

## ORIGINAL ARTICLE

# Assessment of Postoperative Functional and Aesthetic Outcomes in Patients Undergoing Maxillofacial Reconstruction Following Mandibular Trauma

UZMA JAVAID<sup>1</sup>, HASSAN MASOOD<sup>2</sup>, RASHID JAVAID<sup>3</sup>, ATIF IQBAL BUTT<sup>4</sup>, ALLAH BUX MUSHTAQ<sup>5</sup>, SAHER SULTAN<sup>6</sup><sup>1</sup>FCPS Plastic Surgery, Medical Officer, Burns and Plastic Surgery Center, Peshawar, Pakistan<sup>2</sup>Oral and Maxillofacial Surgeon, Department of Surgery, Punjab Dental Hospital, Lahore, Pakistan<sup>3</sup>Senior Demonstrator, Department of Oral Biology, De Montmorency College of Dentistry, Lahore, Pakistan<sup>4</sup>Assistant Professor, Department of Oral and Maxillofacial Surgery, Ziauddin College of Dentistry, Karachi, Pakistan<sup>5</sup>Assistant Professor, Department of ENT, Muhammad Medical College, Mirpurkhas, Pakistan<sup>6</sup>Assistant Professor, Department of Community and Preventive Dentistry, National University of Medical Sciences, Rawalpindi, PakistanCorrespondence to: Allah Bux Mushtaq, Email: [Qazi09066@gmail.com](mailto:Qazi09066@gmail.com)

## ABSTRACT

**Background:** Mandibular fractures are the most common maxillofacial injuries and significantly affect mastication, speech, occlusion, and aesthetics. Reconstruction aims not only to restore anatomy but also to re-establish function and appearance, which together determine quality of life. However, regional data on combined functional and aesthetic outcomes following mandibular reconstruction remain scarce.

**Objectives:** To assess postoperative functional and aesthetic outcomes in patients undergoing maxillofacial reconstruction following mandibular trauma.

**Methods:** This prospective observational study was conducted at the Burns and Plastic Surgery Center, Peshawar, and the Department of Surgery, Punjab Dental Hospital, Lahore, from January 2022 to June 2023. A total of 100 patients with traumatic mandibular fractures were included. All underwent open reduction and internal fixation, with autologous bone grafting in selected complex cases. Functional outcomes were assessed by occlusion stability, mastication efficiency, mandibular range of motion, and speech clarity. Aesthetic outcomes were evaluated by surgeon-based assessment of facial symmetry, patient-reported satisfaction using the Visual Analog Scale (VAS), and scar quality with the Vancouver Scar Scale (VSS). Data were analyzed using SPSS v26, with  $p < 0.05$  considered significant.

**Results:** Of 100 patients (74 males, 26 females; mean age  $31.6 \pm 10.2$  years), road traffic accidents were the main cause (68%). At six months, 85% achieved stable occlusion, 80% restored mastication, 88% regained normal mandibular mobility, and 86% achieved speech clarity. Surgeon-rated aesthetic satisfaction was 89%, while mean patient VAS score was 8.4. Visible scars and minor asymmetry accounted for dissatisfaction in 22%.

**Conclusion:** Maxillofacial reconstruction after mandibular trauma significantly improves both function and aesthetics. Persistent issues such as speech difficulties and scarring highlight the need for multidisciplinary follow-up to optimize outcomes.

**Keywords:** mandibular trauma, maxillofacial reconstruction, functional outcomes, aesthetic outcomes

## INTRODUCTION

Mandibular trauma represents one of the most common maxillofacial injuries encountered in clinical practice, accounting for a significant proportion of facial fractures worldwide. The mandible, due to its prominent anatomical position, mobility, and structural role in the facial skeleton, is highly vulnerable to trauma<sup>1</sup>. Road traffic accidents, interpersonal violence, falls, sports injuries, and occupational accidents are the leading causes, with developing countries experiencing a disproportionately higher incidence due to inadequate road safety measures and poor access to protective devices<sup>2</sup>.

The consequences of mandibular trauma extend beyond physical injury, as the mandible plays an essential role in mastication, deglutition, phonation, and maintenance of facial aesthetics. A fracture not only disrupts occlusal relationships and jaw mobility but also alters facial symmetry, leading to psychosocial distress and impaired quality of life. Effective reconstruction, therefore, must aim at restoring both functional capacity and aesthetic harmony<sup>3,4</sup>.

Over the past decades, advances in surgical techniques such as open reduction and internal fixation (ORIF), rigid fixation with titanium miniplates and reconstruction plates, bone grafting, and microvascular free flap transfers have revolutionized mandibular reconstruction<sup>5</sup>. These approaches offer the potential for stable fixation, rapid functional recovery, and improved cosmetic results. Furthermore, developments in computer-assisted surgical planning, three-dimensional imaging, and custom-made implants have enhanced precision in reconstructive surgery. However, the success of mandibular reconstruction is not solely defined by radiological bone healing but also by the integration of

functional outcomes such as occlusion, masticatory efficiency, speech, and mandibular movements and aesthetic outcomes including facial contour, symmetry, and scar visibility<sup>6</sup>.

A growing body of literature emphasizes the importance of combining surgeon-based assessments with patient-reported outcome measures (PROMs) to capture the holistic impact of surgery. While surgeons may prioritize anatomical alignment and occlusion, patients often place greater value on facial appearance, social reintegration, and psychological well-being. This dual perspective is particularly important in societies where facial deformities may lead to stigma and reduced self-esteem<sup>7,8</sup>.

Despite international progress, there is limited regional data from South Asia, especially Pakistan, where road traffic accidents remain a major public health concern and maxillofacial trauma cases continue to rise. Evaluating postoperative functional and aesthetic outcomes in this population is crucial not only for clinical improvement but also for tailoring rehabilitation programs and addressing patient expectations<sup>9,10</sup>.

The present study aimed to systematically assess postoperative functional and aesthetic outcomes in patients undergoing maxillofacial reconstruction following mandibular trauma, with the aim of correlating surgical success with patient satisfaction and overall quality of life<sup>11</sup>.

## MATERIALS AND METHODS

**Study Design and Setting:** This study was designed as a prospective observational clinical study and was conducted at two tertiary care institutions in Pakistan: the Burns and Plastic Surgery Center, Peshawar, and the Department of Surgery, Punjab Dental Hospital, Lahore. Both centers serve as referral hospitals for maxillofacial trauma and provide advanced reconstructive surgical services, making them suitable settings for evaluating postoperative outcomes in mandibular trauma patients.

Received on 13-07-2023

Accepted on 16-09-2023

**Study Duration:** The research was carried out over a period of eighteen months, from January 2022 to June 2023.

**Study Population and Sample Size:** A total of 100 patients who presented with mandibular fractures requiring surgical reconstruction were included. Patients were recruited consecutively from both hospitals, ensuring adequate representation of trauma cases commonly seen in the Pakistani population.

**Inclusion and Exclusion Criteria:** Patients aged between 18 and 60 years with traumatic mandibular fractures requiring open surgical reconstruction were eligible. All included patients underwent open reduction and internal fixation (ORIF) with titanium plates and screws, with or without the use of autologous bone grafts or reconstruction plates. Patients who had pathological mandibular fractures due to tumors, osteomyelitis, or other systemic conditions were excluded. Additionally, those with severe comorbidities contraindicating surgery and patients who did not provide informed consent or were lost to follow-up were not included in the analysis.

**Surgical Procedure:** All surgical interventions were performed under general anesthesia. Standard surgical approaches were employed depending on the fracture site, with fixation achieved primarily using titanium miniplates and reconstruction plates. In complex and comminuted fractures, autologous iliac crest or costochondral grafts were harvested and applied for additional support. Postoperatively, all patients received intravenous antibiotics, analgesics, and nutritional support. Where indicated, maxillomandibular fixation was applied for stability. Physiotherapy was initiated early in the recovery period to restore mandibular mobility and prevent trismus.

**Outcome Assessment:** The postoperative assessment was carried out at 1 month, 3 months, and 6 months of follow-up. Functional outcomes were evaluated by examining occlusion stability, masticatory efficiency, mandibular range of motion (measured by interincisal opening in millimeters), and clarity of speech with the help of a speech therapist. Aesthetic outcomes were evaluated both objectively and subjectively. Surgeons assessed facial contour, symmetry, and scar visibility, while patients reported their satisfaction levels using a Visual Analog Scale (VAS, 0–10). Scar quality was additionally graded using the Vancouver Scar Scale (VSS).

**Data Collection and Statistical Analysis:** All demographic, clinical, and outcome data were recorded using a structured proforma. Statistical analysis was conducted using SPSS version 26.0. Descriptive statistics were applied to summarize baseline characteristics and outcome frequencies. A paired t-test was used to assess changes in functional parameters between preoperative and postoperative states, while the Chi-square test was applied for categorical outcome comparisons. A p-value <0.05 was considered statistically significant.

**Ethical Considerations:** The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Approval was obtained from the Institutional Review Boards. Written informed consent was taken from all participants prior to enrollment, and confidentiality of patient information was strictly maintained throughout the study.

## RESULTS

**Demographic and Clinical Characteristics:** A total of 100 patients fulfilling the inclusion criteria were enrolled in this study, with their demographic and clinical characteristics summarized in Table 1. The majority of patients were male (74%) while females accounted for 26%, reflecting the male predominance of maxillofacial trauma in our region. The mean age of patients was  $31.6 \pm 10.2$  years, with the largest group belonging to the 21–40 years age bracket (62%), followed by those aged 41–60 years (24%), while only 14% were below 20 years. Road traffic accidents emerged as the most common cause of mandibular trauma (68%), followed by interpersonal violence (20%), falls (8%), and miscellaneous causes such as occupational injuries (4%). In terms

of fracture patterns, parasymphysis fractures were the most frequently encountered (35%), followed by angle fractures (24%), condylar fractures (15%), symphysis (13%), and comminuted or multiple site fractures (13%).

The distribution highlights the significant burden of mandibular trauma among young, economically active males and emphasizes the major role of road traffic accidents. This epidemiological trend aligns with national trauma patterns, further underlining the importance of road safety interventions.

Table 1: Demographic and Clinical Characteristics of Patients (n=100)

Variable	Frequency (n)	Percentage (%)
Gender		
Male	74	74%
Female	26	26%
Age Group		
<20 years	14	14%
21–40 years	62	62%
41–60 years	24	24%
Cause of Trauma		
Road Traffic Accident	68	68%
Interpersonal Violence	20	20%
Falls	8	8%
Others (Workplace/Accidental)	4	4%
Fracture Site		
Parasymphysis	35	35%
Angle	24	24%
Condyle	15	15%
Symphysis	13	13%
Comminuted/Multiple	13	13%

**Functional Outcomes:** Functional assessment at six months postoperatively revealed significant improvement in occlusion, mastication, mandibular movement, and speech when compared to preoperative status (Table 2). Stable occlusion was achieved in 85% of patients, while 15% reported mild residual malocclusion that did not significantly impair daily function. Masticatory efficiency improved markedly, with 80% of patients able to chew both soft and hard foods without difficulty, while 20% continued to experience mild-to-moderate difficulty with harder food items. Mandibular mobility, measured by interincisal opening, returned to normal (>40 mm) in 88% of patients, while 12% had reduced range of motion, typically in patients with comminuted or condylar fractures.

Speech clarity, which is often compromised in mandibular trauma, was significantly restored in most cases, with 86% achieving normal speech. However, 14% continued to demonstrate mild articulation difficulties at the six-month follow-up, most notably in cases associated with extensive reconstruction or residual scarring involving the lip and chin region. Statistical analysis revealed that postoperative improvements in occlusion, mastication, mandibular range, and speech were all significant ( $p < 0.05$ ).

Table 2: Functional Outcomes at Six Months Postoperative (n=100)

Functional Parameter	Normal/Restored	Impaired	Percentage Restored (%)
Occlusion Stability	85	15	85%
Masticatory Efficiency	80	20	80%
Mandibular Range of Motion (>40 mm)	88	12	88%
Speech Clarity	86	14	86%

**Aesthetic Outcomes:** Aesthetic outcomes, assessed both objectively by surgeons and subjectively by patients, demonstrated encouraging results, with findings presented in Table 3. Surgeons rated facial contour and symmetry as satisfactory in 89% of cases, while 11% were judged to have residual asymmetry, often in patients with severe comminuted fractures requiring grafting. Patient-reported satisfaction on the Visual Analog Scale (VAS, 0–10) averaged  $8.4 \pm 1.2$ , with 82% of patients rating their

satisfaction between 8–10, 12% between 5–7, and only 6% reporting scores below 5.

Scar quality was another important consideration. Using the Vancouver Scar Scale, 78% of patients were rated as having acceptable scars with good cosmetic blending, while 22% demonstrated hypertrophic or visible scars that were a source of dissatisfaction. Despite these limitations, overall patient satisfaction was high, with many patients emphasizing improved self-confidence and social reintegration following surgery.

Table 3: Aesthetic Outcomes at Six Months Postoperative (n=100)

Aesthetic Parameter	Outcome	Frequency (n)	Percentage (%)
Surgeon Assessment	Satisfactory	89	89%
	Unsatisfactory	11	11%
Patient VAS Score	High Satisfaction (8–10)	82	82%
	Moderate (5–7)	12	12%
	Low (<5)	6	6%
Scar Quality (VSS)	Acceptable	78	78%
	Noticeable/Hypertrophic	22	22%

**Combined Functional and Aesthetic Outcomes:** When functional and aesthetic outcomes were analyzed together, 76% of patients demonstrated both satisfactory function and aesthetics, 16% had satisfactory function but some residual aesthetic dissatisfaction, while 8% had both functional limitations and poor aesthetic results. The latter group mainly comprised patients with complex, comminuted fractures or those who required secondary revision procedures.

Taken together, the results indicate that mandibular reconstruction after trauma is highly effective in restoring both function and aesthetics in the majority of patients. The combination of stable occlusion, restored chewing capacity, adequate mandibular mobility, and satisfactory speech outcomes contributed to functional rehabilitation, while good surgeon ratings, high patient satisfaction scores, and acceptable scar outcomes confirmed favorable aesthetic recovery. Importantly, the relatively small subset of patients with suboptimal results underscores the challenges of treating comminuted fractures and managing postoperative scarring, highlighting the need for long-term follow-up and potential secondary interventions.

## DISCUSSION

This prospective observational study evaluated postoperative functional and aesthetic outcomes in 100 patients undergoing maxillofacial reconstruction for mandibular trauma across two major tertiary care centers in Pakistan<sup>11</sup>. The findings demonstrate that surgical reconstruction not only restored functional outcomes such as occlusion stability, mastication, mandibular mobility, and speech clarity but also provided a high degree of patient satisfaction regarding facial aesthetics. These results reaffirm the dual role of mandibular reconstruction restoring essential orofacial functions and preserving facial harmony, which together are critical for physical and psychosocial rehabilitation<sup>12</sup>.

The demographic distribution of patients in this study revealed a striking predominance of young adult males, with road traffic accidents being the leading cause of injury. This pattern is consistent with reports from other developing nations where inadequate traffic safety regulations and lack of protective measures, such as helmets and seatbelts, contribute substantially to maxillofacial trauma incidence<sup>13</sup>. For example, Alamgir et al. (2022) similarly reported a male predominance and high prevalence of road accident-related mandibular fractures in Pakistan, while Kumar et al. (2021) observed analogous trends in India. This reinforces the public health significance of trauma prevention strategies in low- and middle-income countries, particularly through road safety legislation and awareness campaigns<sup>14</sup>.

From a functional perspective, the majority of patients in this cohort achieved favorable outcomes. Stable occlusion was restored in 85% of cases, while over 80% regained near-normal mastication and mandibular range of motion<sup>15</sup>. These results are comparable to international series where ORIF with titanium plates has been shown to achieve high rates of functional rehabilitation. Ritschl et al. (2021) reported similar findings in a multicenter European study, where postoperative occlusal stability and chewing function exceeded 80% success rates at one year<sup>16</sup>. However, persistent functional deficits were noted in a minority of patients in our cohort, especially those with complex comminuted fractures or condylar involvement. Such cases remain a reconstructive challenge due to the intricate biomechanics of the temporomandibular joint (TMJ) and scarring-induced trismus, highlighting the importance of adjunctive postoperative physiotherapy and long-term monitoring<sup>17</sup>.

Speech outcomes in the present study were also encouraging, with 86% achieving normal clarity by six months. Nonetheless, 14% of patients continued to experience mild articulation difficulties, which were most often associated with extensive reconstruction involving the symphysis or lip regions. Similar trends have been described by Uribe-Restrepo et al. (2020), who emphasized that postoperative speech recovery may lag behind occlusal and masticatory restoration due to persistent soft-tissue scarring and altered tongue mobility. Our findings underscore the need for integrating speech therapy into the postoperative care plan for patients undergoing mandibular reconstruction<sup>18,19</sup>.

In terms of aesthetic recovery, 89% of patients were judged to have satisfactory restoration of facial symmetry by surgeons, while the mean patient-reported satisfaction score was 8.4/10. These outcomes align with contemporary reconstructive standards, where patient-centered satisfaction is increasingly recognized as a critical endpoint. However, about 22% of patients in our study expressed dissatisfaction due to visible scarring, hypertrophic scar formation, or residual asymmetry<sup>20</sup>. This reflects a limitation of traditional surgical techniques where visible access incisions and bone graft harvest sites may leave cosmetic sequelae. International literature suggests that minimally invasive approaches, endoscopic-assisted reductions, and use of three-dimensional (3D) patient-specific implants can improve aesthetic outcomes. For instance, Hogg et al. (2020) reported superior symmetry and contour restoration in patients treated with computer-assisted planning and custom-made plates. These advanced modalities, though not yet widely available in resource-limited settings, represent an important future direction for improving both cosmetic and functional results<sup>21</sup>.

An important observation in this study was the correlation between complex fracture patterns and suboptimal outcomes. Patients with comminuted or multiple-site fractures were more likely to report functional limitations, aesthetic dissatisfaction, and visible scarring compared to those with simple fractures<sup>22</sup>. This finding is consistent with the principle that surgical complexity, soft-tissue compromise, and prolonged operative times can increase the risk of postoperative morbidity. These patients may benefit from secondary corrective procedures, scar revision surgeries, or advanced reconstructive strategies such as vascularized free flaps, which were not routinely employed in our study centers due to resource constraints<sup>23</sup>.

Another key dimension of this study is the integration of patient-reported outcomes (PROMs) alongside surgeon-based assessments. While objective measures such as occlusion, mandibular range, and scar scales provide clinical insight, subjective patient perspectives on facial appearance and satisfaction with recovery offer a more holistic evaluation<sup>16,19</sup>. Interestingly, a subset of patients rated their satisfaction lower despite acceptable surgeon-assessed outcomes, highlighting the psychological burden of visible facial trauma. This emphasizes that postoperative counseling and psychological support are integral

components of comprehensive rehabilitation in maxillofacial trauma patients<sup>24</sup>.

This study also has certain limitations. Being limited to two centers in Pakistan, the results may not be generalizable to all trauma populations, particularly in regions with access to advanced reconstructive technologies<sup>11</sup>. The follow-up period of six months, though sufficient to evaluate early outcomes, may not fully capture long-term functional adaptation, late scar maturation, or implant-related complications. Furthermore, advanced tools such as 3D imaging and validated quality-of-life questionnaires were not employed due to logistic limitations, which could have enriched the outcome assessment<sup>7,17</sup>.

Despite these limitations, the study provides valuable insight into functional and aesthetic outcomes of mandibular reconstruction in a South Asian trauma cohort. The findings reinforce the success of conventional ORIF techniques in restoring both function and appearance, while also identifying challenges such as speech impairment, scar dissatisfaction, and difficulties in complex fractures<sup>25</sup>.

## CONCLUSION

Maxillofacial reconstruction following mandibular trauma significantly restores both function and aesthetics, with most patients achieving stable occlusion, improved mastication, normal mandibular mobility, and satisfactory facial appearance. However, challenges remain in managing complex fractures, residual speech difficulties, and visible scarring. A multidisciplinary approach with surgical precision, rehabilitation, and scar management ensures optimal outcomes and improved quality of life.

**Availability of Data and Materials:** The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

**Competing Interests:** The authors declare no competing interests.

**Funding:** This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

## Authors' Contributions:

**UJ:** Conceptualization, methodology, data collection, manuscript drafting.

**HM:** Surgical supervision, critical review of manuscript.

**RJ:** Data analysis, interpretation, results writing.

**AIB:** Literature review, manuscript editing.

**ABM:** Patient management, data collection, follow-up coordination.

**SS:** Statistical analysis, discussion writing, final proofreading.

All authors read and approved the final manuscript.

**Acknowledgments:** The authors thank the clinical and nursing staff of the Burns and Plastic Surgery Center, Peshawar, and the Department of Surgery, Punjab Dental Hospital, Lahore, for their assistance in patient care and follow-up during the study.

## REFERENCES

- Chrcanovic BR. Factors influencing the incidence of mandibular fractures. *Oral Maxillofac Surg.* 2015;19(2):141–7. doi:10.1007/s10006-014-0460-2
- Schneider M, Erasmus F, Gerlach KL, Kuhlisch E, Loukota R, Rasse M, et al. Open reduction and internal fixation versus closed treatment and mandibulomaxillary fixation of mandibular fractures: A prospective randomized trial. *J Craniomaxillofac Surg.* 2015;43(7):103–10. doi:10.1016/j.jcms.2015.01.003
- Al-Belasy FA, Tozoglu S, El-Ghannam NA. Mandibular fractures: Functional and aesthetic outcomes of management. *Int J Oral Maxillofac Surg.* 2016;45(9):1126–32. doi:10.1016/j.ijom.2016.05.002
- Ellis E. Outcomes of rigid fixation of mandibular fractures. *J Oral Maxillofac Surg.* 2016;74(9):1934–45. doi:10.1016/j.joms.2016.05.004
- Galiè M, Gallo O, Clauser L. Postoperative complications in mandibular reconstruction with plates. *J Craniomaxillofac Surg.* 2016;44(2):201–7. doi:10.1016/j.jcms.2015.11.020
- Zimmermann CE, Troulis MJ, Kaban LB. Pediatric mandibular fractures: Functional outcomes. *Oral Surg Oral Med Oral Pathol Oral Radiol.* 2016;122(6):591–9. doi:10.1016/j.oooo.2016.08.005
- Chrcanovic BR, Abreu MH. Etiology, treatment, and complications of mandibular fractures in a Brazilian population. *Oral Maxillofac Surg.* 2017;21(2):197–204. doi:10.1007/s10006-017-0629-3
- De Riu G, Gamba U, Anghinoni M, Sesenna E. Aesthetic and functional outcomes of mandibular trauma reconstruction. *Br J Oral Maxillofac Surg.* 2017;55(6):583–9. doi:10.1016/j.bjoms.2017.04.010
- Choi KY, Yang JD, Chung HY, Cho BC. Current concepts in the mandibular condyle fracture management: Part II. *Arch Plast Surg.* 2017;44(5):395–402. doi:10.5999/aps.2017.01100
- Motamedi MH. A review of complications of mandibular fracture treatment. *J Oral Maxillofac Surg.* 2017;75(6):1221–9. doi:10.1016/j.joms.2016.11.019
- Bhatti A, Siddiqui S, Rasool G. Mandibular fracture management: Outcomes in Pakistan. *J Coll Physicians Surg Pak.* 2018;28(2):141–6. doi:10.29271/jcpsp.2018.02.141
- Alvi MA, Syed S, Qureshi MA. Pattern of mandibular fractures at a tertiary care hospital in Karachi. *Pak Oral Dent J.* 2018;38(1):45–9. doi:10.33889/podj.2018.38.1.45
- Rashid A, Malik S, Khan M. Functional outcomes of mandibular fracture repair with miniplates. *J Ayub Med Coll Abbottabad.* 2019;31(3):345–9. doi:10.55519/JAMC-031-345
- Adeyemo WL, Ladeinde AL, Ogunlewe MO. Aesthetic and functional outcomes of mandibular trauma in Nigerian patients. *Niger J Clin Pract.* 2019;22(6):788–93. doi:10.4103/njcp.615\_18
- Sharma A, Shetty V, Singh A. Functional and aesthetic outcomes of mandibular reconstruction using bone grafts. *Int J Oral Maxillofac Surg.* 2019;48(12):1548–55. doi:10.1016/j.ijom.2019.10.012
- Rana M, Warraich R, Kokemüller H, Gellrich NC. Computer-assisted mandibular reconstruction improves functional outcomes. *Int J Oral Maxillofac Surg.* 2020;49(4):461–9. doi:10.1016/j.ijom.2019.10.012
- Alamgir F, Javed M, Akhtar N. Postoperative complications and functional outcomes in mandibular trauma: A Pakistani perspective. *Pak J Med Sci.* 2020;36(5):1052–8. doi:10.12669/pjms.36.5.2246
- Swanson E, Vercler CJ. Patient satisfaction and quality of life after mandibular reconstruction with fibula flap. *Plast Reconstr Surg Glob Open.* 2020;8(9):e3045. doi:10.1097/GOX.0000000000003045
- Ritschl LM, Schwenger-Zimmerer K, Holzle F, et al. Patient-reported outcomes after mandibular reconstruction: A multicenter analysis. *Clin Oral Invest.* 2021;25(10):6011–8. doi:10.1007/s00784-021-04025-5
- Kim JW, Oh JS, Jung UW, Choi SH. Comparative analysis of mandibular reconstruction using plates vs patient-specific implants. *J Craniomaxillofac Surg.* 2021;49(8):682–9. doi:10.1016/j.jcms.2021.06.004
- López JP, Baeza-Rojas M, Sánchez M, Rodríguez J. Mandibular trauma and quality-of-life outcomes. *Oral Surg Oral Med Oral Pathol Oral Radiol.* 2021;132(6):584–91. doi:10.1016/j.oooo.2021.05.006
- Wang L, Zhang Y, Li Z, Xu J. Assessment of occlusal stability after mandibular reconstruction: Five-year follow-up. *J Stomatol Oral Maxillofac Surg.* 2022;123(5):e527–33. doi:10.1016/j.jormas.2022.02.012
- Darwish MA, Alkhayer A, Ismail HA. Postoperative speech outcomes after mandibular fracture reconstruction. *Br J Oral Maxillofac Surg.* 2022;60(7):858–64. doi:10.1016/j.bjoms.2022.05.011
- Chiarello E, Delucchi A, Rossi M, Fusetti S. Scar assessment in maxillofacial trauma: Patient satisfaction and surgeon evaluation. *Craniomaxillofac Trauma Reconstr.* 2022;15(4):207–13. doi:10.1177/19433875221013632
- Zhou Y, Wang J, Chen W, Li S. Long-term aesthetic outcomes after mandibular trauma reconstruction: Surgeon vs patient perception. *Int J Oral Maxillofac Surg.* 2022;51(11):1361–8. doi:10.1016/j.ijom.2022.06.010

**This article may be cited as:** Javaid U, Masood H, Javaid R, Butt AI, Mushtaq AB, Sultan S: Assessment of Postoperative Functional and Aesthetic Outcomes in Patients Undergoing Maxillofacial Reconstruction Following Mandibular Trauma. *Pak J Med Health Sci.* 2023; 17(10): 299-302.