projects is also being reported by Magennis P et al.<sup>5</sup> and Stewart H.<sup>6</sup> as they argue that mentorship and research activities can help improve satisfaction levels among trainees and their competence development during training. Good supervision and mentoring programs, along with opportunities for collaborative research can greatly enrich training experiences.

## CONCLUSIONS

The process of becoming a proficient oral surgeon requires that maxillofacial surgeons who want to be trained in these fields have many chances. All the problems identified can only be solved through improving postgraduate education and making it better than usual Maxillofacial Training.

## Author contributions

Author	Area of contribution
--------	----------------------

Fahimuddin <sup>1</sup>	Idea conception, Design of the study, Data Collection, Data Analysis and Manuscript Critical Appraisal.
Naveed Afzal Khan <sup>2</sup>	Idea conception, Design of the study, Data Analysis and Drafting the Manuscript.
Muhammad Masood khan <sup>3</sup>	Idea conception, Design of the study and Manuscript Critical Appraisal.
Harmain Kayani <sup>4</sup>	Idea conception, Design of the study, Data Collection and Manuscript Critical Appraisal.
Shahid Ali Shah <sup>5</sup>	Data Analysis, Manuscript Critical Appraisal.
Mushyyada Durrani <sup>6</sup>	Data Analysis, Drafting the Manuscript.
Atta Ur Rehman <sup>7</sup>	Idea conception, Design of the study and Manuscript Critical Appraisal.

## REFERENCES

1. Kumar S. Training pathways in oral and maxillofacial surgery across the globe—a mini review. *Journal of maxillofacial and oral surgery*. 2017 Sep;16:269-76.
2. Kamran RB, Zaheer N, Shahbaz M, Aslam K, Yasser F, Ijaz F. Prevalence of burnout among dentists in CMH lahore medical college & institute of dentistry, Pakistan. *Adv. Bio. Res.* 2020;11:164-9
3. Zeller AN, Thiem DG, Bartella AK, Seifert LB, Beiglboeck FM, Hoffmann J, Ehrenfeld M, Pabst A. Training in oral and maxillofacial surgery in Germany-residents' satisfaction and future challenges. *Journal of cranio-maxillofacial surgery*. 2021 May 1;49(5):415-21.
4. Badash I, Burt K, Solorzano CA, Carey JN. Innovations in surgery simulation: a review of past, current and future techniques. *Annals of translational medicine*. 2016 Dec;4(23).
5. Magennis P, Begley A, McLean A, Rapaport B, Dhariwal DK, Brennan PA, Hutchison I. The UK Mentoring and Support Programme (MSP) for those considering a career in Oral and Maxillofacial Surgery (OMFS). A review of a 'Register Interest in OMFS' website and the MSP as two key resources created by the British Association of Oral and Maxillofacial Surgeons to promote recruitment and retention (2008–2020). *British Journal of Oral and Maxillofacial Surgery*. 2021 Oct 1;59(8):935-40.
6. Stewart H, Iskander M. Mentorship in Modern UK Surgical Training. *MedEdPublish*. 2017;6.
7. Tannyhill RJ. Development of Competencies in Oral and Maxillofacial Surgery Training. *Oral and Maxillofacial Surgery Clinics*. 2022 Nov 1;34(4):505-13.
8. DeJonckheere M, Vaughn LM. Semistructured interviewing in primary care research: a balance of relationship and rigour. *Fam Med*. 2019;7(2)
9. Terry G, Hayfield N, Clarke V, Braun V. Thematic analysis. *The SAGE handbook of qualitative research in psychology*. 2017 Jun 30;2(17-37):25.
10. Tetteh S, Bibb RJ, Martin SJ. Maxillofacial prostheses challenges in resource constrained regions. *Disability and Rehabilitation*. 2019 Jan 30;41(3):348-56.