

DAFTAR PUSTAKA

- Abhinav, R.P., Selvarasu K, Maheswari GU, and Taltia AA., 2019. The Patterns and Etiology of Maxillofacial Trauma in South India. *Ann Maxillofac Surg.*, 9(1), pp.114-117.
- Abotaleb, B.M., Al-Moraissi, E., Zhiqiang, W., Ping, C., Yongjie, K., Alkebsi, K., and Lan, Y., 2018. A Detailed Analysis of Mandibular Fractures Epidemiology, Treatment and Outcomes: A 5-Year Retrospective Study, Gansu Province-China. *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology*, 30(2), pp.197-205
- Açil, Y., Heitzer, M.A., Gülses, A., Naujokat, H., Podschun, R., Wiltfang, J. and Flörke, C., 2017. The correlation between periodontal health status and susceptibility to infections associated with craniomaxillofacial osteosynthesis plates. *Journal of Cranio-Maxillofacial Surgery*, 45(11), pp.1868-1874.
- Acumed (n.d.). 2024. *OsteoMed® MFx™ Rigid Fixation System - Product Information and Instructions for Use*. Acumed LLC. Tersedia di: <https://www.acumed.net/ifu> (Diakses 2 Mei 2025 pukul 19.30).
- Afroz, P.N., Bykowski, M.R., James, I.B., Daniali, L.N., and Clavijo-Alvarez, J.A., 2015, The Epidemiology of Mandibular Fractures in the United States, Part 1: A Review of 13,142 Cases from the US National Trauma Data Bank, *J. Oral Maxillofac. Surg.*, 73: 2361-2366.
- Aggarwal, S., Singh, M., Modi, P., Walia, E., and Aggarwal, R., 2017. Comparison of 3D Plate and Locking Plate In Treatment of Mandibular Fracture-A Clinical Study. *Oral and Maxillofacial Surgery*, 21(4), pp.383-390.
- Agnihotri, A., Prabhu, S., and Thomas, S., 2014, A comparative analysis of the efficacy of cortical screws as lag screws and miniplates for internal fixation of mandibular symphyseal region fractures: a randomized prospective study, *Int J Oral Maxillofac Surg.*, 43:22-8.
- Ahmed, A., Wu, E., Sarai, R., Williams, R., and Breeze, J., 2022. Potentially Modifiable Patient Factors in Mandible Fracture Complications: A Systematic Review and Meta-Analysis. *British Journal of Oral and Maxillofacial Surgery*, 60, pp.266-270.
- Ahmed, R., Muthusekhar, M.R., and D. P., 2021. Incidence of Plate Removal in Maxillofacial Region: A Single Centered Retrospective Study. *Biosc. Biotech. Res. Comm. Special Issue*, 14(10), pp.109-114.
- Aires, A., Baretto, A.B., and Lemsaddek, T.S. 2021. Antimicrobial Effects of Essential Oils on Oral Microbiota Biofilms: The Toothbrush In Vitro Model, *Antibiotics*, 10(1), 21-28
- Aires, C.C.G., Araújo, H.T., Souza, R.R.L., Santos, A.J.F.D., Vasconcellos, R.J.H., and Vasconcelos, B.C. D.E., 2023. Relationship between the Use and Types of Helmets with Facial Injuries - A Prospective Study. *Revista do Colegio Brasileiro de Cirurgioes*, 49, pp.e20223387.
- Al-Affari, M.A., Tawfik, B.E., and Feky, A.H., 2019. Assessment of Internal Fixation of Parasymphiseal Mandibular Fractures Using One Miniplate with Bridle Wire, *Al-Azhar Journal of Dental Science*, 22(3), pp.233-240.

- Albert, M., Muthusekhar, M.R., and Selvarasu, K., 2021. Miniplate Removal Post-Open Reduction Internal Fixation: A Retrospective Analysis. *Journal of Contemporary Issues in Business and Government*, 27(2), pp.1990-2204.
- Alem, A., and Mohsen, C., 2020. Atomic Force Microscope Surface Roughness Analysis of Surface Treated Ceramics, *Open Access Macedonian Journal of Medical Sciences*, 8(D), pp.134—138
- Allizond, V., Comini, S., Cuffini, A.M., and Banche, G., 2022, Current Knowledge on Biomaterials for Orthopedic Applications Modified to Reduce Bacterial Adhesive Ability, *Antibiotics*, 11(529): 1-24.
- Allularkar, S., Patil, S.K., Joshi, U.M., Shah, U.K., Thakur, N., and Mangalgi, A., 2016, Surface analysis of titanium maxillofacial plates and screws retrieved from patients, *J Dent Specialities*, (2):167-173
- Al-Moraissi, E.A., 2015. One Miniplate Compared with Two in The Fixation of Isolated Fractures of The Mandibular Angle. *Br J Oral Maxillofac Surg*, 53(8), pp.690-698.
- Alnufaiy, B., Lambarte, R., and Al-Hamdan, K. (2020). The Osteogenetic Potential of Chitosan Coated Implant: An In Vitro Study. *Journal of Stem Cells and Regenerative Medicine*, 16(2), 44-48.
- Alva-Murillo, N., López-Meza, J.E., and Ochoa-Zarzosa, A., 2014, Nonprofessional Phagocytic Cell Receptors Involved in *Staphylococcus aureus* Internalization*, *Biomed Res Int*.*1-9.
- Amarista, Rojas, F. J., Bordoy, Soto, M. A., Cachazo, M., Dopazo, J. R., and Vélez, H., 2017. The Epidemiology of Mandibular Fractures in Caracas, Venezuela: Incidence and Its Combination Patterns. *Dental traumatology: official publication of International Association for Dental Traumatology*, 33(6), pp427-432.
- Amjad, S., Kalim, A.M.D., Ahmad, S.S., and Rahman, T., 2020. Comparative Study of Outcomes between Locking Plates and Three-Dimensional Plates in Mandibular Fractures, *Natl J Maxillofac Surg*, 11(2), pp.263-269.
- An, Y.H. and Friedman, R.J. (1998) 'Mechanisms of bacterial adhesion to biomaterial surfaces', *Journal of Biomedical Materials Research*, 43(3), pp. 338-348.
- André, A.C., Laborde, M. and Marteyn, B.S., 2022. The battle for oxygen during bacterial and fungal infections. *Trends in Microbiology*, 30(7), pp.643–653.
- Antic, S., Saveljic, I., Nikolic, D., Jovicic, G., Filipovic, N., Rakocevic, Z. and Djuric, M., 2016. *Does the presence of an unerupted lower third molar influence the risk of mandibular angle and condylar fractures?* *International Journal of Oral and Maxillofacial Surgery*, 45(6), pp.588–592.
- AO Foundation, 2025. *ORIF - One load-sharing plate for angle, simple mandible fracture*. [online] AO Surgery Reference. Available at: <https://surgeryreference.aofoundation.org/cmef/trauma/mandible/angle-simple/orif-one-load-sharing-plate?searchurl=/searchresults#plate-fixation-along-the-external-oblique-ridge-option-b> (Diakses pada 2 Mei 2025 pukul 20.00 WIB).

- Aramanadka, C., Kamath, A.T., Srikanth, G., Pai, D., Singla, N., Daundiya, S., and Desai, A., 2021. Hardware Removal in Maxillofacial Trauma : *A Retrospective Study*, *Hindawi The scientific Journal*, 21, pp.1-5.
- Arciola, C. R., Campoccia, D., and Montanaro, L., 2018. Implant Infections: Adhesion, Biofilm Formation, and Immune Evasion. *Nature reviews. Microbiology*, 16(7), pp.397-409.
- Armond, A. C. V., Martins, C. C., Glória, J. C. R., Galvão, E. L., Dos Santos, C. R. R., and Falci, S. G. M., 2017. Influence of Third Molars in Mandibular Fractures. Part 2: Mandibular Condyle-A Meta-Analysis. *International Journal of Oral And Maxillofacial Surgery*, 46(6), pp.716-729.
- Asl, H. G., and Alsarani, A. 2020. In Vitro Comparison of Commercial and Ultrafine-Grained Titanium Osteosynthesis Miniplates Used on Mandibular Fractures. *Dental and Medical Problems*, 57(4), pp.351-358.
- ASTM International, 2022a. Standard Specification for Wrought Titanium-6Aluminum-4Vanadium ELI (Extra Low Interstitial) Alloy for Surgical Implant Applications (UNS R56401). ASTM F136-21. Tersedia di: <https://www.astm.org/f0136-21.html> (Diakses 2 Mei 2025 pukul 20.05 WIB).
- ASTM International, 2022b. Standard Specification for Unalloyed Titanium for Surgical Implant Applications (UNS R50250, R50400, R50550, R50700). ASTM F67-13. Tersedia di: <https://www.astm.org/f0067-13.html> (Diakses 2 Mei 2025 pukul 20.10 WIB)
- Avci, T., Omezli, M.M., and Torul, D., 2022. Investigation of the Biomechanical Stability of Cfr-PEEK in the Treatment of Mandibular Angulus Fractures by Finite Element Analysis. *J. Stomatol Oral Maxillofac Surg.*, 123, pp.610-165.
- Balaji, S.M., 2018, *Textbook of Oral and Maxillofacial Surgery*, 3rd ed, Elsevier, New Delhi.
- Balasundram, S., Kovilpillai, F.J., Royan, S.J., Ma, B.C., Gunarajah, D. R., and Adnan, T. H., 2020. A 4-Year Multicenter Audit of Complications Following ORIF Treatment of Mandibular Fractures. *J. Maxillofac. Oral Surg.*, 19(2), pp.289-297.
- Bandyopadhyay, B., Ray, A., and Ghorui, T., 2020. Comparative Evaluation Between 2mm Locking and 2mm Non-Locking Miniplate System for Open Reduction and Internal Fixation of Mandibular Parasymphysis Fracture, *Archives of Clinical and Medical Case Reports*, 4(2020), pp.69-383.
- Bang, K.O., Pandilwar, P.K., Shenoi, S.R., Budhraj, N.J., Ingole, P., Kolte, V.S., and Garg, A., 2018. Evaluation of Teeth in Line of Mandibular Fractures Treated with Stable Internal Fixation. *J Maxillofac Oral Surg.*, 17(2), pp.164-168.
- Barrachina, G.R., Montiel-Company, J. M., García-Sanz, V., Almerich-Silla, J. M., Paredes-Gallardo, V., and Bellot-Arcís, C., 2020. Titanium plate removal in orthognathic surgery: prevalence, causes and risk factors. A systematic literature review and meta-analysis, *International Journal of Oral and Maxillofacial Surgery*, 49(6), pp. 770-778.

- Basawaraj, B., Biradar, S., Malhan, B., Arvind, M. S., and Arora, M., 2017. Oral Biofilms "A Review". *International Journal of Oral Health Dentistry*, 3(3), pp.142-148.
- Batbayar, E. O., Dijkstra, P. U., Bos, R. R. M., and Van Minnen, B., 2019. Complications of Locking and Non-Locking Plate Systems in Mandibular Fractures. *International Journal of Oral and Maxillofacial Surgery*, 48(9), pp.1213-1226.
- Ben-Nissan, B., Milev, A. and Vago, R. (2011) 'Morphology of sol-gel derived nano-coated titanium implants', *Biomaterials*, 25(20), pp. 4971-4975.
- Benoit DSW, Sims KR Jr, and Fraser D. 2019. Nanoparticles for Oral Biofilm Treatments. *ACS Nano*;13:4869-75
- Berger, D., Rakhamimova, A., Pollack, A., and Loewy, Z., 2018. Oral Biofilms: Development, Control, and Analysis. *High-throughput*, 7(3), pp.24.
- Bernard L., Arvieux, C., Brunschweiler, B., Touchais, S., Ansart, S., J.-P. Bru, Oziol, E., Boeri C., Gras, G., Druon, J., Rosset, P., Senneville, E., Bentayeb, H., Bouhour, D., Le Moal, G., Michon, J., Aumaître, H., Forestier, E., Laffosse, J.-M., Begué, T., Chirouze, C., Dauchy, F.-A., Devaud, E., Martha, B., Burgot, Boutoille, D., Stindel, E., Dinh, A., Bemer, P., Giraudeau, B., Issartel, B., Caille, and A., 2021, Antibiotic Therapy for 6 or 12 Weeks for Prosthetic Joint Infection, *N Engl J Med*, 384:1991-2001.
- Bhatt, V., Chhabra, P., and Dover, M. S. (2005). Removal of miniplates in maxillofacial surgery: A follow-up study. *Journal of Oral and Maxillofacial Surgery*, 63(6), 756-760.
- Bicsák, Á., Abel, D., Tack, L., Smponias, V., Hassfeld, S., and Bonitz, L., 2021. Complications after Osteosynthesis of Craniofacial Fractures-An Analysis from The Years 2015-2017. *Oral and Maxillofacial Surgery*, 25(2), pp.199-206.
- Biscaks, A., Abel, D., Berbuesse, A., Hassfeld, S., and Bonitz, L., 2022. Evaluation of Mandibular Fractures in a German Nationwide Trauma Center Between 2015 and 2017. *J. Maxillofac. Oral Surg.*, 21(3), pp.904-910.
- Bissinger, O., Biermann, L., Kolk, A., Wolff, K.D., and Gotz, C., 2020. Osteosynthesis Plate Removal: Patient Benefits and Burdens. *Appl. Sci*, 10, 1810. <https://www.mdpi.com/journal/applsci>.
- Bobrowski, A. N., Sonogo, C. L., and Chagas Junior, O. L., 2013. Postoperative Infection Associated with Mandibular Angle Fracture Treatment in The Presence of Teeth on The Fracture Line: A Systematic Review and Meta-Analysis. *International journal of oral and maxillofacial surgery*, 42(9), pp.1041-1048.
- Boffano, P., Kommers, S.C., Karagozoglu, K.H., and Forouzanfar, T., 2014, Aetiology of maxillofacial fractures: A review of published studies during the last 30 years, *Br. J. Oral Maxillofac Surg.*, 52: 901-906.
- Bohner, L., Beiglboeck, F., Schwipper, S., Lustosa, R. M., Pierna Marino Segura, C., Kleinheinz, J., and Jung, S., 2020. Treatment of Mandible Fractures Using a Miniplate System: A Retrospective Analysis. *Journal of clinical medicine*, 9(9), pp.2922.

- Boljevic T, Vukcevic B, Pesic Z, and Boljevic A., 2019. The Quality of Life of Patients with Surgically Treated Mandibular Fractures and the Relationship of the Posttraumatic Pain and Trismus with the Postoperative Complications: A Prospective Study. *Medicina*, 55(4), pp.109.
- Bollen, C.M., Lambrechts, P., and Quirynen, M., 1997, Comparison of oral hard materials surface roughness to the threshold surface roughness for bacterial plaque retention: A literature review, *Dent Mater*, 13:258-269.
- Bonanthaya, K., Panneerselvam, E., Manuel, S., Kumar, V.V., and Rai, A., 2021, *Oral and Maxillofacial Surgery for the Clinician*, Springer, New Dehli, India.
- Booth, P.W., Eppley, B.L., and Schmelzeisen, R., 2012, *Maxillofacial Trauma And Esthetic Facial Reconstruction*, Saunders-Elsevier Inc., St.Louis-Missouri.
- Bowen. W.H, Burne R.A., Wu H., and Koo H., 2018. Oral biofilms: pathogens, matrix, and polymicrobial interactions in microenvironments. *Trends Microbiol*;26:229- 42.
- Brown, J. S., Khan, A., Wareing, S., and Schache, A. G., 2022. A New Classification of Mandibular Fractures. *International Journal of Oral and Maxillofacial Surgery*, 51(1), 78-90.
- Brucoli, M., Boffano, P., Romeo, I., Corio, C., Benech, A., Ruslin, M., Forouzanfar, T., Starch-Jensen, T., Rodriguez-Santamarta, T., de Vicente, J. C., Snäll, J., Thorén, H., Aničić, B., Konstantinovic, V. S., Pechalova, P., Pavlov, N., Daskalov, H., Doykova, I., Kelemith, K., Tamme, T., and Dediol, E., 2020. Epidemiology of maxillofacial trauma in the elderly: A European multicenter study, *Journal of stomatology, oral and maxillofacial surgery*, 121(4), pp.330-338.
- Bruneau, S., Courvoisier, D.S., and Scolozzi, P., 2017. Facial Nerve Injury and Other Complications Following Retromandibular Subparotid Approach for the Management of Condylar Fractures, *J Oral Maxillofac Surg.*, pp.1-7.
- Budiharja, A. S., and Rahmat, M., 2018, Trauma Oral dan Maksilofasial, Vol. 2, Penerbit Buku Kedokteran EGC, Jakarta, 33-100.
- Cahill, T.J., Gandhi, R., Allori, A.C., Marcus, J.R., Powers, D., Erdmann, D., Hollenbeck, S.T., and Levinson, H., 2015. Hardware Removal in Craniomaxillofacial Trauma: A Systematic Review of the Literature and Management Algorithm. *Ann Plast Surg.*, 75(5), pp.572-8. doi: 10.1097/SAP.000000000000194. PMID: 25393499; PMCID: PMC4888926.
- Campoccia, D., Testoni, F., Ravaoli, S., Cangani, I., maso, A., Speziale, P., Montanaro, L., Visai, L., and Arciola, C.R., 2016,. Orthopedic implant infections: incompetence of *Staphylococcus epidermidis*. *Staphylococcus lugdunensis* and *Enterococcus faecalis* invade osteoblasts. *J. Biomed. Mater. Res. A*, 104: 788-801.
- Canzi, G., De Ponti, E., Filippi, A., Bozetti, A., Sozzi, D., and Novelli, G., 2022, The burden of facial trauma on mortality in patients with multiple injuries: A single-centre analysis of 1862 motorcycle accidents, *J Cranio Maxillofac Surg*, 50(2): 146-149.

- Cavalu, S., Antoniac, I.V., Mohan, A., Bodog, F., Doicin, C., Mates, I., Ulmeanu, M., Murzac, R. and Semenescu, A. (2020) 'Nanoparticles and nanostructured surface fabrication for innovative cranial and maxillofacial surgery', *Materials*, 13(23), p. 5391.
- Cha S, and Park YS. 2014. Plasma in dentistry. *Clin Plasma Med* 4;2:4-10.
- Chamrad, J., Marcián, P. and Cizek, J., 2021. Beneficial osseointegration effect of hydroxyapatite coating on cranial implant-FEM investigation. *Plos one*, 16(7).
- Chandki, R., Banthia, P., and Banthia, R., 2017, Biofilms: a microbial home. *J Indian Soc Periodontol*;15:111-14.
- Chen, C. L., Zenga, J., Patel, R., and Branham, G., 2018. Complications and Reoperations in Mandibular Angle Fractures. *JAMA Facial Plastic Surgery*, 20(3), pp.238-243.
- Chessa, D., Ganau, G., Spiga, L., Bulla A., and Mazzarello, V., Campus G.V., rubino, S., 2016, *Staphylococcus aureus* and *Staphylococcus epidermidis* Virulence Strains as Causative Agents of Persistent Infections in Breast Implants, *Plus One*, 11(1): 1-15.
- Choi, S.H., Gu, J.H., and Kang, D.H., 2016. Analysis of Traffic Accident-Related Facial Trauma. *J Craniofac Surg.*, 27(7), pp.1682-1685.
- Chourifa, H., Bouloussa, H., Migonney, V. and Falentin-Daudré, C., 2019. Review of titanium surface modification techniques and coatings for antibacterial applications. *Acta biomaterialia*, 83, pp.37-54.
- Clark, D., Nakamura, M., Miclau, T. and Marcucio, R., 2017. Effects of aging on fracture healing. *Current Osteoporosis Reports*, 15(6), pp.601–608.
- Cochis, A., Rimondini, L. and Moroni, L. (2014) 'Antibacterial and osteoconductive properties of nano-coated titanium', *Frontiers in Bioengineering and Biotechnology*, 2, pp. 1-10.
- Coskunes, F. M., Kan, B., Mutlu, I., Cilasun, U., and Celik, T. (2015). Evaluation of prebent miniplates in fixation of Le Fort I advancement osteotomy with the finite element method. *Journal of Cranio-Maxillofacial Surgery*, 43(9), 1505-1510.
- Costa, B., Martínez-de-Tejada, G., Paula A. C., Martins, C.L., and Costa, F., 2021, Antimicrobial Peptides in the Battle against Orthopedic Implant-Related Infections: A Review, *Pharmaceutics*, 13(11): 1918-1932.
- Cousin, A.-S., Bouletreau, P., Giaï, J., Ibrahim, B., Louvrier, A. and Sigaux, N., 2020. Severity and long-term complications of surgical site infections after orthognathic surgery: a retrospective study. *Scientific Reports*, 10, p.12015.
- Depypere, M., Morgenstern, M., Kuehl, R., et al., 2020. Pathogenesis and management of fracture-related infection. *Injury*, 51(Suppl 2), pp.S59-S64.
- Crémet, L., Broquet, A., Jacqueline, C., Chaillou, C., Asehnoune, K., Corvec, S., and Caroff, N., 2016, Innate immune evasion of *Escherichia coli* clinical strains from orthopedic implant infections, *Eur. J. Clin. Microbiol. Infect. Dis.*, 35, 993-999
- Cural, Ü., Atalay, B., and Yildirim, M. S., 2018. Comparison of Mechanical Stabilization of the Mandibular Angulus Fracture Fixation, With Titanium

- Plates and Screws, Resorbable Plates and Screws, and Bone Adhesives. *The Journal of craniofacial surgery*, 29(7), pp.1780-1787.
- Curtis, W. and Horswell, B.B., 2013, Pan Facial Fractures: An Approach to Management. *Oral Maxillofac Surg Clin N Am.*, 25 : 649-60.
- Czerwinski, M., Parker, W.L., Correa, J.A., and Williams, H.B., 2008. Effect of Treatment Delay on Mandibular Fracture Infection Rate, *Plast Reconstr Surg.*, 122(3), pp.881-885.
- Daniels, J.S., Albakry, I., Braimah, R.O., and Samara, M.I., 2021. Is the Routine Removal of Titanium Plates and Screws Following Miniplate Osteosynthesis of Maxillofacial Bone Fractures Justified? A Fifteen-Year Experience in a Maxillofacial Centre, Saudi Arabia. *Cranio-maxillofacial Trauma and Reconstruction Open*, 6. doi:10.1177/24727512211065268
- Dapunt, U., Hänsch, G.M., and Arciola, C.A., 2016, Innate Immune Response in Implant-Associated Infections: Neutrophils against Biofilms, *Materials (Basel)*, 9(5): 1-10.
- Datarkar, A., Tayal, S., Thote, A., and Galie, M., 2019, An in-vitro evaluation of a novel design of miniplate for fixation of fracture segments in the transition zone of the parasymphysis-body region of the mandible using finite element analysis, *J. Cranio-Maxillofac. Surg.*, 47: 99-105.
- Dawoud, B.E.S., Kent, S., Henry, A., Wareing, J., Chaudry, H., Kyzas, P., and Kyzas, P., 2021. Use of Antibiotics in Traumatic Mandibular Fractures: A Systematic Review and Meta-Analysis, *Br J Oral Maxillofac Surg.*, 59(10), pp.1140-1147.
- De Medeiros, R.C., de Moura, A.L., Sawazaki, R., and Fernandes Moreira, R.W., 2015, Comparative in vitro mechanical evaluation of techniques using a 2.0 mm locking fixation system for simulated fractures of the mandibular body, *J. Cranio-Maxillofac. Surg.*, 43: 302-305.
- de Mesy Bentley, K. L., Tombreta, R., Nishitani, K., Bello-Irizarry, S.N., Ninomiya, M., Zhang, L., Chung, H.I., McGrath, J.L., Daiss, J.L., Awad, H.a., Kates, S.L., and Schwarz, E.M., 2017, Evidence of *Staphylococcus aureus* deformation, proliferation, and migration in canaliculi of live cortical bone in murine models of osteomyelitis. *J. Bone Miner. Res.* 32, 985-990
- De Oliveira, J.C.S., Moura, L.B., de Menezes, J.D.S., Gabrielli, M.A.C., Pereira Filho, V.A., and Hochuli-Vieira, E., 2018, Three-dimensional strut plate for the treatment of mandibular fractures: A systematic review, *Int. J. Oral Maxillofac. Surg.*, 47: 330-338.
- De Pace, R., Molinari, S., Mazzoni, E. and Perale, G., 2022. Bone regeneration: A review of current treatment strategies. *Journal of Clinical Medicine*
- DePuy Synthes. 2023. *MatrixMANDIBLE™ Plate and Screw System: Surgical Technique*. [pdf] DePuy Synthes Companies. Tersedia di: <http://emea.depuyssynthes.com/hcp/reprocessing-care-maintenance> (Diakses 2 Mei 2025 pukul 20.30).
- Devendrappa, M.C., Kulkarni, M.D., Haidry, N., Kulkarni, P., Verma, F., and Pawar, D.A., 2021, Evaluation of surface changes of stainless steel miniplates and screws following retrieval from maxillofacial trauma and

- orthognathic surgery patients: A comparative study. *Natl J Maxillofac Surg*, 12(3):357-360.
- Dibartola, A. C., Swearingen, M. C., Granger, J. F., Stoodley, P., and Dusane, D. H., 2017. Biofilms in Orthopedic Infections: A Review of Laboratory Methods. *APMIS*, 125(4), pp.418-428.
- Do T, Devine D, and Marsh P.D., 2018, Oral Biofilms: Molecular Analysis, Challenges, and Future Prospects in Dental Diagnostics, *Clin Cosmet Investig Dent* ;5:11-19.
- Doll, K., Jongsthaphongpun, K. L., Stumpp, N. S., Winkel, A., and Stiesch, M., 2016. Quantifying Implant-Associated Biofilms: Comparison of Microscopic, Microbiologic and Biochemical Methods. *Journal of Microbiological Methods*, 130, pp.61-68.
- Donaldson, K., Murphy, F. A., Duffin, R. and Poland Asbestos, C. A., 2010, Carbon nanotubes and the pleural mesothelium: a review of the hypothesis regarding the role of long fibre retention in the parietal pleura, inflammation and mesothelioma. *Part. Fibre Toxicol.* 7, 5:1-12..
- Donlan RM. 2018. Biofilms: microbial life on surfaces. *Emerg Infect Dis*;8:881-90.
- Duttenhoefer, F., Probst, F.A., Vach, K., Cornelius, C.-P., Zens, M., Schmelzeisen, R., and Metzger, M.C., 2017, Clinical analysis of Matrix-mandible Preformed Reconstruction Plate design, *J. Cranio-Maxillofac. Surg.*, 45: 1521-1525.
- Ehrenfeld, M., Manson, P.N., and Prein J., 2012, *Principles of Internal Fixation of the Craniomaxillofacial Skeleton Trauma and Orthognathic Surgery*. Switzerland : AO Fondation
- Elias, C.N., Lima, J.H.C., Valiev, R. and Meyers, M.A. (2008) 'Biomedical applications of titanium and its alloys', *JOM*, 60(3), pp. 46-49. <https://doi.org/10.1007/s11837-008-0031-1>
- Ellis E., 3rd., 2013. Open Reduction and Internal Fixation of Combined Angle and Body/Symphysis Fractures of The Mandible: How Much Fixation is Enough?. *Journal of Oral and Maxillofacial Surgery: Official Journal of the American Association of Oral and Maxillofacial Surgeons*, 71(4), pp.726-733.
- Ellis, E. 3rd., and Graham, J., 2002, Use of a 2.0-mm locking plate/screw system for mandibular fracture surgery, *J Oral Maxillofac Surg.*, 60:642-5.
- Elsayed, S. A., Mohamed, F. I., and Khalifa, G. A., 2015. Clinical Outcomes of Three Different Types of Hardware for the Treatment of Mandibular Angle Fractures: A Comparative Retrospective Study. *International Journal of Oral and Maxillofacial Surgery*, 44(10), pp.1260-1267.
- Elsayed, S.A., Abdullah, A.A.B., Odeh, N.D., and Altaweel, A.A., 2021. Intraoral Wound Dehiscence After Open Reduction Internal Fixation of Mandibular Fractures: A Retrospective Cohort Study. *Index Wounds*, 33(3), pp.60-64.
- Elsayed, S.A.H., Elsayed, E.H., and Altaweel, A.A., 2020, Stabilization of anterior mandibular fracture using different osteosynthesis devices: peri-operative clinical notes, *Oral Maxillofac Surg.* 32:389-49.

- El-Sherif, H.M., Ali, S., Talaat, M., and Mubarak, F., 2022. Stability and Clinical Outcomes of Angle Fracture Fixation Using Sagittal Split Plate (SSOP) Versus Two Miniplates: Randomized Clinical Trial, *J Maxillofac Oral Surg*
- Erdogan, M.M., Simsek, T., and Ugur, L., 2022. Using Single Miniplate in Mandibular Angle Fractures: Finite Elements Analysis, **Journal of Medical and Biological Engineering.*, *42(9), pp.479-487.
- Esteban, J., and Barena, E.G., 2021. An Update About Molecular Biology Techniques to Detect Orthopaedic Implant-Related Infections. *General Orthopaedics EOR*, 6, pp.2058-5241.
- Falci, S. G. M., de Souza, G. M., Fernandes, I. A., Galvão, E. L., and Al-Moraissi, E. A., 2021. Complications After Different Methods for Fixation of Mandibular Angle Fractures: Network Meta-Analysis of Randomized Controlled Trials. *International Journal of Oral and Maxillofacial Surgery*, 50(11), pp.1450-1463.
- Fani, M., Samieirad, S., Shooshtari, Z., Jamali, M., and Tohidi, E., 2020. Is Mini-Plate Removal Necessary for Oral and Maxillofacial Surgery Patients? A Five-Year Case-Control Study. *Front Dent.*, 17(7), pp.1-6. doi: 10.18502/fid.v17i1.3967.
- Fernandes, I. A., Lopes, A. B. S., Fonseca, P. G., da Silva Torres, A., Rodrigues, A. B., Galvão, E. L., and Falci, S. G. M., 2021. Comparison Between Erich Arch Bars and Intermaxillary Screws in Maxillofacial Fractures Involving the Dental Occlusion: A Meta-Analysis, *International Journal of Oral and Maxillofacial Surgery*, 50(1), pp.83-95.
- Fonseca, R.J., 2017, *Oral and Maxillofacial Surgery: 3rd ed.* Elsevier Health Sciences.
- Fox, A.J., and Kellman, R.M., 2003. Mandibular Angle Fractures: Two-Miniplate Fixation and Complications. *Archives of facial plastic surgery*, 5(6), pp.464-469.
- Fracture patterns and causes in the craniofacial region: an 8-year review of 2076 patients. *Maxillofac Plast Reconstr Surg.*, 40(1) pp. 29. doi: 10.1186/s40902-018-0168-y. PMID: 30370262; PMCID: PMC6186527.
- Fürst, M. M., Salvi, G. E., Lang, N. P., and Persson, G. R., 2007, Bacterial colonization immediately after installation on oral titanium implants. *Clinical Oral Implants Research*, 18(4), 501-508.
- Gareb, B., van Bakelen, N. B., Dijkstra, P. U., Vissink, A., Bos, R. R. M., and van Minnen, B., 2021. Trust But Verify Response to "Titanium Plate Removal in Orthognathic Surgery: Prevalence, Causes and Risk Factors. A Systematic Literature Review and Meta-Analysis, *International Journal of oral and maxillofacial surgery*, 50(5), pp.707-708.
- Gareb, B., Van Bakelen, N.B., Dijkstra, P.U., Vissink, A., Bos, R.R.M., and Van Minnen, B., 2019. Biodegradable Versus Titanium Osteosynthesis in Maxillofacial Traumatology: A Systematic Review With Meta-Analysis and Trial Sequential Analysis, *Int J Oral Maxillofac Surg*.
- Gareb, B., Van Bakelen, N.B., Vissink, A., Bos, R.R. and Van Minnen, B., 2022. Titanium or Biodegradable Osteosynthesis in Maxillofacial Surgery? In Vitro and In Vivo Performances. *Polymers*, 14(14), pp.2782.

- Garip, M., Van Dessel, J., Grosjean, L., Politis, C. and Bila, M. (2021). The impact of smoking on surgical complications after head and neck reconstructive surgery with a free vascularised tissue flap: a systematic review and meta-analysis. *British Journal of Oral and Maxillofacial Surgery*, 59, e79-e98. <https://doi.org/10.1016/j.bjoms.2020.07.020>
- Geetha, M., Singh, A.K., Asokamani, R. and Gogia, A.K. (2009) 'Ti based biomaterials, the ultimate choice for orthopaedic implants - A review', *Progress in Materials Science*, 54(3), pp. 397-425. <https://doi.org/10.1016/j.pmatsci.2008.06.004>
- Gheibollahi, H., Aliabadi, E., Khaghaninejad, M.S., Mousavi, S., and Babaei, A., 2021. Evaluation of Bite Force Recovery in Patients with Maxillofacial Fracture, *J Craniomaxillofac Surg.*, 5182(21), pp.1-5.
- Ghilini, F., Fagali, N., Pissinis, D.E., Benítez, G. and Schilardi, P.L., 2021. Multifunctional titanium surfaces for orthopaedic implants: Antimicrobial activity and enhanced osseointegration. *ACS Applied Bio Materials*, 4(8), pp.6451-6461.
- Gibson, A.C., Merrill, T.B., and Boyette, J.R., 2023. Complications of Mandibular Fracture Repair. *Otolaryngol Clin North Am*.
- Gjerde, K. (1994) 'Host responses to titanium wear debris', *Acta Orthopaedica Scandinavica*, 65(1), pp. 1-3.
- Gonzales, D. M., Spagnol, G., Sverzut, C. E., and Trivellato, A. E., 2017. In Vitro Evaluation of the Resistance of Three Types of Fixation to Treat Fractures of The Mandibular Angle, *The British journal of oral and maxillofacial surgery*, 55(2), pp.136-140.
- Gottsauer, M., Reichert, T., Koerdt, S., Wieser, S., Klingelhoefter, C., Kirschneck, C., Hoffmann, J., Ettl, T., and Ristow, O., 2021, Comparison of additive manufactured models of the mandible in accuracy and quality using six different 3D printing systems, *J. Cranio- Maxillofac. Surg.*, 49: 855-866.
- Grillo, R., Pedrosa, G., and Teixeira, R., 2020. A New Concept: The Use of Protective Hydrogel in Maxillofacial Surgery - Case Report. *Prosthodontics*. 70, pp.363-368.
- Gualtieri, M., Pisapia, F., Fadda, M. T., Priore, P., and Valentini, V., 2021. Mandibular Fractures Epidemiology and Treatment Plans in the Center of Italy: A Retrospective Study. *The Journal of Craniofacial Surgery*, 32(4), pp.e346-e349.
- Guastaldi, F. P., Vieira, E. H., and Guastaldi, A. C., 2014. Biomechanical Study in Polyurethane Mandibles of Different Metal Plates and Internal Fixation Techniques, Employed in Mandibular Angle Fractures. *The Journal of Craniofacial Surgery*, 25(6), 2246-2252.
- Gutta, R., Tracy, K., Johnson, C., James, L.E., Krishnan, D.G., and Marciani, R.D., 2014. Outcomes of Mandible Fracture Treatment at an Academic Tertiary Hospital: A 5-Year Analysis. *Journal of Maxillofacial Surgery*, 72(3): 550-558.
- Haji, S.H., Ganjo, A.R., Faraj, T.A., Fatah, M.H. and Smail, S.B. (2024) 'The enhanced antibacterial and antibiofilm properties of titanium dioxide

- nanoparticles biosynthesized by multidrug-resistant *Pseudomonas aeruginosa*', *BMC Microbiology*, 24(379).
- Hallab, N.J., Bundy, K.J., O'Connor, K. and Moses, R.L. (2001) 'Cell-induced corrosion of orthopedic implants', *Journal of Biomedical Materials Research*, 56(3), pp. 427-436.
- Haque, M, M., Sartelli, M., McKimm, J., and Abu Bakar, M., 2018, Healthcare-associated infections-an overview, *Infection and Drug Resistance*, 11:2321-2333
- Hartwig, S., Boettner, A., Doll, C., Voss, J.O., Hertel, M., Preissner, S., and Raguse, J.D., 2017. Drill-Related Root Injury Caused by Intraoperative Intermaxillary Fixation: an Analysis of 1067 Screw Applications. *Dent Traumatol*, 33(1), pp.45-50.
- Heim, C. E., Vidlak, D., Scherr, T.D., Hartman, C.W., Garvin, K.L., and Kielian, T., 2015, IL-12 promotes myeloid-derived suppressor cell recruitment and bacterial persistence during *Staphylococcus aureus* orthopedic implant infection, *J. Immunol.* 194, 3861-3872.
- Hellebrekers, P., Leenen, L.P.H., Hoekstra, M. and Hietbrink, F., 2017. Effect of a standardized treatment regime for infection after osteosynthesis. *Journal of Orthopaedic Surgery and Research*, 12(1), p.41.
- Henry, S., 2018, *Advanced Trauma Life Support (ATLS) Student Course Manual*, 10th ed, American College of Surgeons, New York.
- Hernigou, J. and Schuind, F. (2019). Tobacco and bone fractures: a review of the facts and issues that every orthopaedic surgeon should know. *Bone and Joint Research*, 8(6), pp.255-265.
- Hofstee, M. I., Muthukrishnan, G., Atkins, G. J., Riool, M., Thompson, K., Morgenstern, M., Stoddart, M. J., Richards, R. G., Zaat, S. A. J., and Moriarty, T. F., 2020, Current Concepts of Osteomyelitis: From Pathologic Mechanisms to Advanced Research Methods. *American Journal of Pathology*, 190(6), 1151-1163.
- Hoit, G., Bonyun, M. and Nauth, A., 2023. Hardware considerations in infection and nonunion management: When and how to revise the fixation. *OTA International, Special Issue on Open Fractures and Fracture-Related Infections*.
- Hommes, J.W., and Surewaard, B.G.J., 2019 Intracellular Habitation of *Staphylococcus aureus*: Molecular Mechanisms and Prospects for Antimicrobial Therapy, *Biomedicines*, 10:1-19
- Hsieh TY, Funamura JL, Dedhia R, Durbin-Johnson B, Dunbar C, and Tollefson TT., 2019. Risk Factors Associated with Complications after Treatment of Mandible Fractures. **JAMA Facial Plast Surg.**21(3), pp.213-220.
- Hupp, J.R., Ellis, E.E., and Tucker, M.R., 2018, *Contemporary Oral and Maxillofacial Surgery*, 7th ed., Elsevier, New York.
- Hurrell, M. J. L., David, M. C., and Batstone, M. D., 2018. Patient Compliance and Mandible Fractures: A Prospective Study. *International Journal of Oral and Maxillofacial Surgery*, 48(6), pp.759-768.
- Hwang, K., 2021. Effect of Smoking on the Healing of a Mandibular Condyle Fracture. *ePlasty*, 21, pp.1-6.

- Idrees, M., Sawant, S., Karodia, N., and Rahman, A., 2021. *Staphylococcus aureus* Biofilm: Morphology, Genetics, Pathogenesis and Treatment Strategies. *International journal of environmental research and public health*, 18(14), pp.7602.
- Iusan, S.Al., Lucaciu, O.P., Petrescu, N.B., Mirică, I.C., Toc, D.A., Albu, S., and Costache, C. 2022. The Main Bacterial Communities Identified in the Sites Affected by Periimplantitis: A Systematic Review. *Microorganism*; 10 (1392) 1-19.
- Izakovicova, P., Borens, O., and Trampuz, A., 2019, Periprosthetic joint infection: current concepts and outlook, *EFROT Open rev*, 4(7):482-494.
- Jahanmard, F., Croes, M., Castilho, M., Majed, A., Steenbergen, M.J., Lietaert, K., Vogely, H.C., van der Wal, B.C.H., Stapels, D.A.C., Malda, J. and Zadpoor, A.A. (2020) 'Toward antibacterial coatings for personalized implants', *Materials Science and Engineering C*, 110, p. 110707.
- Jaikumar, R. A., Karthigeyan, S., Bhat, R., Naidu, M., Natarajan, S., and Angamuthu, V., 2021. Analysis of Surface Morphology and Elemental Composition on Zirconia Implants Before and After Photofunctionalization by Scanning Electron Microscopy and Energy Dispersive X-Ray Spectroscopy - An In vitro Study. *Journal of pharmacy and bioallied sciences*, 13(Suppl 1), pp.S761-S765.
- Jhass, A., Shah, A., Lata, J. and Gupta, K., 2014. Surface evaluation of titanium miniplates. *Journal of Craniofacial Surgery*, 25(5), pp.1819-1823.
- Jhass, A.K., Johnston, D.A., Gulati, A., Anand, R., Stoodley, P. and Sharma, S., 2014. A scanning electron microscope characterisation of biofilm on failed craniofacial osteosynthesis miniplates. *Journal of Cranio-Maxillofacial Surgery*, 42(7), pp.e372-e378.
- Jhunjhunwala, S., Silva, D.A., Tang, K., Alvarez, D., Matthew J., Webber, Tang, B., Lavin, D.M., Omid, V., Bose, S., Vegas, A., Ma, M., Sahay, G., Chiu, A., Bader, A., Langan, E., Sean, S., Jie Li, Dale L. Greiner, Peter E. Newburger, Ulrich H. von Andrian, Robert Langer, and Daniel G. Anderson, 2015, Neutrophil Responses to Sterile Implant Materials, *PLoS One*.10(9): 1-19.
- Jiang, Y., Zhou, X., Cheng, L. and Li, M., 2020. The impact of smoking on subgingival microflora: From periodontal health to disease. *Frontiers in Microbiology*, 11, Article 66.
- Jiao Y, Tay FR, Niu L, Chen J. 2019. Advancing anti-microbial strategies for managing oral biofilm infections. *Int J Oral Sci*;11:28.
- Jiao, J., Zhang, S., Qu, X., and Yue, B., 2021, Recent Advances in Research on Antibacterial Metals and Alloys as Implant Materials, *Front.Cell.Infect.Mikrobiol.*, 1-19.
- Jiao, Y., Tay, F.R., and Niu, Ln., 2019. Advancing Antimicrobial Strategies for Managing Oral Biofilm Infections. *Int J Oral Sci*, 11(29)
- Jin, K.S., Lee, H., Sohn, J.B., Han, Y.S., Jung, D.U., Sim, H.Y., and Kim, H.S., 2018.

- Jin, S., Li, J., Wang, J., Jiang, J., Zuo, Y. and Li, Y., 2019. Antibacterial coatings on titanium implants: A review. *Frontiers in Bioengineering and Biotechnology*, 7, p.282.
- Josse, J., Velard, F. and Gangloff, S. C., 2015, *Staphylococcus aureus* versus osteoblast: relationship and consequences in osteomyelitis. *Front. Cell. Infect. Microbiol.* 5(85):1-17.
- Juncar, M., Tent, P.A., Juncar, R.I., Harangus, A., and Mircea, R., 2021. an Epidemiological Analysis of Maxillofacial Fractures: a 10-Year Cross-Sectional Cohort Retrospective Study of 1007 Patients, *BMC oral health*, 21(1), pp.128.
- Jung, J.S., Kang, D.H., and Lim, N.K., 2020. Epidemiology Of Severe Trauma Patients Treated By Plastic Surgeons: A 7-Year Study at A Single Regional Trauma Center In South Korea, *Archives of plastic surgery*, 47(3), pp.223-227.
- Junior, R.C., Moraes, R.B., Landes, C., and Luz, J.G.C., 2017. Comparison of a 2.0-mm Locking System With Conventional 2.0- and 2.4-mm Systems in The Treatment of Mandibular Fractures: A Randomized Controlled Trial, *Oral Maxillofac Surg*, 21, pp. 327-334.
- Kabir, H., Munir, K., Wen, C., and Li, Y., 2021, Recent Research and Progress of Biodegradable Zinc Alloys and Composites for Biomedical Applications: Biomechanical and Biocorrosion Perspectives, *Bioact Mater*, 6 (3), 836-879.
- Kalinka, J., Hachmeister, M., Geraci, J., Sordelli, D., Hansen, U., Niemann, S., Oetermann, S., Peters, G., Löffler, B., and Tuchscher, L., 2014, *Staphylococcus aureus* isolates from chronic osteomyelitis are characterized by high host cell invasion and intracellular adaptation, but still induce inflammation. *International Journal of Medical Microbiology*, 304(8), 1038-1049.
- Karygianni L, Al-Ahmad A, Argyropoulou A, Hellwig E, Anderson AC, and Skaltsounis AL. 2016. Natural antimicrobials and oral microorganisms: a systematic re view on herbal interventions for the eradication of multispecies oral biofilms. *Front Microbiol*;6: 1529.
- Kavanagh, N., Ryan, E. J., Widaa, A., Sexton, G., Fennell, J., O'Rourke, S., Cahill, K. C., Kearney, C. J., O'Brien, F. J., and Kerrigan, S. W. (2018). Staphylococcal osteomyelitis: Disease progression, treatment challenges, and future directions. *Clinical Microbiology Reviews*, 31(2), 1-25.
- Kavanagh, N., Ryan, E.J., Widaa, A., Sexton, G., O'Brien, F.J., Kerrigan, S.W. and Brady, R.T. (2018). Staphylococcal osteomyelitis: disease progression, treatment challenges, and future directions. *Clinical Microbiology Reviews*, 31(2), e00084-17.
- Kenneth L. Urish, and Cassat, J. E., 2020, *Staphylococcus aureus* Osteomyelitis: Bone, Bugs, and Surgery. *Infection and Immunity*, 88(7), 1-16.
- Kenneth, B., Smith, J., Johnson, L. and Davis, M. (2020) 'Biofilm resistance mechanisms in orthopaedic implants', *Clinical Oral Investigations*, 24(3), pp. 1172-1180.

- Kent, S.J.W., Al-Izzi, T., Herbert, C., and Ryan, M., 2017. A Retrospective Review of Metal Plate Removal in an Oral and Maxillofacial Surgery Department. *International Journal of Dental Sciences and Research*, 5(1), pp.5-8.
- Khandelwal, P., Rai, A.B., Bulgannawar, B., Vakaria, N., Sejani, H., and Hajira, N., 2019. Miniplate removal in operated cases of maxillofacial region in a dental institute in Rajasthan, India. *Med Pharm Rep.*, 92(4), pp.393-400. doi: 10.15386/mpr-1195. Epub 2019 Oct 25. PMID: 31750441; PMCID: PMC6853036.
- Khatoon, Z., McTiernan, C.D., Suuronen, E.J., Mah T.F., and Alarcon, E.I., 2018, Bacterial biofilm formation on implantable devices and approaches to its treatment and prevention, *Heliyon.* ; 4(12): 1-13.
- Kim, M. Y., Kim, C. H., Han, S. J., and Lee, J. H., 2016. A Comparison of Three Treatment Methods for Fractures of the Mandibular Angle. *International journal of oral and maxillofacial surgery*, 45(7), pp.878-883.
- Kim, S.M., Ha, N.H., Hahn, H.M., Lee, I.J., Park, M.C., and Park, D.H., 2019. Analysis of Facial Injuries in Motor Vehicle Accidents According to the Location of the Seat and Seat-Belt Use, *The Journal of Craniofacial Surgery*, 30(7), pp.1949-1951.
- Kim, S.M., Kim, M.J., Lee, J.H. and Nam, S.H., 2016. Three-dimensional miniplate fixation in mandibular fractures. *Journal of Oral and Maxillofacial Surgery*, 74(7), pp.1451-1457.
- Kim, S.Y., Choi, Y.H., and Kim, Y.K., 2018. Postoperative Malocclusion after Maxillofacial Fracture Management: A Retrospective Case Study. *Maxillofac Plast Reconstr Surg.*, 40(1), pp.27.
- Kim, T., See, C.W., Li, X., and Zhu, D., 2020. Orthopedic Implants and Devices for Bone Fractures and Defects: Past, Present and Perspective, *Engineered Regeneration*, 1(2020), pp.6-18.
- King, B. J., Park, E. P., Christensen, B. J., and Danrad, R. (2018). On-Site 3-Dimensional Printing and Preoperative Adaptation Decrease Operative Time for Mandibular Fracture Repair. *Journal of Oral and Maxillofacial Surgery*, 76(9), 1950.e1-1950.e8.
- Kolenbrander, P.E., Palmer, R.J. Jr., Periasamy, S. and Jakubovics, N.S., 2010. Oral multispecies biofilm development and the key role of cell-cell distance. *Nature Reviews Microbiology*, 8(7), pp.471-480. <https://doi.org/10.1038/nrmicro2381>
- Kopchak, A.V., Romanova, A.Y. and Mykhailenko, O.V., 2018. Detection of Titanium Particles in Soft Tissues Adjacent to the Fixators in Patients With Facial Fractures and Bone Defects.
- Kosakowski, M., Kanabar, M., Hosi, K., Vanevenhoven, R., Sclafani, A. P., and Reeve, G. S. (2023). Mandible Fracture Pattern in An Urban Level 1 Trauma Center : Older, More Female, Lower Kinetic Energy. *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology*, 35(6), 508-512.
- Kriebel K., Hieke C., Müller-Hilke B., Nakata M., and Kreikemeyer B. 2018. Oral Biofilms from symbiotic to pathogenic interactions and associated disease-connection of periodontitis and rheumatic arthritis by peptidyl arginine deiminase. *Front Microbiol*; 9:53.

- Kuang X, Chen V, and Xu X.2 018. Novel approaches to the control of oral microbial biofilms. *Biomed Res Int*; 2018:6498932.
- Kumar, M., Kumar, R. and Kumar, S., 2021. *Coatings* on orthopedic implants to overcome present problems and challenges: A focused review. *Materials Today: Proceedings*, 45, pp.5269-5276.
- Kumaran, A., and Soh, H.L., 2020. Management of Nonunion and Malunion After Primary Mandibular Condylar Fracture Treatment: A Review and Recommendations, *J Oral Maxillofac Surg.*, 78(12), pp.2267-2272.
- Kuroda, K. and Okido, M., 2012. Hydroxyapatite *coating* of titanium implants using hydroprocessing and evaluation of their osteoconductivity. *Bioinorganic chemistry and applications*, 2012.
- Larsen, T., and Fiehn, N. E., 2017. Dental Biofilm Infections - an Update. *APMIS*, 125(4), pp.376-384.
- Lauria, A., Levrini, L., Acocella, A. and Rinna, C., 2016. *Bending* effects on plate fatigue resistance. *British Journal of Oral and Maxillofacial Surgery*, 54(9), pp.987-991.
- Lee, S.W., Phillips, K.S., Gu, H., Kazemzadeh-Narbat, M. and Ren, D., 2021. How microbes read the map: Effects of implant topography on bacterial adhesion and biofilm formation. *Biomaterials*, 268, pp.120595.
- Lee, U.K., Rojhani, A., Herford, A.S., and Thakker, J.S., 2016, Immediate Versus Delayed Treatment of Mandibular Fractures: A Stratified Analysis of Complications. *J Oral Maxillofac Surg.*, 74(6), pp.1186-96.
- Lewandowski, B., Szeliga, E., Czenczek-Lewandowska, E., Ozga, D., Kontek, A., Migut, M., Magoń G, Kosydar-Bochenek, J., and Kuźdżał, 2018. A Comparison of Oral-Health-Related Quality of Life In Patients In The Short- and Long-Term Period Following Lower-Facial Injury And Fractures - Preliminary Report, *Dent Med Probl.*, 55(1), pp.57-62.
- Leyens C, and Peters M (2003) Titanium and titanium alloys. In: Fundamentals and applications. WILEY-VCH Verlag GmbH and Co. KGaA, Weinheim. ISBN 3-527-30534-3
- Li YH, and Tian X. 2012. Quorum sensing and bacterial social interactions in biofilms. *Sensors (Basel)* ;12: 2519-38.
- Li, K., Wang, C., Yan, J., Zhang, Q., Dang, B., Wang, Z., and Bi, L. (2018). Evaluation of the osteogenesis and osseointegration of titanium alloys coated with graphene: an in vivo study. *Scientific Reports*, 8(1843), 1-10.
- Li, P., Schille, C., Schweizer, E., Rupp, F., Heiss, A., and Legner, C., 2018, Mechanical Characteristics, In Vitro Degradation, Cytotoxicity, and Antibacterial Evaluation of Zn-4.0ag Alloy as a Biodegradable Material, *Int. J. Mol. Sci.*, 19 (3), 755.
- Li, P., Yin, R., Cheng, J. and Lin, J. (2023). Bacterial biofilm formation on biomaterials and approaches to its treatment and prevention. *International Journal of Molecular Sciences*, 24(14), p.11680. <https://doi.org/10.3390/ijms241411680>
- Li,B., and Webster, T.J., 2018, Bacteria Antibiotic Resistance: New Challenges and Opportunities for Implant-Associated Orthopedic Infections, *J.Orthop.Res*, 36(1):22-32

- Liu, L. N., Li, J. Y., Li, K. H., Wu, Q. H., Liu, Y., and Luo, E., 2021. Deformation Assessment of The Manually Pre-Bent Titanium Miniplates in Orthognathic Surgery with Finite Element Analysis. *The Journal of craniofacial surgery*, 32(3), pp883-887.
- Liu, Y.-F., Fan, Y.-Y., Jiang, X.-F., and Baur, D.A., 2017, A customized fixation plate with novel structure designed by topological optimization for mandibular angle fracture based on finite element analysis, *Biomed. Eng. Online*. 16: 131.
- Löberg, J., Mattisson, I., Hansson, S., and Ahlberg, E., 2010. Characterisation of Titanium Dental Implants I: Critical Assessment of Surface Roughness Parameters, *The Open Biomaterials Journal*, 2, pp.18-35.
- Loukota, R.A., and Shelton, J.C., 1995, Mechanical analysis of maxillofacial miniplates, *British Journal of Oral and Maxillofacial Surgery*, 33:174-179.
- Lu, M., Chen, H., Yuan, B., Zhou, Y., Min, L., Xiao, Z., Zhu, X., Tu, C. and Zhang, X., 2020. Electrochemical deposition of nanostructured hydroxyapatite coating on titanium with enhanced early stage osteogenic activity and osseointegration. *International Journal of Nanomedicine*, 15, pp.6605.
- Łukaszewska-Kuska, M., Krawczyk, P., Martyla, A., Hędzielek, W. and Dorocka-Bobkowska, B., 2018. Hydroxyapatite coating on titanium endosseous implants for improved osseointegration: Physical and chemical considerations. *Advances in clinical and experimental medicine: official organ Wroclaw Medical University*, 27(8), pp.1055-1059.
- Lye, K. W., Waite, P. D., Wang, D., and Sittitavornwong, S. (2008). Predictability of Prebent Advancement Plates for Use in Maxillomandibular Advancement Surgery. *Journal of Oral and Maxillofacial Surgery*, 66(8), 1625-1629.
- Lynn, J. V., Daniel, M. C., Jackson, C. M. K., Ulma, R. M., Vercler, C. J., Kasten, S. J., and Buchman, S. R. (2024). Reasons for Removal of Rigid Internal Fixation Devices in Craniofacial Surgery: A 20-year Update. *Journal of Craniofacial Surgery*, 35(4), 1052-1056.
- Manzie, T., David, M.C., and Bobinskas, A., 2021. Return to Normal Diet Following Mandibular Fractures - How Long is Long Enough? *Br J Oral Maxillofac Surg*. 59(9), pp.1050-1055.
- Masters, E. A., Ricciardi, B. F., Bentley, K. L. d. M., Moriarty, T. F., Schwarz, E. M., and Muthukrishnan, G. (2022). Skeletal infections: microbial pathogenesis, immunity and clinical management. *Nature Reviews Microbiology*, 20(7), 385-400.
- Mbalaviele, G., Novack, D. V., Schett, G. and Teitelbaum, S. L., 2017, Inflammatory osteolysis: a conspiracy against bone. *J. Clin. Invest.*, 127, 2030-2039.
- Masters, E.A., Ricciardi, B.F., Bentley, K.L., Muthukrishnan, G., Gill, A.L., Galloway, C.A., Polumuri, S.K., Zaleski, K.J., Schwarz, E.M. and Kates, S.L. (2022) '*Staphylococcus aureus* biofilm and bone destruction', *Nature Reviews Microbiology*, 20(4), pp. 218-232.
- McGuinness, W. A., Kobayashi, S. D., and DeLeo, F. R., 2016, Evasion of neutrophil Killing by *Staphylococcus aureus*. *Pathogens*, 5(32):1-13.

- McNally, M.A., Ferguson, J.Y., Lau, A.C.K., et al., 2023. Managing fracture-related infection. *Bone and Joint Journal*, 105-B(3), pp.267-274.
- McNamara, Z., Findlay, G., O'Rourke, P., and Batstone, M., 2016. Removal Versus Retention of Asymptomatic Third Molars in Mandibular Angle Fractures: a Randomized Controlled Trial. *International Journal of Oral and Maxillofacial Surgery*, 45(5), pp.571-574.
- Medellin, M. R., Fujiwara, T., Clark, R., Stevenson, J. D., Parry, M., and Jeys, L. 2019, Mechanisms of Failure and Survival of Total Femoral Endoprosthetic Replacements, *Bone Joint J.* 101-B (5), 522-528.
- Mendes, M.B.M., Medeiros, R.C., Lauria, A., Savassi-Rocha, R. and Moreira, R.W.F. 2015. 'Mechanical and microstructural properties of fixation systems used in oral and maxillofacial surgery', *Oral and Maxillofacial Surgery*, 20(1), pp. 85-90.
- Mendez, A., Ldanin, L., Arellano, J. and Uribe, A., 2016. Defects in facial titanium plates. *Journal of Maxillofacial and Oral Surgery*, 15(3), pp.392-396.
- Meroni, G., Tsikopoulos, A., Tsikopoulos, K., Allemanno, F., Martino, P. A., and Soares Filipe, J. F., 2022, A Journey into Animal Models of Human Osteomyelitis: A Review. *Microorganisms*, 10(6), 1-37
- Michel, C.J., Amin, D., Gelbard, R.B., and Abramowicz, S., 2022. An Evidence based Approach to Antibiotic Use in Maxillofacial Trauma, *Oral Surg Oral Med Oral Pathol Oral Radiol*, 134(2), pp.151-158.
- Mishra, N., Thakkar, N., Kar, I., Baig, S.A., Sharma, G., Kar, R., Sahu, G.R., and Birmiwal, K.G., 2019. 3-D Miniplates Versus Conventional Miniplates in Treatment of Mandible Fractures. *J Maxillofac Oral Surg.*, 18(1), pp.65-72.
- Mitik-Dineva, N., Wang, J., Truong, V.K., Stoddart, P., Malherbe, F., Crawford, R.J. and Ivanova, E.P. (2009) 'Impact of nano-topography on bacterial attachment', *Biotechnology Journal*, 4(12), pp. 1758-1767. <https://doi.org/10.1002/biot.200900103>
- Mitwalli, H., Alshafi, R., Balhaddad A.A., Weir, M.D., Xu, H.H.K., and Melo, M.A.S. 2020. Emerging Contact-Killing Antibacterial Strategies for Developing Anti-Biofilm Dental Polymeric Restorative Materials. **Bioengineering (Basel)**7(3): 83.
- Mohammed, A. A. (2017). Effect of The Shape of Mini Plate on The Stability of Mandibular Fracture. *International Journal of Dentistry Research*, 2(2), 49-52.
- Mohanty, R., Asopa, S.J., Joseph, M.D., Sigh, B., Rajguru, J.P., Saidath, K., and Sharma, U., 2019. Red complex: Polymicrobial conglomerate in oral flora: A review. *J Family Med Prim care*, 8(11): 3480-3486
- Moore, K., Gupta, N., Gupta, T.T., Patel, K., Brooks, J.R., Sullivan, A., Litsky, A.S., and Stoodley, P., 2022. Mapping Bacterial Biofilm on Features of Orthopedic Implants In Vitro. *Microorganisms*. 10(3), pp.586.
- Moraes, G., Zambom, C. and Siqueira, W.L., 2021. Nanoparticles in Dentistry: A Comprehensive Review. *Pharmaceuticals*, 14(8), pp.752.
- Moraissi, E.A., and Ellis, E., 2014. What Method for Management of Unilateral Mandibular Angle Fractures Has the Lowest Rate of Postoperative

- Complication. *Journal of Oral and Maxillofacial Surgery*, 72(11), pp. 2197-2211. <https://doi.org/10.1016/j.joms.2014.05.023>
- Morillo-Lopez, V., Sjaarda, A., Islam, I., Boris, G.G. and Mark Welch, J.L., 2022. Cornucob structures in dental plaque reveal microhabitat taxon specificity. *Microbiome*, 10, p.145. <https://doi.org/10.1186/s40168-022-01323-x>
- Mosaddad, S. A., Tahmasebi, E., Yazdani, A., Rezvani, M. B., Seifalian, A., Yazdani, M., and Tebyanian, H., 2019. Oral Microbial Biofilms: An Update. *European Journal of Clinical Microbiology and Infectious Diseases : Official Publication of the European Society of Clinical Microbiology*, 38(11), pp.2005-2019.
- Muhammad M.H., Idris L.A., Fan X., Guo Y., Yu Y., Jin X., Qiu J., Guan X., and Huang T., 2020, Beyond Risk: Bacterial Biofilms and Their Regulating Approaches, *Front. Microbiol.*, 11(928): 1-20.
- Mustapha, A.D., Salame, Z. and Chrcanovic, B.R. (2022). Smoking and Dental Implants: A Systematic Review and Meta-Analysis. *Medicina*, 58(1), p.39. <https://doi.org/10.3390/medicina58010039>
- Nautiyal, V.P., Mittal, A., Agarwal, A. and Pandey, A. (2013) 'Tissue response to titanium implant using scanning electron microscope', *National Journal of Maxillofacial Surgery*, 4(1), pp. 7-12.
- Navarro, Morales, Aguila, Yassim, and Barbara, Ileana. 2018, Behavior of Severe Maxillofacial Trauma, *Revista Cubana de Estomatología*, 55(4), pp.1-10.
- Ng, S.L., Das, S., Ting, Y.-P., Wong, R.C.W. and Chanchareonsook, N. (2021) 'Benefits and biosafety of use of 3D-printing technology for titanium biomedical implants: A pilot study in the rabbit model', *International Journal of Molecular Sciences*, 22(16), p. 8480.
- Niu, X., Fan, Y., Liu, X., Li, X. and Li, P., 2020. Review on antibacterial nanocoatings for titanium implant surfaces. *Nanomaterials*, 10(6), p.1247.
- Odom, E.B., and Snyder-Warwick, A.K., 2016. Mandible Fracture Complications and Infection: The Influence of Demographics and Modifiable Factors, *Plast Reconstr Surg.*, 138(2), pp.282-289.
- Oilo M, and Bakken V. 2015. Biofilm and dental biomaterials. *Materials (Basel)*;8:2887-900.
- Oksa, D.S., Lasa, A.S., Supriatna, Y., dkk., 2024. Periodontal disease as a primary cause of surgical site infection in fractures of the mandible: is smoking a confounding variable? *Journal of Cranio-Maxillofacial Surgery*, 52(1), pp.1-9.
- Oksa, M., Haapanen, A., Marttila, E., Furuholm, J., and Snäll, J., 2023. Postoperative Wound Dehiscence in Mandibular Fractures, *Acta Odontol Scand*, 12(1), pp.1-7.
- Oli, A.K., Javaregowda, P.K., Jain, A. and Kelmani, C.R., 2021. Mechanism involved in biofilm formation of *Enterococcus faecalis*. In: Kelmani, C.R. ed., *Focus on Bacterial Biofilms*. IntechOpen. doi:10.5772/intechopen.103949
- Orakzai, G.S., Shuja, E., Niazi, K., Afreen, Z., Afreen, A. and Siddiqui, O., 2021. Causes of Removal of metallic hardware employed in oral and maxillofacial

- surgery-A cross sectional survey. *The Professional Medical Journal*, 28(10), pp.1508-1512.
- Oryan, A., Monazzah, S., and Sadegh, B., 2015, Bone Injury and Fracture Healing Biology, *Biomed. Env. Journal.*, 28(1): 57-71
- Osmon, D. R., Berbari, E.F., Berendt, A.R., Lew, D., Zimmerli, W., Stecklelberg, J.M., Rao, N., Hassen, A., and Wilson, W.R., Diagnosis and management of prosthetic joint infection: clinical practice guidelines by the infectious diseases society of America. *Clin. Infect. Dis*, 56(2):1-25.
- Ostrandrs, B.T., Wang, H.D., Cusano, A., Manson, P.N., Nam, A.J., and Dorafshar, A.H., 2018. Contemporary Management of Mandibular Fracture Nonunion -A Retrospective Review and Treatment Algorithm, *J Oral Maxillofac Surg.*, 76(7), pp.1479-1493.
- Otto, M. (2018) 'Staphylococcal biofilms', *Current Topics in Microbiology and Immunology*, 322(1), pp. 207-228.
- Pabla, R. and Kassam, K., 2020. Hardware Removal in Craniomaxillofacial Trauma. In *Atlas of Operative Maxillofacial Trauma Surgery* (pp. 41-53). Springer, London.
- Pajor, K., Pajchel, L. and Kolmas, J. (2019) 'Hydroxyapatite and fluorapatite in conservative dentistry and oral implantology-A review', *Materials*, 12(17), p. 2683.
- Palinkas, M., Nassar, M.S.P., Cecilio, F.A., Siéssere, S., Semprini, M., Machado-de-Sousa, J.P., Hallak, J.E.C. and Regalo, S.C.H., 2010. Age and gender influence on maximal bite force and masticatory muscles thickness. *Archives of Oral Biology*, 55(10), pp.797–802.
- Palka, L., Mazurek-Popczyk, J., Arkusz, K., and Baldy-Chudzik, K., 2020. Susceptibility to Biofilm Formation on 3D-Printed Titanium Fixation Plates Used in the Mandible: A Preliminary Study, *Journal of oral microbiology*, 12(1).
- Pandey, S., Yadav, P., Roychoudhury, A., Bhutia, O., and Goswami, D., 2022. A Randomized Controlled Trial to Compare Functional, Combined Rigid and Functional and Rigid Fixation in Double Mandibular Fractures. *Journal of Oral Biology and Craniofacial Research*, 12, pp.233-237.
- Pang, X., Huang, Y., Wang, J. and Wan, C., 2018. Surface modification of titanium implants to enhance osteointegration and antibacterial activity. *Biomaterials Research*, 22(1), pp.1-14.
- Pantham, D., Sounjanya, V.S., Reddy, N.A., Vinuthna, M., Kranthi, K., and Keerthi, P.D., 2022. Evaluation of Surface Changes of Stainless Steel Miniplates and Screws Following Retrieval, *IP International Journal Of Maxillofacial Imaging.*, 8(1), pp.1-6.
- Park, J.W., An, J.S., and Lim, W.H, 2019, Microbial changes in biofilms on composite resins with different surface roughness: an in vitro study with a multispecies biofilm model, *J Prosthet Dent*, 122(5):493.e1-493. e8.
- Pasich E., Walczewska M., Pasich A., and Marcinkiewicz J. 2013. Mechanism and risk factors of oral biofilm formation. **Postepy Hig Med Dosw (Online)**,*67:736-41.

- Patel RM, and Malaki Z. 2018. The effect of a mouth rinse containing essential oils on dental plaque and gingivitis. *Evid Based Dent*;9:18-19.
- Patel, N., Kim, B., and Zaid., 2016, A detailed analysis of mandibular angle fractures: epidemiology, patterns, treatments, and outcomes, *J Oral Maxillofac Surg.*, 74(9): 1792-9.
- Patel, N., Skolnick, G.B. and Zuniga, J.R., 2016. Biomechanics of the mandibular angle fracture. *Oral and Maxillofacial Surgery Clinics of North America*, 28(4), pp.397-407.
- Pena, I., Roberts, L.E., Guy, W.M., and Zevallos, P.J., 2014. The Cost and Inpatient Burden of Treating Mandible Fractures: A Nationwide Inpatient Sample Database Analysis. *Otolaryngology -Head and Neck Surgery*, 151(4), pp.591-598.
- Peng, F., Xie, J., Liu, H., Zheng, Y., Qian, X., Zhou, R., Zhong, H., and MeiLi, Z., 2023 Shifting focus from bacteria to host neutrophil extracellular traps of biodegradable pure Zn to combat implant centered infection, *Bioactive Materials*, 21:436-449
- Pereira-Filho, V. A., Castro, A. C. R., Gabrielli, M. F. R., and Hochuli-Vieira, E. (2016). Analysis of complications in mandibular angle fractures: A retrospective study of 161 patients. *Journal of Oral and Maxillofacial Surgery*, 74(4), 778.e1-778.e9.
- Perez, D., and Ellis, E., 2020. Complications of Mandibular Fracture Repair and Secondary Reconstruction. *Semin Plast Surg.*, 34(4), pp.225-231.
- Permenkes.2013.<http://bprs.kemkes.go.id/v1/uploads/pdf/files/peraturan/32%20PMK%20No.%2069%20Ttg%20Standar%20Tarif%20Pelayanan%20Kesehatan%20Program%20JKN.pdf>. Diakses 2 Agustus 2022.
- Perry, M., and Holmes, S., 2014, *Manual of Operative Maxillofacial Trauma Surgery*, Springer, New York.
- Petrova, O.E. and Sauer, K., 2012. Escaping the biofilm in more than one way: desorption, detachment or dispersion. *Current Opinion in Microbiology*, 15(5), pp.525-530. <https://doi.org/10.1016/j.mib.2012.05.002>
- Pickrell, B.B., and Hollier, L.H., 2017. Jr. Evidence-Based Medicine: Mandible Fractures, *Plast Reconstr Surg.*, 140(1), pp.192-200.
- Pinto, C.M.S.A., Asprino, L., and de Moraes, M., 2015. Chemical and Structural Analyses of Titanium Plates Retrieved From Patients, *International Journal of Oral and Maxillofacial Surgery*, 44(8), pp.1005-1009.
- Piombino, P., Sani, L., Sandu, G., and Dell'Aversana Orabona, G. (2023). Titanium internal fixator removal in maxillofacial surgery: Is it necessary? A systematic review and meta-analysis. *Journal of Craniofacial Surgery*, 34(1), 145-152.
- Pires, W. R., Bonardi, J. P., Faverani, L. P., Momesso, G. A., Muñoz, X. M., Silva, A. F., Panzarini, S. R., Bassi, A. P., and Ponzoni, D., 2015. Late Mandibular Fracture Occurring in The Postoperative Period After Third Molar Removal: Systematic Review and Analysis Of 124 Cases. *International journal of oral and maxillofacial surgery*, 46(1), pp.46-53.
- Pokrowiecki, R. 2018. 'The paradigm shift for drug delivery systems for oral and maxillofacial implants', *Drug Delivery*, 25(1), pp. 1504-1515.

- Ponvel, K., Panneerselvam, E., Balasubramanian, S., and Krishna Kumar Raja, V.B., 2019, Evaluation of labial versus labio-inferior lines of osteosynthesis using 3D miniplate for fractures of the anterior mandible: A finite element analysis with a pilot clinical trial, *Chin. J. Traumatol.*, 22: 261-269.
- Porto, D.E., Araújo, J.M.D.N., Júnior, C.L., and Andrade, E.S.S., 2021. Pattern of Maxillofacial Trauma and Associated Factors in Traffic Accident Victims, *The Journal of Craniofacial Surgery*, 32(3), pp.1010-1013.
- Porto, P., Cavalcanti, Y.W., and Forte, F.D., 2021. Maxillofacial Trauma Due To Traffic Accidents and Falls: an Exploratory Study of Associated Factors, *Medicina Oral, Patologia Oral Y Cirugia Bucal*, 26(3), pp.e349-e356.
- Pourhoseingholi, M.A., Baghestani, A.R., and Vahedi, M., 2012. How to control confounding effects by statistical analysis. *Gastroenterology and Hepatology from Bed to Bench*, 5(2), pp.79–83
- Poxleitner, P., Steybe, D., Bublitz, B., Schlager, S., Fuessinger, M.A., Voss, P.J., Schmelzeisen, R., Cornelius, C.-P., and Metzger, M., 2019, Analysis of the accuracy of a novel preformed osteosynthesis plate for the reduction and fixation of zygomaticomaxillary complex fractures. *J. Cranio-Maxillofac. Surg.*, 47: 951-958.
- Press SG, Miller AJ, and Luschen MC., 2021. Is There a Safe Zone for Lateral Border Fixation of Mandibular Angle Fractures? *Craniofacial Trauma and Reconstruction*, 14(4), pp.284-288.
- Pusat Informasi Kriminal Nasional (Pusiknas). 2022. https://www.pusiknas.polri.go.id/peta_lalu_lintas. Di akses 2 September 2023
- Quinn, J., Fadden, R.M., Chan, C., and Carson, L., 2020, Titanium for Orthopedic Applications: An Overview of Surface Modification to Improve Biocompatibility and Prevent Bacterial Biofilm Formation, *iScience*, 23:1-22
- Quirynen, M., and Bollen, C.M., 1995, The influence of surface roughness and surface-free energy on man's supra- and subgingival plaque formation. A review of the literature. *J Clin Periodontol*, 22(1):1-14.
- R.A. Loukota, and J.C. Shelton., 1995. Mechanical Analysis of Maxillofacial Miniplates, *British Journal of Oral and Maxillofacial Surgery*, 33(3), pp.174-179.
- Rai, A., Jain, A., and Datarkar, A., 2018. Comparison of Single Versus Two Non-Compression Miniplates in the Management of Unfavourable Angle Fracture of the Mandible: A Prospective Randomized Clinical Study. *Oral and Maxillofacial Surgery*, 22(2), pp.157-161.
- Raidoo, B., Gibbons, A. and Lazarus, D., 2022. Comparative study of plating sites in mandibular angle fractures. *International Journal of Oral and Maxillofacial Surgery*, 51(4), pp.537-544.
- Raidoo, P., Manzie, T., Vujcich, N., Mian, M., and Bobinskas, A. M. (2022). Rigid Versus Non-Rigid Fixation For Bilateral Angle of Mandible Fractures: A 10 Year Perspective. *Advances in Oral and Maxillofacial Surgery*, 8, 1-4.
- Rajesh S, Koshi E, Philip K, and Mohan A. 2017. Antimicrobial photodynamic therapy: an overview. *J Indian Soc Periodontol* 15:323-7.

- Rallis, G., Mourouzis, C., Papakosta, V., and Papanastasiou, G. (2006). Reasons for miniplate removal following maxillofacial trauma: A 4-year study. *Journal of Cranio-Maxillofacial Surgery*, 34(7), 435-439.
- Ramos, A., Semedo, T., and Mesnard, M., 2020. Study of Fixation of a Mandibular Plate for Favourable Fractures of The Mandibular Angle: Numerical Predictions. *The British Journal of Oral and Maxillofacial Surgery*, 58(6), pp.652-658.
- Rante, S.D.T., Supriatna, Y., Hartati, R., dkk., 2023. Evaluasi klinis komplikasi infeksi pasca fiksasi mandibula terbuka. *Jurnal Bedah Mulut dan Maksilofasial Indonesia*, 4(2), pp.101-108.
- Rao T.S., 2020, Bacterial Biofilms and Implant Infections: A Perspective. *Arch Orthop*. 1(4): 98-105.
- Rao, E., Naveen, S., Rao, R.C., Kollabathula, K., Srirambhatla, M., and Gandham S., 2019, Principle of lag-screw fixation in mandibular trauma, *J Int Soc Prev Community Dent.*, 9:282-9.
- Raphel, J., Holodniy, M., Goodman, S. B. and Heilshorn, S. C., 2016, Multifunctional *coatings* to simultaneously promote osseointegration and prevent infection of orthopaedic implants, *Biomaterials*, 84, 301-314.
- Rath S, Bidyasagar SC, and Dubey D. 2021. Oral Biofilm: Develop Mechanism, Multidrug resistance, Their effective management with Novel Techniques. *BMMJ* 12(1):1-7
- Ravikumar, C., and Bhoj, M., 2019. Evaluation of postoperative complications of open reduction and internal fixation in the management of mandibular fractures: A retrospective study. *Indian J Dent Res.*, 30(1), pp.94-96. doi: 10.4103/ijdr.IJDR_116_17. PMID: 30900664.
- Reigada, I., Guarch-Pérez, C., Patel, J.Z., Riool, M., Savijoki, K., Yli-Kauhaluoma, J., Zaat, S.A.J., and Fallarero, A., 2020, Combined Effect of Naturally-Derived Biofilm Inhibitors and Differentiated HL-60 Cells in the Prevention of *Staphylococcus aureus* Biofilm Formation, *Microorganisms*, 8(1757): 1-15.
- Relucenti, M., Familiari, G., Donfrancesco, O., Taurino, M., Li, X., Chen, R., Artini, M., Papa, R., and Selan, L., 2021. Microscopy Methods for Biofilm Imaging: Focus on SEM and VP-SEM Pros and Cons. *Biology*, 10(1), pp.51.
- Ricardo, S.R., and Abreu M.A., 2018, Treatment of Prosthetic Joint Infection with Debridement, Antibiotics, and Irrigation with Implant Retention - a Narrative Review, *J Bone Jt Infect*. 3(3): 108-117.
- Riset Kesehatan Dasar (Riskesdas). 2018. Badan Penelitian dan Pengembangan Kesehatan Kementerian RI tahun 2018. Diakses 2 Agustus 2022.
- Roberts AP, and Mullany P. 2016. Oral biofilms: a reservoir of transferable, bacterial, antimicrobial resistance. *Expert Rev Anti Infect Ther*;8:1441-50.
- Roccia, F., Sotong, J., Savoini, M., Ramieri, G., and Zavattero, E., 2019. Maxillofacial Injuries due to Traffic Accidents. *The Journal of Craniofacial Surgery*, 30(4), pp.e288-e293.

- Rocha, S.S., Bernardi, A.C.A., Pizzolitto, A.C., Adabo, G.L. and Pizzolitto, E.L. (2009) '*Streptococcus mutans* attachment on a cast titanium surface', *Materials Research*, 12(1), pp. 41-44.
- Romeo, I., Roccia, F., Aladelusi, T., Rae, E., Laverick, S., Ganasouli, D., Zanakis, S. N., de Oliveira Gorla, L. F., Pereira-Filho, V. A., Gallafassi, D., Faverani, L. P., Alalawy, H., Kamel, M., Samieirad, S., Jaisani, M. R., Rahman, S. A., Rahman, T., Goetzinger, M., Bottini, G. B., Carlaw, K., ... and Hassanein, A. G., 2022. A Multicentric Prospective Study on Maxillofacial Trauma Due to Road Traffic Accidents: The World Oral and Maxillofacial Trauma Project. *The Journal of craniofacial surgery*, 33(4), pp.1057-1062.
- Rosa, J.H., Villanueva, N.L., Sanati-Mehrziy, O., Factor, S.H., and Taub, P.J., 2016. Review of Maxillofacial Hardware Complications and Indications for Salvage, *J Craniomaxillofac Trauma Reconstruction.*, 9, pp.134-140.
- Routray S, Rath S, and Mohanty N. 2019. Prevalence of methicillin-resistant *Staphylococcus aureus* isolated from saliva samples of patients with oral squamous cell carcinoma. *J Oral Res*:8:30-6
- Rozis, M., Dimitrios, S., and Spyros, G., 2018, Orthopedic Implant-Related Biofilm Pathophysiology: A Review of the Literature, *Cureus*, 13(5):1-5.
- Sadhu Reddipogu, J., Lightfoot, E., Scott, C., and Thomas, M., 2021. Recurrent Mandibular Fractures: a Retrospective Study Over 17 Years on Aetiology, Demographics, Fracture Patterns, and Management. *International Journal of Oral and Maxillofacial Surgery*, 50(12), pp.1596-1602.
- Saito, D.M., and Murr, A.H., 2008. Internal Fixation of Mandibular Angle Fractures with the Champy Technique, *Operative Techniques in Otolaryngology*, 19(2), pp. 123-127.
- Sakong, Y., Kim, Y. H., and Chung, K. J., 2021. Analysis of Complication in Mandibular Angle Fracture: Champy Technique Versus Rigid Fixation. *The Journal of craniofacial surgery*, 32(8), pp.2732-2735.
- Saleem Khan, M., Li, Z., Yang, K., Xu, D. and Yang, C. 2019 'Microbiologically influenced corrosion of titanium caused by aerobic marine bacterium *Pseudomonas aeruginosa*', *Journal of Materials Science and Technology*, 35, pp. 216-222.
- Salem, A and Mohsen, C., 2020, Atomic Force Microscope Surface Roughness Analysis of Surface Treated Ceramics, *Open Access Maced J Med Sci*, 8(D):134-8
- Santolini, E., Goh, V., Forsyth, N., dkk., 2024. Effect of mechanical stability of osteosynthesis on infection rates: timing of temporary and definitive fixation. *Injury*, 55(1), pp.1-10.
- Sari, M., Hening, P., Ana, I.D. and Yusuf, Y., 2021. Porous structure of bioceramics carbonated hydroxyapatite-based honeycomb scaffold for bone tissue engineering. *Materials Today Communications*, 26, pp.102135.
- Sari, M., Kristianto, N.A., Ana, I.D. and Yusuf, Y., 2021. Carbonated Hydroxyapatite-Based Honeycomb Scaffold *Coatings* on a Titanium Alloy for Bone Implant Application-Physicochemical and Mechanical Properties Analysis. *Coatings*, 11(8), pp.941.

- Sarkar, D.F., Mishra, N., Samal, D., Pati, D., Kar, I.B., Mohapatra, D., and Mishra, A., 2021. Locking Versus Non-Locking Plating System in The Treatment of Mandibular Fractures: A Randomized Comparative Study. *Journal of Cranio-Maxillofacial Surgery*, 49(3), pp.184-190.
- Sauerbier, S., Kuenz, J., Hauptmann, S., Hoogendijk, C.F., Liebehenschel, N., and Schön, R., 2010 Clinical aspects of a 2.0-mm locking plate system for mandibular fracture surgery, *J Craniomaxillofac Surg.*,38:501-4.
- Sawatari, Y., Marwan, H., Alotaibi, F., Christensen, J., Gannon, J., and Peleg, M., 2016. The Use of Three-Dimensional Strut Plates for The Management of Mandibular Angle Fractures: A Retrospective Analysis of 222 Patients. *International journal of oral and maxillofacial surgery*, 45(11), pp.1410-1417.
- Scherr, T. D., Hanke, M.I., Huang, O., James, D.B.A., Horswill, A.r., Bayles, K.W.,Fey, P.D., Torres, V.J., and Kielian, T., 2015, *Staphylococcus aureus* biofilms induce macrophage dysfunction through leukocidin AB and alpha-toxin, *mBio.*, 6:1021-15.
- Schlager, S., and Rüdell, 2017, A. Sexual Dimorphism and population affinity in the human zygomatic structure-Comparing surface to outline data, *Anat. Rec.*, 300: 226-237.
- Seebach, E., and Kubatzky, K.F., 2019, Chronic Implant-Related Bone Infections-Can Immune Modulation be a Therapeutic Strategy?, *Front.Immunol.*, 23:1-21
- Shahzan, S., M.M., 2020. Miniplate Removal in Mandibular Trauma Patients-A Singer Institution Retrospective Study. *Internation Journal of Research in Pharmaceutical Sciences*, 11(SPL3), pp.324-329.
- Shao, H., Ma, M., Wang, Q., Yan, T., Zhao, B., Guo, S. and Tong, S. 2022. 'Advances in the superhydrophilicity-modified titanium surfaces with antibacterial and pro-osteogenesis properties: A review', *Frontiers in Bioengineering and Biotechnology*, 10, p. 1000401. doi: 10.3389/fbioe.2022.1000401.
- Shao, X., Zhong, D., Wang, W., Zeng, H., Wang, Y., Wang, C. and Zhang, J., 2022. Biofilm formation as a complex result of virulence and adaptive responses of *Helicobacter pylori*. *Pathogens*, 11(12), p.1449. <https://doi.org/10.3390/pathogens11121449>
- Sharma D., Misba L., and Khan A.U., 2019, Antibiotics versus biofilm: an emerging battleground in microbial communities, *Antimicrobial Resistance and Infection Control* 8:76
- Sheen JR, Mabrouk A, and Garla VV. Fracture Healing Overview. [Updated 2023 Apr 8]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025
- Shurley, C. D., Abramowicz, S., Manhan, A. J., Roser, S. M., and Amin, D., 2022. Comprehensive Analysis of Patients with Failure of Mandibular Hardware. *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology*, 134(1), pp.15-19.

- Singaram M., Vijayabala G.S. and Udhayakumar R.K., 2016, Prevalence, pattern, etiology, and management of maxillofacial trauma in a developing country: a retrospective study, *J Korean Assoc Oral Maxillofac Surg* 42:174-181.
- Singh S, Singh S.K, Chowdhury I, and Singh R. 2017. Understanding the mechanism of bacterial biofilms resistance to antimicrobial agents. *Open Microbiol J*;11:53-62.
- Singh, V., Bhagol, A., Goel, M., Kumar, I., and Singh, A. (2020). Evaluation of three different osteosynthesis methods for mandibular angle fractures: Vertical load resistance and fracture stability. *Journal of Cranio-Maxillofacial Surgery*, 48(8), 730-736.
- Singh, V., Khatana, S., and Bhagol, A., 2014. Superior Border Versus Inferior Border Fixation in Displaced Mandibular Angle Fractures: Prospective Randomized Comparative Study. *International Journal of Oral and Maxillofacial Surgery*, 43(7), pp.834-840.
- Sirin, Y., Yildirirturk, S., Ay, N., and Gencil, B. (2019). The Influence of The Gonial Angle On The Initial Biomechanical Stability of The Plate Osteosynthesis In Polyurethane Mandibles With Angle Fracture. *The Journal of Craniofacial Surgery*, 00, 1-5.
- Šístková, J., Fialová, T., Svoboda, E., Varmužová, K., Uher, M., Číhalová, K., Příbyl, J., Dlouhý, A. and Goldbergová, M.P. (2024) 'Insight into antibacterial effect of titanium nanotubular surfaces with focus on *Staphylococcus aureus* and *Pseudomonas aeruginosa*', *Scientific Reports*, 14, p. 17303.
- Skriabin, A.S., Shakurov, A.V., Vesnin, V.R., Lukina, Y.S., Tsygankov, P.A., Bionyshev-Abramov, L.L., Serejnikova, N.B. and Vorob'ev, E.V. (2022) 'Titanium membranes with hydroxyapatite/titania bioactive ceramic coatings: Characterization and in vivo biocompatibility testing', *ACS Omega*, 7, pp. 47880-47891.
- Solís, B., Cristina, Amador, A., and Alberto, L., 2020. The Oral Microbiota: A Literature Review for Updating Professionals in Dentistry. Part I. *Odovtos International Journal of Dental Sciences*, 22(3), pp.59-68
- Soto SM. 2016. Role of efflux pumps in the antibiotic resistance of bacteria embedded in a biofilm. *Virulence*;4:223-9.
- Souza, J.C.M., Ponthiaux, P., Henriques, M., Oliveira, R., Teughels, W., Celis, J.P. and Rocha, L.A. (2013) 'Corrosion behaviour of titanium in the presence of *Streptococcus mutans*', *Journal of Dentistry*, 41(6), pp. 528-534.
- Spinelli, G., Lazzeri, D., Arcuri, F., Valente, D., and Agostini, T., 2016. Management of Mandibular Angle Fractures by Two Conventional 2.0-mm Miniplates: A Retrospective Study of 389 Patients. *Cranio-maxillofacial trauma and reconstruction*, 9(3), pp.206-210.
- Sridhar, S., Wang, F., Wilson, T.G., Palmer, K., Valderrama, P. and Rodrigues, D.C., 2019. The role of bacterial biofilm and mechanical forces in modulating dental implant failures. *Journal of the Mechanical Behavior of Biomedical Materials*, 92, pp.118-127.
- Stewart P.S. 2015. Antimicrobial tolerance in biofilms. *Microbiol Spectr*;3:10.

- Stewart, P.S., and Parker, A.E. 2019. Measuring Antimicrobial Efficacy against Biofilms: a Meta-analysis. *Antimicrob Agents Chemother.* 63(5):1-10
- Stracquadano, S., Musso, N., Costantino, A., Lazzaro, L.M., Stefani, S., and Bongiorno, D., 2021, *Staphylococcus aureus* Internalization in Osteoblast Cells: Mechanisms, Interactions and Biochemical Processes. What Did We Learn from Experimental Models?, *Pathogens*, 10(239):1-24.
- Su, Y., Cockerill, I., Wang, Y., Qin, Y. X., Chang, L., and Zheng, Y., 2019, ZincBased Biomaterials for Regeneration and Therapy, *Trends Biotechnol.*, 37 (4), 428-441.
- Subbiahdoss, G., Kuijter, R., Grijpma, D.W. and van der Mei, H.C. (2010) 'Influence of surface wettability and topography on bacterial adhesion', *Biomaterials*, 31(26), pp. 7070-7077.
- Sukegawa, S. Kanno, T., Masui, M., Takahashi, Y.S., Kishimoto, T., Sato, A., and Furuki, Y., 2019. A Retrospective Comparative Study of Mandibular Fractures Treatment With Internal Fixation Using Reconstruction Plate Versus Miniplates, *Journal of Cranio-Maxillo-Facial Surgery.*, 47, pp.1175-1180.
- Sukegawa, S., Masui, M., Sukegawa-Takahashi, Y., Nakano, K., Takabatake, K., Kawai, H., Nagatsuka, H., and Furuki, Y., 2020. Maxillofacial Trauma Surgery Patients with Titanium Osteosynthesis Miniplates: Remove or Not?, *The Journal of Craniofacial Surgery*, 31(5), pp.1338-1342.
- Sulijaya, B., Kuswandani, S.o., and Soeroso, Y. 2016. Contemporary guided bone regeneration therapy for unaesthetic anterior peri-implant case. *Majalah Kedokteran Gigi.* 9(2):1-5
- Sundheepkumar, V., Saravanan, R., and Krishnan, B., 2023. Infectious Complications in Compound Mandibular Fractures Undergoing A Delayed Surgical Intervention - A Prospective Observational Study, *Br J Oral Maxillofac Surg.*, 61(4), pp.302-308.
- Suresh, K.S., 2001. Anodizing titanium for space applications. *Thin Solid Films*, 398-399, pp.553-558.
- Sybenga, A. B., Jupiter, D. C., Speights, V. O., and Rao, A. 2020. Diagnosing Osteomyelitis: A Histology Guide for Pathologists. *Journal of Foot and Ankle Surgery*, 59(1), 75-85.
- Tabrizi, R., Pourdanesh, F., Khoshnik, P.L., and Centenero, S.A., 2019. Does the Lag Time Between Injury and Treatment Play a Role in Recovery of Inferior Alveolar Nerve Neurosensory Disturbances Following Mandibular Body Fracture. *J Craniofac Surg.*, 30(7), pp.2128-2130.
- Taira, H., Yaga, M., Nakasone, S., Nishida, K., and Yamashiro, T., 2023. Significant Removal of Bacterial Biofilm Induced by Multiple-Short Ranges of Electric Interventions. *Journal of Orthopaedic Science : Official Journal of The Japanese Orthopaedic Association*, 26(23), pp.64.
- Tam, K., and Torres, V.J., 2019, *Staphylococcus aureus* Secreted Toxins and Extracellular Enzymes, *Microbiol Spectr*, 7(2): 1-59.
- Tandelilin, R.T.C., and Saini, R., 2018. *Dental Plaque: A Biofilm*. Yogyakarta: Penerbit Kanisius.

- Tent, P.A., Juncar, R.I., Lung, T., and Juncar, M., 2018. Midfacial Fractures: A Retrospective Etiological Study Over a 10-Year Period in Western Romanian Population, *Niger J Clin Pract.*, 21(12), pp.1570-1575.
- Teughels, W., Van Assche, N., Sliepen, I. and Quirynen, M. (2006) 'Effect of material characteristics and/or surface topography on biofilm development', *Clinical Oral Implants Research*, 17(S2), pp. 68-81. <https://doi.org/10.1111/j.1600-0501.2006.01353.x>
- Thammavongsa, V., Kim, H. K., Missiakas, D., and Schneewind, O., 2015, Staphylococcal manipulation of host immune responses. *Nat. Rev. Microbiol.*, 13, 529-543.
- Thio, N.A.Y.L, Nagadia, R.H., Sim, J.X.Y., and Goh, B.T., 2022. Orofacial Infections Seen at A Specialist Dental Centre - A Retrospective Analysis of Causative Microbes and Their Antibiotic Sensitivities over 6 Years, *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology*, 34(4), pp.458-466.
- Tiwari, M., Meshram, V., Lambade, P., and Fernandes, G., 2019, Titanium lag screw versus miniplate fixation in the treatment of anterior mandibular fractures, *J. Oral Maxillofac. Surg.*, 77:1031-9.
- Tkany, L., Hofstätter, B., Petersik, A., Miehling, J., Wartzack, S., and Sesselmann, S., 2019, New Design Process for Anatomically Enhanced Osteosynthesis Plates, *J. Orthop. Res.*, 37:1508-1517.
- Tomaz, F.M.A, Oliveira, H.F., Aranha, A.M.F, Estrela, C.R.A., Borba, A.M., Estrela, C., and Guedes, O.A., 2020. Chemical and Structural Evaluation of Internal Fixation Materials for Facial Fractures, *International Journal of Advanced Engineering Research and Science (IJAERS)*, 7(9), pp.368-377.
- Tomaz, G., de Lima, R., dos Santos, T. and Alves, M., 2020. Morphological analysis of six commercial miniplates. *Journal of Craniofacial Surgery*, 31(5), pp.1301-1305.
- Torgersen, S. and Gjerdet, N.R. (1994) 'Retrieval study of stainless steel and titanium miniplates and screws used in maxillofacial surgery', *Journal of Materials Science: Materials in Medicine*, 5(5), pp. 256-262.
- Trivellato, P. F., Pepato, A. O., Ribeiro, M. C., Sverzut, C. E., and Trivellato, A. E. 2014. In Vitro Evaluation of The Resistance of a 2.0-mm Titanium Fixation System in the Sectioned Angle Without Continuity of The Inferior Border of The Mandible. *International Journal of Oral and Maxillofacial Surgery*, 43, 559-563.
- Valverde N.F., Valverde A.L., Cortez M.P., Rodrigues C., Sousa B.M.D., and Aragonese J.M., 2022. Bone Quantification Around Chitosan-Coated Titanium Dental Implants: A Preliminary Study by Micro-CT Analysis in Jaw of a Canine Model, *Front Bioeng Biotechnol.* 7(2):1-9.
- Van der Cruyssen, F., Forrest, M., Holmes, S., and Bhatti, N. (2025). A systematic review and meta-analysis of fracture-related infections in maxillofacial trauma. *Journal of Clinical Medicine*, 14(4), 1332.
- Van der Cruyssen, F., Forrest, M., Holmes, S., and Bhatti, N. (2025). A Systematic Review and Meta-Analysis of Fracture-Related Infections in Maxillofacial Trauma. *Journal of Clinical Medicine*, 14(4), 1332.

- Van der Cruyssen, F., Peeters, B., Verstraete, L., dkk., 2025. Prevalence and risk factors for infection following mandibular fracture repair: a meta-analysis. *Journal of Craniofacial Surgery*, [
- Venkatachalam, V., Meyappan, A., Pandiarajan, R., Anbukkarasu, H., and Mohan, K. (2024). Enhancing the Adaptation of Single Non-compression Miniplate in the Management of Angle Fractures. *Journal of Pharmacy and Bioallied Sciences*, 16(Suppl 2), S1742-S1744.
- Venkatesan, G., and Sahoo, N., 2021. Incidence of Plate Removal and its Correlation to the Site of Injury in Patients with Maxillofacial Trauma: A Retrospective Study. *International Journal of Medical and Dental Sciences*, 10(2), pp.2454-8952.
- Vishal, P., Prajapati, V.K., Shahi, A.K. and Prakash, O., 2020. Significance of microbial analysis during removal of miniplates at infected sites in the craniomaxillofacial region-An evaluative study. *Annals of Maxillofacial Surgery*, 10(2), pp.330.
- Voss, J.O., Varjas, V., Raguse, J.D., Thieme, N., Richards, R.G., and Kamer, L., 2016, Computed tomography-based virtual fracture reduction techniques in bimaxillary fractures, *J. Cranio-Maxillofac. Surg.*, 44:177-185.
- Walter, N., Mendelsohn, D., Brochhausen, C., Rupp, M., and Alt, V., 2021, Intracellular *Staphylococcus aureus* in Osteoblasts in a Clinical Sample from a Patient with Chronic Osteomyelitis-A Case Report, *Pathogens*, 10:1-4.
- Wang Z, de la Fuente-Núñez C, Shen Y, Haapasalo M, Hancock RE. 2015. Treatment of oral multispecies biofilms by an anti-biofilm peptide. *PLoS One*;10: e0132512.
- Wang, Y., Li, X., Zhang, C., Liu, H. and Chen, Y. 2023. Deformation-induced microstructural changes in titanium plates used in maxillofacial surgery: implications for clinical adaptation. *Materials Science and Engineering: C*, 148, p.114832. <https://doi.org/10.1016/j.msec.2023.114832>
- Wang, Y., Wu, S., Zhao, X., Zhang, Z. and Liu, H. 2023. 'Comparative analysis of surface characteristics between 3D-printed and manually contoured titanium miniplates', *Journal of Biomedical Materials Research Part B: Applied Biomaterials*, 111(5), pp. 1123-1132.
- Wang, Z., Shen, Y., and Haapasalo, M., 2014. Dental Materials with Antibiofilm Properties. *Dental Materials : Official Publication of the Academy of Dental Materials*, 30(2), pp.e1-e16.
- Warin, K., Limprasert, W., Suebnukarn, S., Inglam, S., Jantana, P., and Vicharueang, S., 2022. Assessment of Deep Convolutional Neural Network Models for Mandibular Fracture Detection in Panoramic Radiographs, *International Journal Of Oral And Maxillofacial Surgery*, 51(11), pp.1488-1494.
- Watanabe, T., Hara, Y., Yoshimi, Y., Fujita, Y., Yokoe, M., and Noguchi, Y., 2020, Clinical characteristics of bloodstream infection by *Parvimonas micra*: retrospective case series and literature review, *BMC Infectious Disease*, 578:1-12.

- Wenzel, R.N., 1936. Resistance of solid surfaces to wetting by water. *Industrial and Engineering Chemistry*, 28(8), pp.988-994.
<https://doi.org/10.1021/ie50320a024>
- Wiargitha, I.K., Wiradana, AAGA, and A.A., 2019. Patterns of Fracture Site and Management of Maxillofacial Trauma Cases in The Department of Trauma and Acute Care Surgery in Sanglah General Hospital, *DOAJ*, 3(2), pp.50-55.
- Wick, E.H., Deutsch, B., Kallogjeri, D., Chi, J.J., and Branham, G.H., 2021. Effectiveness of Prophylactic Preoperative Antibiotics in Mandible Fracture Repair: A National Database Study. *Otolaryngol Head Neck Surg*.165(6), pp.798-808.
- Wijendra, A., Irhamsyah, A., Kurniawati, E., dkk., 2023. Multidisciplinary approach and host optimization for fracture-related infection management. *Journal of Clinical Medicine*, 12(4), p.1332.
- Wildemann, B., and Jandt, K.D., 2021, Infections @ Trauma/Orthopedic Implants: Recent Advances on Materials, Methods, and Microbes-A Mini-Review, *Materials*, 14 (5834):1-11.
- Wimpenny J, Manz W, and Szewczyk U. 2016. Heterogeneity in biofilms. *FEMS Microbiol Rev*;24:661-71.
- Woitschach, F., Hänsch, G.M., Frick, J.S., van Gumpel, E. and Brockhaus, F. 2022 'Biofilm formation of *Enterococcus faecalis* and resistance to surface modification in medical implants', *Frontiers in Cellular and Infection Microbiology*, 12, p. 868338.
- Wong, A., Goonewardene, M. S., Allan, B. P., Mian, A. S., and Rea, A., 2021. Accuracy of Maxillary Repositioning Surgery using CAD/CAM Customized Surgical Guides and Fixation Plates, *International Journal of Oral and Maxillofacial Surgery*, 50(4), pp.494-500.
- Wong, R.M.Y., Li, T.K., Li J, H., W.T., Chow, S.K., Leung, S.S.Y., Cheung, W.H., and Ip, M., 2020. A Systematic Review on Current Osteosynthesis-Associated Infection Animal Fracture Models. *J Orthop Translat*, 23(20), pp.8-20.
- World Health Organization. 2011. *World health statistics 2011*. World Health Organization.
- Wusiman, P., Taxifulati, D., Weidong, L., and Moming, A., 2019, Three-dimensional versus standard miniplate, lag screws versus miniplates, locking plate versus non-locking miniplates: management of mandibular fractures, a systematic review and meta-analysis, *J Dent Sci.*,14:66-80.
- Xi., Yang, K., Dai, K., 2021, Antibacterial Effect of a Copper-Containing Titanium Alloy Against Implant-Associated Infection Induced by Methicillin-Resistant *Staphylococcus aureus*, *Acta Biomater* 119, 472-484.
- Xu, L., Zhang, J., Wang, W., Wang, C. and Zhu, Y., 2021. Mandibular fracture patterns and plate biomechanics. *Journal of Craniofacial Surgery*, 32(1), pp.e58-e63.
- Xu, X., Cheng, K.J., Liu, Y.F., Fan, Y.Y., Wang, J.H., Wang, R., Baur, D.A., Jiang, X.F., and Dong, X.T., 2021, Experimental validation of finite element

- simulation of a new custom-designed fixation plate to treat mandibular angle fracture, *Biomed. Eng. Online*, 20: 15-23.
- Yamamoto, K., Matsusue, Y., Horita, S., Murakami, K., Sugiura, T., and Kirita, T., 2015. Routine Removal of The Plate After Surgical Treatment for Mandibular Angle Fracture with a Third Molar in Relation to The Fracture Line, *Annals of Maxillofacial Surgery*, 5(1), pp.77-81.
- Yamamoto, M.K., D'Avila, R.P., and Luz, J.G.C., 2013, Evaluation of Surgical Retreatment of Mandibular Fractures, *Jornal of Cranio-Maxillo-Facial Surgery*, 41: 42-46.
- Yang, G.L., He, F.M., Hu, J.A., Wang, X.X. and Zhao, S.F. 2010. 'Biomechanical comparison of biomimetically and electrochemically deposited hydroxyapatite-coated porous titanium implants', *Journal of Oral and Maxillofacial Surgery*, 68(2), pp. 420-427.
- Yang, S., Meng, X., Zhen, Y., Baima, Q., Wang, Y., Jiang, X. and Xu, Z. 2024. Strategies and mechanisms targeting *Enterococcus faecalis* biofilms associated with endodontic infections: a comprehensive review. *Frontiers in Cellular and Infection Microbiology*, 14, 1433313
- Yavari S.A., Castenmiller, S.M., and Jos A. G., van Strijp, M.C., 2020, Combating Implant Infections: Shifting Focus from Bacteria to Host, *Adv.Mater*, 32:1-25.
- Yip, K,H, and Smales R.J., 2018. Implications of oral biofilms in medically at-risk persons. *J Biomed Res*;26:1-7.
- Yoda, I., Koseki, H., and Tomita, M., 2014, Effect of surface roughness of biomaterials on *Staphylococcus epidermidis* adhesion, *BMC Microbiol*, 2(14):234.
- Yotsova, R. and Peev, S., 2024 'Biological properties and medical applications of carbonate apatite: A systematic review', *Pharmaceutics*, 16(2), p. 291.
- Yue, R., Niu, J., Li, Y., Ke, G., Huang, H., and Pei, J., 2020, In Vitro Cytocompatibility, Hemocompatibility and Antibacterial Properties of Biodegradable Zn-Cu-Fe Alloys for Cardiovascular Stents Applications, *Mater Sci. Eng. C Mater Biol. Appl.*, 113, 111007.
- Yulianto, H.D.K., Rinastiti, M., Cune, M.S., Haan-Visser, W.D., Atema-Smit, J., Busscher, H.J., and Mei, H.C., 2019. Biofilm Composition and Composite Degradation during Intra-Oral Wear. *Dental Materials*. 35(5): pp.740-750.
- Zhang, W., Wang, G., Liu, Y., Zhao, X., Zou, D., Zhu, C., Jin, Y., Huang, Q., Sun, J., Liu, X., Jiang, X. and Zreiqat, H. (2013) 'The synergistic effect of hierarchical micro/nano-topography and bioactive ions for enhanced osseointegration', *Biomaterials*, 34(13), pp. 3184-3195.
- Zhao F., Yang H., Bi D., Khaledi A., and Qiao M., 2020, A systematic review and meta- analysis of antibiotic resistance patterns, and the correlation between biofilm formation with virulence factors in uropathogenic *Escherichia coli* isolated from urinary tract infections, *Microbial Pathogenesis*. 144 (2) 1-6.
- Zheng, D., Neoh, K.G., Shi, Z., and Kang, E.T., 2013. Assessment of Stability Of Surface Anchors for Antibacterial Coatings and Immobilized Growth Factors On Titanium, *Journal of Colloid and Interface Science.*, 406, pp.238-246.

Zimmerli, W., 2014, Clinical presentation and treatment of orthopaedic implant-associated infection, *J. Intern. Med*, 276, 111-119.

Zirk, M., Markewitsch, W., Peters, Fr., Kröger, N., Lentzen, M.P., Zöller, J., and Zinser, M., 2023. Osteosynthesis-Associated Infection in Maxillofacial Surgery by Bacterial Biofilms: A Retrospective Cohort Study of 11 Years, *Clinical Oral Investigations*, pp.1-10