Review Article

Iran's Significant Advances in Orthognathic Surgery Research

Sahand Samieirad [1,*], Ricardo Grillo [2], Erfan Bardideh [3], Majid Hosseiniabrishami [1]

1. Department of Oral and Maxillofacial Surgery, Mashhad Dental School, Mashhad University of Medical Sciences, Mashhad, Iran
2. Department of Oral and Maxillofacial Surgery, University of São Paulo, São Paulo, Brazil
3. Dental Research Center, Mashhad Dental School, Mashhad University of Medical Sciences, Mashhad, Iran

***Corresponding Author:**

Sahand Samieirad

Mashhad University of Medical Sciences, Mashhad, 91778 99191 Razavi Khorasan Province, Iran.

Email: samieerads@mums.ac.ir

Received: 29-01-2026
Accepted: 01-04-2026

ABSTRACT

Background: The aim of this article was to perform a bibliometric analysis of Iranian researchers in orthognathic surgery.

Methods: A bibliographical search for orthognathic surgery literature on Iran was conducted on Wef of Science. Mendeley and Microsoft Excel were used for tabulation and data visualization. Some statistical tests were performed with a 95% confidence interval, considered significant.

Results: From 7,535 articles, 86 included at least one Iranian author, making Iran the second highest contributor in the Middle East after Turkey. Notable topics beyond orthodontic treatment included cosmetic surgery, obstructive sleep apnea, blood clotting, and anesthesiology, with complications being the most studied. Emerging themes were Virtual Surgical Planning and technology. Statistical analysis showed a very high Pearson correlation between the number of ranked institutions and both the number of published articles (ρ=0.85) and the quantity of citations (ρ=0.80), and a moderate correlation with the H-index (ρ=0.46). No correlation was found between citations per document and the number of ranked institutions (ρ= -0.27).

Conclusion: Iran is a leading country in the field of orthognathic surgery, both regionally and globally. This article provides valuable insights for Iranian researchers and academics, highlighting the potential of international collaboration and free open-source technology to advance knowledge in areas like Virtual Surgical Planning. Promoting global partnerships and utilizing innovative technologies can enhance patient outcomes and benefit practitioners in resource-limited regions worldwide.

KEYWORDS
Bibliometrics; Orthognathic surgery; Iran; Middle East

Please cite this paper as:
Samieirad S, Grillo R, Bardideh E, Hosseiniabrishami M. Iran's Significant Advances in Orthognathic Surgery Research. World J Plast Surg. 2026;15(1):9-16.
doi: 10.61882/wjps.15.1.9

INTRODUCTION

Historical records reveal that during the era of traditional medicine, ancient Iranian scholars at Jundishapur University and later in post-Islamic medicine made significant contributions to oral surgery[1]. However, a more structured approach to orthognathic surgery in Iran, dates back to the mid-20th century, marking the beginning of a journey that has seen significant advancements and contributions to the field [2].

[Downloaded from wjps.ir on 2026-09-16]

[DOI: 10.66224/wjps.15.1.9]

Orthognathic surgery is particularly critical in Iran due to the high prevalence of severe dentofacial deformities, such as Class III malocclusions and Class II skeletal patterns [3]. Studies have estimated the prevalence of severe dentofacial deformities needing orthognathic surgeries being between 2%-8% of the population [4]. Of the orthognathic surgeries performed, bimaxillary osteotomy was the most prevalent procedure, accounting for 66% of surgeries [5]. The distribution of malocclusions shows a substantial impact on both jaws, especially in Class III subjects, indicating a widespread need for comprehensive surgical intervention [5].

In Iranian society, there is a strong cultural emphasis on facial aesthetics and harmony, making the outcomes of orthognathic surgery critically importante [6]. The desire for improved appearance and function drives the demand for high-quality surgical results. This cultural perception amplifies the significance of achieving precise and effective surgical interventions, as patients have high expectations for both functional and cosmetic improvements post-surgery [7]. As a result, Iranian surgeons are motivated to adopt the latest techniques and technologies to meet these expectations and ensure optimal patient satisfaction.

Iranian surgeons have made several important innovations in the field of orthognathic surgery, contributing significantly to its advancement. One such innovation is the integration of 3D printing technology, which has revolutionized maxillofacial surgery by providing unprecedented precision in surgical planning and execution [8]. Other contributions of Iranian surgeons include advancements in surgical approaches, anesthesia management to reduce postoperative nausea and vomiting, and the development of more effective postoperative care protocols[9].

In addition to technological innovations, Iranian researchers have made substantial contributions through extensive scholarly activity. Bibliometric analyses of Iranian research in orthognathic surgery indicate a growing impact and presence in the global medical community. These contributions not only enhance the understanding of complex surgical procedures but also highlight Iran's role as a leader in medical research and innovation in the region.

Given these considerations, conducting a bibliometric analysis of orthognathic surgery research is crucial for comprehensively understanding the scope and impact of contributions made by Iranian researchers.

MATERIALS AND METHODS

This study adheres to the principles outlined in the Leiden Manifesto [10]. A literature review was conducted on the same day using Web of Science (WoS) to avoid bias. The search performed was "orthognathic surgery", including only articles authored by at least one Iranian researcher. Two authors (SS and RG) agreed on inclusion and exclusion criteria, resolving any disagreements by consensus. Recent studies were used for data comparison. Exclusion criteria included (1) articles not indexed on WoS, (2) articles unrelated to oral surgery, and (3) specific types of articles such as abstracts only, retracted articles, event calendars, conference papers, and book reviews. A secondary search was performed regarding university numbers in SJR (https://www.scimagojr.com/).

Data collected were manually entered into Mendeley software (Elsevier, London, UK). Bibliometric measures were compiled to evaluate the retrieved data. Microsoft Excel (Microsoft Corp. Redmond, WA, USA), was used to gather and analyze data from WoS. Indicators such as authors' h-index were obtained through WoS. Journals that had undergone name changes were consolidated into a single entity. Descriptive statistics were used to describe specific features, and statistical analyses were conducted with a 95% confidence interval. As this article is a bibliometric analysis, it is exempt from institutional review board approval since it only relied on publicly available electronic sources and did not generate new data or report specific patient data.

RESULTS

From 7,535 articles, 86 were included with at least one Iranian author. Of Middle Eastern countries, it poses as second only after Turkey (n=204). These 86 articles were cited 844 times with an average of 9.81 per article. Overall, 725 cited these articles reaching an H-index of 16. The most cited article was "*Treatment decision in adult patients with class III malocclusion: surgery versus orthodontics*" [11] with 63 citations. Mashhad University of Medical Sciences leads in institutional affiliation with 20 publications on this topic, followed by Islamic Azad University and Tehran University of Medical Sciences, with 19 each.

[Downloaded from wjps.ir on 2026-09-16]

[DOI: 10.66224/wjps.15.1.9]

The number of Iranian publications on orthognathic surgery is increasing with a mild exponential uptrend over the years (R^2=0.3308) (Figure 1). Overall, 27 different journals were retrieved. Journal of Craniofacial Surgery was the leader (n=22) [12–33], followed by Journal of Oral and Maxillofacial Surgery (n=14) [34–47], International Journal of Oral and Maxillofacial Surgery (n=7) [48-54], British Journal of Oral and Maxillofacial Surgery [55–60] and Journal of Stomatology Oral and Maxillofacial Surgery [61–66] (n=6, each) and Journal of Craniomaxillofacial Surgery (n=4) [67–70]. The average impact factor of the included articles was 1.96.

Beyond orthodontic treatment (n=38), interesting citations topics correlated were cosmetic surgery (n=8), obstructive sleep apnea (n=5), blood clotting (n=5) and anesthesiology (n=4). Ten topics were retrieved (Figure 2). Complications was the more common studied topic [12,13,22,25,42,51,53,55,56,60,65,66,69,71–78]. Virtual Surgical Planning [79–81] and technology [82,83] are emerging themes.

Statistical analysis of data from SJR revealed a very high Pearson correlation between the number of ranked institutions and the number of published

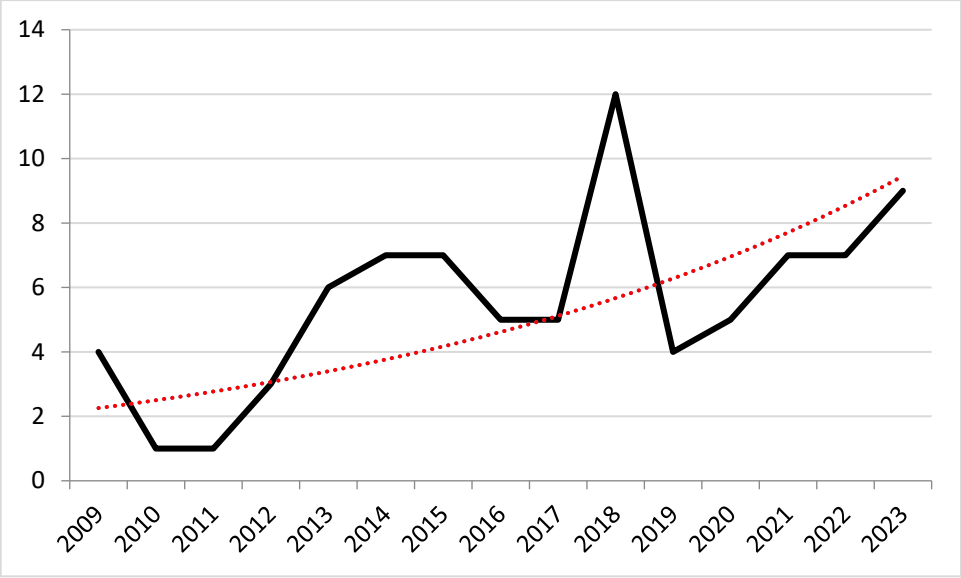

Figure 1. Number of publications (Y) over the years (X). Upward trend exponential line in red

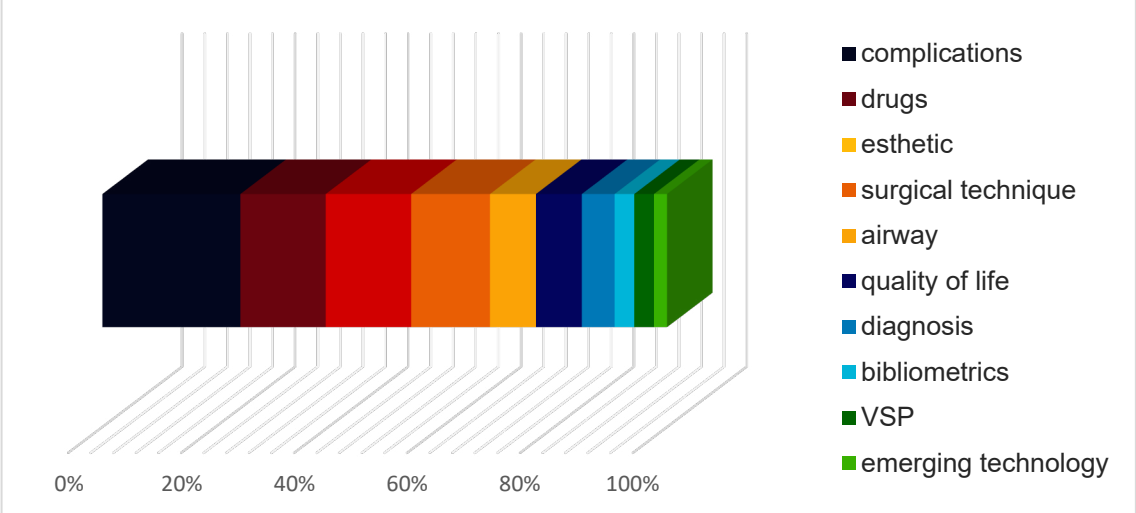

Figure 2. Main topic retrieved manually from articles where it is possible to notice interest in different subjects related to orthognathic surgery with prevalence to complications and use of helpful drugs.

[Downloaded from wjps.ir on 2026-09-16]

[DOI: 10.66224/wjps.15.1.9]

articles (ρ=0.85; *P*<0.00001), as well as the quantity of citations (ρ=0.80; *P*<0.00001). A moderate correlation with the H-index was found (ρ=0.46; *P*<0.00001). No correlation was found between the number of citations per document and the quantity of ranked institutions (ρ= -0.27; *P*<0.00001).

DISCUSSION

Geographic bibliometrics plays a crucial role in understanding and fostering international collaboration. By analyzing publication trends across different regions, researchers can identify key areas of expertise, emerging research hubs, and opportunities for cross-border partnerships. This is particularly beneficial for low and middle-income countries (LMICs), which often face resource constraints and limited access to cutting-edge technology. International collaboration enabled by geographic bibliometrics can bridge these gaps, facilitating knowledge transfer, capacity building, and the sharing of best practices [61]. Collaborative efforts can also attract funding and improve the visibility and impact of research from LMICs, contributing to a more equitable global scientific community [84].

Publications regarding orthognathic surgery face a challenge due to the high cost of the surgery and the time-intensive nature of surgeon training, which involves a long learning curve. Articles on other topics related to OMFS, such as oral surgery, maxillofacial trauma, cleft lip and oral pathology, are more common in LMICs [61,84]. Complications associated with orthognathic surgery are considered a very interesting topic [85]. While complications and effective medications during the perioperative period are the main subjects published, there is an emerging trend in publications about Virtual Surgical Planning (VSP) and new technologies. This underscores the significance of Iranian surgeons in adopting and creating new technologies related to orthognathic surgery. The democratization and spread of free and open-source software tend to decrease the gap among LMICs. Learning and training on non-specific software such as Blender, Meshmixer, and 3D Slicer, though challenging, present a tremendous opportunity to bring technology to these regions.

The number of articles associating orthognathic surgery with rhinoplasty and other cosmetic surgeries highlights the growing concern for facial aesthetics. Cosmetic procedures can be considered important adjuncts to orthognathic surgery to enhance facial harmony.

The presented data, focusing on Iran, reveal significant insights into the country's research landscape in OMFS field. The very high Pearson correlation coefficients between the number of ranked institutions and both the number of published articles (ρ = 0.85) and the quantity of citations (ρ = 0.80) indicate robust research output from Iranian institutions, suggesting substantial contributions to the volume and impact of OMFS research. The moderate correlation with the H-index (ρ = 0.46) reflects a relationship between institutional ranking and research quality, though other factors like collaboration and funding also play roles. Notably, the lack of correlation between citations per document and the quantity of ranked institutions (ρ = -0.27) suggests that impactful research can emerge from various institutions, not just the highly ranked ones. These findings highlight the strong foundation of Iranian OMFS research and the potential for further enhancement through increased international collaboration, visibility, and investment in advanced technologies.

As stated before, no economic index can be associated with the number or quality of publications [61]. Although the volume of publications is not high, their quality is notable, with most being published in well-regarded specialized OMFS journals. This highlights the importance of orthognathic surgery and its continuous advancements for Iranian authors and surgeons.

CONCLUSION

Iran is a prolific country in the field of orthognathic surgery, not only in the Middle East but also worldwide. This article serves as a valuable resource for Iranian authors, researchers, and academics. International collaboration and widespread education, along with the use of free and open-source technology, could significantly enhance knowledge in emerging topics such as Virtual Surgical Planning. By fostering global partnerships and leveraging innovative technologies, Iranian researchers can continue to make substantial contributions to the field, addressing complex clinical challenges and improving patient outcomes.

[Downloaded from wjps.ir on 2026-09-16]

[DOI: 10.66224/wjps.15.1.9]

Additionally, the sharing of open-source resources can democratize access to advanced surgical planning tools, benefiting practitioners and patients in resource-limited settings globally.

ETHICAL APPROVAL

This is a bibliometric analysis. No ethical approval is required.

FUNDING

This article was not supported by any grant.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interests.

REFERENCES

1. Azizi MH. Gondishapur School of Medicine: the most important medical center in antiquity. *Archives of Iranian Medicine* 2008;**11**:116-9.
2. Yarmoradian S, Shahraki M, Amirpour Haradasht S. A Brief History of Oral and Maxillofacial Surgery in Iran. *J Res Hist Med* 2023;**12**(2):145-8.
3. Akbari M, Lankarani KB, Honarvar B, Tabrizi R, Mirhadi H, Moosazadeh M. Prevalence of malocclusion among Iranian children: A systematic review and meta-analysis. *Dent Res J (Isfahan)* 2016 Sep;**13**(5):387-95.
4. Eslamipour F, Afshari Z, Najimi A. Prevalence of orthodontic treatment need in permanent dentition of Iranian population: A systematic review and meta-analysis of observational studies. *Dent Res J (Isfahan)* 2018 Jan-Feb;**15**(1):1-10.
5. Eslamipour F, Borzabadi-Farahani A, Le BT, Shahmoradi M. A Retrospective Analysis of Dentofacial Deformities and Orthognathic Surgeries. *Ann Maxillofac Surg* 2017 Jan-Jun;**7**(1):73-7.
6. Farahvash MR, Khak J, Horestani MJ, Farahvash Y, Farahvash B. Facial aesthetic analysis in beautiful Persian female subjects aged 13 to 30 years by means of photogrammetry. *Plast Reconstr Surg* 2010 Jun;**125**(6):245e-7e.
7. Eslamipour F, Najimi A, Tadayonfard A, Azamian Z. Impact of Orthognathic Surgery on Quality of Life in Patients with Dentofacial Deformities. *Int J Dent* 2017;**2017**:4103905.
8. Farjaminejad R, Farjaminejad S, Nucci L, et al. 3D Printing Approach in Maxillofacial Surgery in Iran: An Evaluation Using the Non-Adoption, Abandonment, Scale-Up, Spread, and Sustainability (NASSS) Framework. *Applied Sciences* 2024;**14**(7):3075.
9. Alam M, Shakeri A, Khorsand A, Nasseri K, Nasseri S. Assessing the impact of aprepitant and ondansetron on postoperative nausea and vomiting in orthognathic surgeries: a randomized controlled trial. *BMC Anesthesiology* 2023 2023/12/13;**23**(1):412.
10. Hicks D, Wouters P, Waltman L, De Rijcke S, Rafols I. Bibliometrics: The Leiden Manifesto for research metrics. *Nature* 2015;**520**:429–31.
11. Eslami S, Faber J, Fateh A, Sheikholaemmeh F, Grassia V, Jamilian A. Treatment decision in adult patients with class III malocclusion: surgery versus orthodontics. *Prog Orthod* 2018;**19**(1).
12. Jahromi HE, Gholami M, Rezaei F. A randomized double-blinded placebo controlled study of four interventions for the prevention of postoperative nausea and vomiting in maxillofacial trauma surgery. *J Craniofac Surg* 2013;**24**(6).
13. Eshghpour M, Mianbandi V, Samieirad S. Intra- and Postoperative Complications of Le Fort I Maxillary Osteotomy. *J Craniofac Surg* 2018;**29**(8):E797–803.
14. Eftekharian HR, Rajabzadehy Z. The Efficacy of Preoperative Oral Tranexamic Acid on Intraoperative Bleeding During Rhinoplasty. *J Craniofac Surg* 2016;**27**(1):97–100.
15. Eslamian L, Borzabadi-Farahani A, Badiee MR, Le BT. An Objective Assessment of Orthognathic Surgery Patients. *J Craniofac Surg* 2019;**30**(8):2479–82.
16. Emadian Razvadi ES, Soheilifar S, Esmaeelinejad M, Naghdi N. Evaluation of the Changes in the Quality of Life in Patients Undergoing Orthognathic Surgery: A Multicenter Study. *J Craniofac Surg* 2017;**28**(8):e739–43.
17. Shokri A, Khajeh S, Khavid A. Evaluation of the accuracy of linear measurements on lateral cephalograms obtained from cone-beam computed tomography scans with digital lateral cephalometric radiography: an in vitro study. *J Craniofac Surg* 2014;**25**(5):1710–3.
18. Yazdani J, Ebrahimi H, Talesh KT, Khashabi E, Pourshahidi S, Tadbir AA. Comparing the effect of 3 orthognathic surgical methods on the mandibular range of movement. *J Craniofac Surg* 2010;**21**(3):703–5.
19. Golchini E, Rasoolijazi H, Momeni F, Shafaat P, Ahadi R, Jafarabadi MA, et al. Investigation of the Relationship Between Mandibular Morphology and Upper Airway Dimensions. *J Craniofac Surg* 2020;**31**(5):1353–61.
20. Dehghani M, Fazeli F, Sattarzadeh AP. Efficiency and Duration of Orthodontic/Orthognathic Surgery Treatment. *J Craniofac Surg* 2017;**28**(8):1997–2000.
21. Rahpeyma A, Khajehahmadi S. Accessory Mental

[Downloaded from wjps.ir on 2026-09-16]

[DOI: 10.66224/wjps.15.1.9]

Foramen and Maxillofacial Surgery. *J Craniofac Surg* 2018;**29**(3):E216–7.
22. Tabrizi R, Eftekharian HR, Langner NJ, Ozkan BT. Comparison of the effect of 2 hypotensive anesthetic techniques on early recovery complications after orthognathic surgery. *J Craniofac Surg* 2012;**23**(3):e203–5.
23. Shokri A, Ramezani K, Afshar A, Poorolajal J, Ramezani N. Upper Airway Changes Following Different Orthognathic Surgeries, Evaluated by Cone Beam Computed Tomography: A Systematic Review and Meta-analysis. *J Craniofac Surg* 2021;**32**(2):E147–52.
24. Jahanbin A, Poosti M, Salari S, Esmaily H, Sagha H. Effect of changes in divine proportion on esthetic perception of smile in frontal view. *J Craniofac Surg* 2013;**24**(6):1946–9.
25. Emrani E, Ghaemi H, Labafchi A, Samieirad S. The Effect of Bimaxillary Orthognathic Surgery on Voice Characteristics in Skeletal Class 3 Deformity Patients: An Evaluation Using Acoustic Analysis. *J Craniofac Surg* 2021;**32**(6):2129–33.
26. Firouzei G, Rahimi A, Tabrizi R, Pouzesh A. The comparative study of thin and thick surgical splint during Le Fort I osteotomy in vertical maxillary excess. *J Craniofac Surg* 2013;**24**(3):e279–83.
27. Tehranchi A, Behnia H, Younessian F. Bipolar Disorder: Review of Orthodontic and Orthognathic Surgical Considerations. *J Craniofac Surg* 2015;**26**(4):1321–5.
28. Rahpeyma A, Khajehahmadi S. Inferior alveolar nerve repositioning and orthognathic surgery. *J Craniofac Surg* 2014;**25**(5):e435–8.
29. Jamilian A, Showkatbakhsh A, Gholami D, Kamali Z. The relation between pogonion advancement and posterior maxillary impaction. *J Craniofac Surg* 2009;**20**(3):841–3.
30. Geramy A, Sheikhzadeh S, Jalali YF, Nazarifar AM. Anthropometric Facial Changes After Orthognathic Surgery and Their Relation With Oral Health Related Quality of Life. *J Craniofac Surg* 2019;**30**(4):1118–20.
31. Geramy A, Sheikhzade S, Nazarifar AM. Cephalometric and Anthropometric Changes and Their Relation to Patients' Satisfaction After Orthognathic Surgery. *J Craniofac Surg* 2020;**31**(4):1022–5.
32. Arabion H, Tabrizi R, Fattahi H, Khaghaninezhad M, Bahramnia F. Spatial changes of the chin in the vertical and sagittal planes after superior repositioning of the maxilla. *J Craniofac Surg* 2015;**26**(3):e249–53.
33. Eslami N, Hoseini Zarch H, Jahanbin A, Darabi Z, Moayedi S. Comparison of Nasopharyngeal Airway Volume in Cleft Lip and Palate Patients With Normal Individuals Using Cone Beam Computed Tomography. *J Craniofac Surg* 2023;**34**(3):1111–4.
34. Yaghmaei M, Ejlali M, Nikzad S, Sayyedi A, Shafaeifard S, Pourdanesh F. General anesthesia in orthognathic surgeries: does it affect horizontal jaw relations? *J Oral Maxillofac Surg* 2013;**71**(10):1752–6.
35. Ghorbani F, Gheibollahi H, Tavanafar S, Eftekharian HR. Improvement of Esthetic, Functional, and Social Well-Being After Orthognathic Surgical Intervention: A Sampling of Postsurgical Patients Over a 10-Year Period From 2007 to 2017. *J Oral Maxillofac Surg* 2018;**76**(11):2398–403.
36. Eftekharian H, Vahedi R, Karagah T, Tabrizi R. Effect of tranexamic acid irrigation on perioperative blood loss during orthognathic surgery: a double-blind, randomized controlled clinical trial. *J Oral Maxillofac Surg* 2015;**73**(1):129–33.
37. Haghighat A, Khosrawi S, Tamizifar A, Haghighhat M. Retraction notice to: Does Low-Level Laser Photobiomodulation Improve Neurosensory Recovery After Orthognathic Surgery? A Clinical Trial With Blink Reflex. *J Oral Maxillofac Surg* 2021;**79**(12):2606.
38. Yavari N, Samieirad S, Labafchi A, Rezaeetalab F, Eshghpour M. Is There an Increase in the Risk of Obstructive Sleep Apnea After Isolated Mandibular Setback Surgery? An Evaluation Using the STOP-BANG Questionnaire. *J Oral Maxillofac Surg* 2020;**78**(11):2061–9.
39. Pourdanesh F, Khayampour A, Jamilian A. Therapeutic effects of local application of dexamethasone during bilateral sagittal split ramus osteotomy surgery. *J Oral Maxillofac Surg* 2014;**72**(7):1391–4.
40. Samieirad S, Tohidi H, Eshghpour M, Hashemipour MA. An Unusual Case of Deep Vein Thrombosis After Orthognathic Surgery: A Case Report and Review of the Literature. *J Oral Maxillofac Surg* 2018;**76**(12):2649.e1-2649.e9.
41. Keyhan SO, Fallahi HR, Adham G, Cheshmi B. Concomitant Dorsal Preservation Rhinoplasty and Orthognathic Surgery: A Technical Note. *J Oral Maxillofac Surg* 2020;**78**(9):1630.e1-1630.e10.
42. Bohluli B, Varedi P, Bayat M, Bagheri SC. Submental fat transfer: an approach to enhance soft tissue conditions in patients with submental lipomatosis after orthognathic surgery. *J Oral Maxillofac Surg* 2014;**72**(1):164.e1-164.e7.
43. Labafchi A, Shooshtari Z, Grillo R, Sharifian Attar A, Eshghpour M, Samieirad S. The Beneficial Effect of Preoperative Dexmedetomidine in Controlling Postoperative Pain, Nausea, and Vomiting After Orthognathic Surgery: A Triple-blind Randomized Clinical Trial. *J Oral Maxillofac Surg* 2023;**81**(8):941–9.
44. Abbasi S, Rahpeyma A, Shooshtari Z, Rezaeetalab F, Vaezi T, Samieirad S. Bimaxillary Orthognathic Surgery Does Not Induce Obstructive Sleep Apnea

[Downloaded from wjps.ir on 2026-09-16]

[DOI: 10.66224/wjps.15.1.9]

in Skeletal Class III Patients. *J Oral Maxillofac Surg* 2022;**80**(8):1340–53.
45. Eshghpour M, Samieirad S, Attar AS, Kermani H, Seddigh S. Propofol Versus Remifentanil: Which One Is More Effective in Reducing Blood Loss During Orthognathic Surgery? A Randomized Clinical Trial. *J Oral Maxillofac Surg* 2018;**76**(9):1882.e1-1882.e7.
46. Ansari AH, Shooshtari Z, Alipour M, Abrishami MH, Shirzadeh A, Samieirad S. What Is the Effect of Pre-Emptive Oral Montelukast on Postoperative Pain Following Bimaxillary Orthognathic Surgery? A Triple-Blind Randomized Clinical Trial. *J Oral Maxillofac Surg* 2022;**80**(2):240–7.
47. Tabrizi R, Tumer K, Shafiei S, Rashad A. Can Use of Rigid Fixation After Consolidation Increase Stability in Cleft Patients Following Distraction Osteogenesis? *J Oral Maxillofac Surg* 2018;**76**(6):1309–15.
48. Tabrizi R, Behnia P, Kavianipour M, Behnia H. Osseous genioplasty versus chin implants: early complications and patient satisfaction. *Int J Oral Maxillofac Surg* 2024;**53**(2):141–5.
49. Tabrizi R. Should we use prophylactic tranexamic acid in orthognathic surgery to decrease blood loss? *Int J Oral Maxillofac Surg* 2018;**47**(11):1504.
50. Jafarian M, Alam M, Shafiei S, Moslemi H, Tabrizi R. Effect of fixation method on intergonial width stability after mandibular setback via bilateral sagittal split osteotomy. *Int J Oral Maxillofac Surg* 2020;**49**(11):1430–4.
51. Bohluli B, Varedi P, Kahali R, Bagheri SC. External Nasal Valve Efficacy Index: a simple test to evaluate the external nasal valve. *Int J Oral Maxillofac Surg* 2015;**44**(10):1240–5.
52. Geramy A, Mazaheri Nazarifar A, Saffar Shahroudi A, Sheikhzadeh S. Oral health-related quality of life following orthognathic surgery for class III correction its relationship with cephalometric changes. *Int J Oral Maxillofac Surg* 2019;**48**(11):1434–9.
53. Yaghmaei M, Ghoujeghi A, Sadeghinejad A, Aberoumand D, Seifi M, Saffarshahroudi A. Auditory changes in patients undergoing orthognathic surgery. *Int J Oral Maxillofac Surg* 2009;**38**(11):1148–53.
54. Baherimoghaddam T, Tabrizi R, Naseri N, Pouzesh A, Oshagh M, Torkan S. Assessment of the changes in quality of life of patients with class II and III deformities during and after orthodontic-surgical treatment. *Int J Oral Maxillofac Surg* 2016;**45**(4):476–85.
55. Zandi M, Heidari A, Jamshidi S, Aminzadeh A, Rajaei S, Mousavi M, et al. Histological evaluation of inferior alveolar nerve injury after osteotomy of mandibular buccal cortex using piezoelectric versus conventional rotary devices: a split-mouth randomised study in rabbits. *Br J Oral Maxillofac Surg* 2021;**59**(5):561–6.
56. Neamati M, Jamali M, Tabrizi R, Barati B. Does maxillary advancement alter vocal acoustic parameters in class III skeletal patients? *Br J Oral Maxillofac Surg* 2021;**59**(10):1287–90.
57. Rezaeetalab F, Kazemian M, Vaezi T, Shaban B. Use of body plethysmography to measure effect of bimaxillary orthognathic surgery on airway resistance and lung volumes. *Br J Oral Maxillofac Surg* 2015;**53**(10):988–90.
58. Ghassemi M, Hilgers RD, Jamilian A, Shokatbakhsh A, Hölzle F, Fritz U, et al. Effect of maxillary advancement on the change in the soft tissues after treatment of patients with class III malocclusion. *Br J Oral Maxillofac Surg* 2015;**53**(8):754–9.
59. Ghassemi M, Hilgers RD, Jamilian A, Hölzle F, Fritz U, Gerressen M, et al. Consideration of effect of the amount of mandibular setback on the submental region in the planning of orthodontic-orthognathic treatment. *Br J Oral Maxillofac Surg* 2014;**52**(4):334–9.
60. Ansari L, Bohluli B, Mahaseni H, Valaei N, Sadr-Eshkevari P, Rashad A. The effect of endotracheal tube cuff pressure control on postextubation throat pain in orthognathic surgeries: a randomized double-blind controlled clinical trial. *Br J Oral Maxillofac Surg* 2014;**52**(2):140–3.
61. Grillo R, Al-Moraissi E, Balel Y, Eshghpour M, Samieirad S, Teixeira RG. Oral and maxillofacial literature from Middle East: a bibliometric analysis and list of top-100 most cited articles. *J Stomatology Oral Maxillofac Surg* 2022;**124**:101293.
62. Grillo R, Al-Moraissi E, Stanbouly D, Samieirad S, Balel Y, Melhem-Elias F. A Global Landscape Analysis of the Impact, Trends, and Dissemination in Oral and Maxillofacial Surgery Research. *J Stomatology Oral Maxillofac Surg* 2024;101802.
63. Grillo R, Balel Y, Brozoski MA, Stanbouly D, Samieirad S, de Oliveira NK. Science mapping analysis of maxillofacial reconstruction over the last four decades. *J Stomatol Oral Maxillofac Surg* 2023;**125**:101701.
64. Samieirad S, Torkzadeh M, Grillo R. A viable method to replace the metal trocar drill guide in the inaccessibility of the long sagittal drill for mandibular fixation in BSSO. *J Stomatol Oral Maxillofac Surg* 2023;**124**(3):101405.
65. Atarbashi-Moghadam S, Latifi F, Atarbashi-Moghadam F, Gholami S. A mandibular lesion four years after orthognathic surgery. *J Stomatol Oral Maxillofac Surg* 2023;**124**(3).
66. Grillo R, Brozoski MA, Samieirad S, Al-Moraissi EA, Cavalcante RCL, Naclério-Homem M da G. Global network mapping research findings on orthognathic surgery and temporomandibular disorder. *J Stomatol*

[Downloaded from wjps.ir on 2026-09-16]

[DOI: 10.66224/wjps.15.1.9]

Oral Maxillofac Surg 2023;**124**(5).
67. Mahmood Hashemi H, Amirzargar R. Can electrocautery of the mandibular condyle effectively treat condylar hyperplasia? *J Craniomaxillofac Surg* 2022;**50**(10):785–9.
68. Mohammadi F, Marashi M, Tavakoli I, Khakbaz O. Effects of oral clonidine premedication on hemodynamic status in bimaxillary orthognathic surgery: A double-blind randomized clinical trial. *J Craniomaxillofac Surg* 2016;**44**(4):436–9.
69. Beshkar M, Hasheminasab M, Mohammadi F. Benign paroxysmal positional vertigo as a complication of orthognathic surgery. *J Craniomaxillofac Surg* 2013;**41**(1):59–61.
70. Ghavimi MA, Taheri Talesh K, Ghoreishizadeh A, Chavoshzadeh MA, Zarandi A. Efficacy of tranexamic acid on side effects of rhinoplasty: A randomized double-blind study. *J Craniomaxillofac Surg* 2017;**45**(6):897–902.
71. Esmaeelinejad M, Motamedi MHK. Effect of Low-Level Laser on the Healing of Neurosensory Disturbance Following Sagittal Split Ramus Osteotomy: A Double-Blind, Randomized Clinical Trial. Iran Red Crescent Med J 2024;**20**(12):1–8.
72. Bayat M, Khobyari MM, Dalband M, Momen-Heravi F. Full mouth implant rehabilitation of a patient with ectodermal dysplasia after orthognathic surgery, sinus and ridge augmentation: a clinical report. *J Adv Prosthodont* 2011;**3**(2):96–100.
73. Sharifi R, Kordi S, Noravesh F, Aghababaei Y, Ramezani M, Maghbooli Z. Bone mineral density and muscle mass in adults with developmental skeletal discrepancies. *BMC Musculoskelet Disord* 2022;**23**(1).
74. Behnia H, Nazerani S, Kalantar Motamedi MH, Dashti H. Comprehensive reconstruction of the maxilla after a failed premaxillary osteotomy: a case report with long-term follow-up. *Ann Plast Surg* 2009;**62**(1):59–62.
75. Attar BM, Far NF. Neurosensory changes of palatal mucousa following Le Fort I osteotomy. *J Res Med Sci* 2009;**14**(5):269–75.
76. Salari B, Nikparto N, Babaei A, Fekrazad R. Effect of delayed photobiomodulation therapy on neurosensory recovery in patients with mandibular nerve neurotmesis following traumatic mandibular fracture: A randomized triple-blinded clinical trial. *J Photochem Photobiol B* 2022;**232**.
77. Haghighat A, Khosrawi S, Tamizifar A, Haghighat M. Does Low-Level Laser Photobiomodulation Improve Neurosensory Recovery After Orthognathic Surgery? A Clinical Trial With Blink Reflex. *J Oral Maxillofac Surg* 2021;**79**(3):685–93.
78. Rahpeyma A, Khajehahmadi S. Accessory mental foramen and maxillofacial surgery. *J Craniofac Surg* 2018;**29**(3):E216–7.
79. Bagheri S, Shokuhifar M, Moradinejad M, Razavi M, Hashemi Ashtiani A, Baratvand B, et al. Associations between the 3D position of the mental foramen with sagittal skeletal relationships (classes I, II, and III) and vertical facial growth patterns (normal, long, and short faces) in different ages and sexes: a retrospective cohort study of 360 CBCTs. *BMC Oral Health* 2023;**23**(1).
80. Nadjmi N, Tehranchi A, Azami N, Saedi B, Mollemans W. Comparison of soft-tissue profiles in Le Fort I osteotomy patients with Dolphin and Maxilim softwares. *Am J Orthod Dentofac Orthoped* 2013;**144**(5):654–62.
81. Sabour S. 3D virtual surgical planning for maxillary positioning and orientation in orthognathic surgery: Methodological issues on accuracy and agreement. *Orthod Craniofac Res* 2021;**24**(2):299–300.
82. Mohammad-Rahimi H, Nadimi M, Rohban MH, Shamsoddin E, Lee VY, Motamedian SR. Machine learning and orthodontics, current trends and the future opportunities: A scoping review. *Am J Orthod Dentofac Orthoped* 2021;**160**(2):170-192.e4.
83. Afzoon S, Ghorbani F, Hasani M. Evaluation of the mandibular condyles trabecular structure in patients with severe class III pattern: a computed tomography (CT) fractal analysis study. *Sci Rep* 2023;**13**(1).
84. Grillo R, Lucamba A, Sohal KS, Adebayo ET, Khemis M, Teixeira RG. Evolution of African Oral and Maxillofacial Literature Through Years: A Bibliometric Analysis. *J Maxillofac Oral Surg* 2023;1–8.
85. Grillo R. Orthognathic Surgery: A Bibliometric Analysis of the Top 100 Cited Articles. *J Oral Maxillofac Surg* 2021;**79**:2339–49.

[Downloaded from wjps.ir on 2026-09-16]

[DOI: 10.66224/wjps.15.1.9]