

PAIN MANAGEMENT CARE IN DRY SOCKETS CASE AFTER MAXILARY RIGHT SECOND INCISOR EXTRACTION

*Asuhan Manajemen Nyeri pada Kasus Dry Socket Paska Pencabutan Gigi
Insisivus Kedua Rahang Atas Kanan*

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ABSTRAK

Nyeri yang timbul akibat dry socket sangat mengganggu aktivitas sehari-hari klien. Rasa nyeri ini dapat berlangsung selama beberapa hari hingga minggu, dan dapat semakin parah saat makan atau minum. Asuhan manajemen nyeri pada kasus dry socket merupakan hal yang penting untuk dilakukan. Manajemen nyeri dapat mengurangi rasa nyeri dan ketidaknyamanan, sehingga klien dapat kembali beraktivitas secara normal. Studi kasus ini bertujuan mengetahui penurunan rasa nyeri pada klien penderita dry socket paska pencabutan gigi 22. Metode yang digunakan adalah laporan kasus dengan pendekatan konsep asuhan kesehatan gigi dan mulut yang terdiri dari proses pengkajian, diagnosis, perencanaan, implementasi dan evaluasi. Subjek pada studi kasus ini adalah Tn AP dengan keluhan satu minggu paska pencabutan gigi 22 daerah luka sekitar gusi terasa nyeri yang hebat. Subjek studi diberikan intervensi berupa asuhan manajemen nyeri. Pengukuran rasa nyeri menggunakan Numeric Rating Scale (NRS). Hasil pengkajian awal menunjukkan klien mengalami dry socket disertai nyeri skala 6. Asuhan manajemen nyeri yang diberikan pada klien memperlihatkan penurunan nyeri secara bertahap menjadi skala 0 pada minggu ke-2. Klien memilih teknik distraksi, teknik fisiologis atau pijatan, terapi musik dan terapi termal panas yang dianggap nyaman dan efektif untuk mengatasi nyeri. Hasil evaluasi yang didapatkan yaitu terpenuhinya kebutuhan akan bebas dari rasa nyeri pada leher dan kepala, klien dapat mengimplementasikan teknik-teknik manajemen nyeri non-farmakologi. Intervensi asuhan manajemen nyeri dapat dijadikan alternatif penanggulangan kasus dry socket paska pencabutan gigi.

Keywords : manajemen nyeri, dry socket

ABSTRACT

Pain that arises consequence of a dry socket interferes with the client's daily activities. This pain can last for several days to weeks and becomes worse when eating or drinking. Pain management care in dry socket cases is an important thing to do. Pain management can reduce pain and discomfort so that clients can return to normal activities. This case study aims to determine the reduction in pain in clients suffering from dry sockets after tooth extraction 22. The method used is a case report with a conceptual approach to dental and oral health care consisting of a process of assessment, diagnosis, planning, implementation, and evaluation. The subject in this case study is Mr AP who complained that one week after the extraction of 22 teeth the wound area around the gums felt severe pain. Study subjects were given intervention in the form of pain management treatment. Pain measurement uses the Numeric Rating Scale (NRS). The results of the initial assessment showed that the client experienced dry socket accompanied by pain on a scale of 6. The pain management care provided to the client showed a gradual decrease in pain to a scale of 0 in the 2nd week. Clients choose distraction techniques, physiological techniques or massage, music therapy, and hot thermal therapy which are considered comfortable and effective for dealing with pain. The evaluation results

obtained are that the need to be free from pain in the neck and head is fulfilled, and the client can implement non-pharmacological pain management techniques. Pain management intervention can be used as an alternative to treat dry socket cases after tooth extraction.

Keywords: *care management pain, dry sockets*

INTRODUCTION

Dry sockets are the most common postoperative complication following tooth extraction, with an incidence of 1%–4% worldwide. The occurrence is more common in the lower teeth and reaches 45% in the mandibular third molars [1]. The clinical picture of a dry socket is very clear, characterized by the emergence of severe pain after extraction for around 24-36 hours. This is caused by the opening of the socket in the loose tooth. A socket that has been contaminated by bacteria and severe trauma to the jaw bone that is difficult to remove will cause pain that lasts for a long time and spreads to the ear.

Interestingly dry sockets may occur in patients healthy and patients with medical disorders and whose healing process is delayed even after appropriate intervention. *Dry sockets* are known as *osteitis* local or vocal and clinically manifest as inflammation covering one or all parts of the dense bone layer in the tooth socket (*lamina dura*). *Dry sockets* are described as a complication of blood clot disintegration intra alveolar. The tooth extractions began on the second day and continued until the fourth. Risk factors for the development of a dry socket after a tooth extraction include smoking, gender and the menstrual cycle [2][3]. The incidence of dry socket following odontectomy was significantly higher in smokers than in non-smokers. This correlation is likely due to the harmful effects of nicotine on blood clot formation within the extraction sockets [4][5].

The incidence of *dry sockets* can be minimized with the administration of prophylaxis or preventive measures by the operator. Prevention is more effective than treatment [6][7]. One way to prevent pain due to dry socket is to carry out pain management. The goal of pain management is to help the patient control or manage pain effectively, reduce the negative effects of pain, aid in the healing process, improve quality of life, and minimize pain and suffering [8].

Pharmacological approaches are more widely used in pain management, but non-pharmacological approaches are effective treatments for mild pain have few side effects, and are cheaper [9]. There are several types of management non-pharmacological namely *technique relaxation, distraction, massage, ice and heat therapy, electrical nerve stimulation transcutaneous, hypnosis, guided imagery, and music* [10][11][12]. The client's pain may be reduced by providing pharmacological intervention, but non-pharmacological intervention plays an important role in supporting, not replacing, pharmacological intervention. In the acute stage of the disease, the client may be unable to participate in management actions for pain, but when the client's mental and physical abilities are good then they can be taught management techniques for non-pharmacological pain relief to reduce pain [13]. This case report describes the treatment of a dry socket in a patient at the Special Dental and Oral Hospital (RSKGM) in Bandung. The treatment involved implementing pain management care. The aim of this case report is to determine the effect of pain management care in cases of dry sockets after tooth extraction 22

CASE REPORT

The client came with a complaint that the teeth at the front of the upper jaw that had been extracted felt throbbing pain reaching the head and ears, the pain started 3 days after the tooth extraction. The client last visited RSKGM Bandung City on February 2023 to have 22 teeth extracted and was given antibiotics and analgesics. Clients come with the hope that the pain due to extraction can be resolved well

Examination of the patient's general condition was good, there was no history of systemic disease or allergies. The client has a bad habit, namely smoking. and the results of the extra-oral examination did not reveal any abnormalities. Clinical examination results intra-orally the data obtained are as follows:

Table 1. Inspection intraorally

No	Intra Orally	Information
1	Cheek mucosa	No abnormality
2	Lip mucosa	No abnormality
3	Tongue	No abnormality
4	Palatum	No abnormality
5	Base of tongue	No abnormality
6	Salivary flow	No abnormality
7	Gingival	The sockets appears red and dry
8	Tooth teeth	Tooth 22 with caries, was extracted
9	Plaque	Plaque was found on the upper and lower jaw
10	Calculus	alculus was found on the upper and lower jaw

Table 1 shows signs of inflammation in the gingival area of tooth 22 after extraction.

At the first visit, the dental therapist acts as an operator who carries out management care, pain control, and infection control in patients, prepares sterile equipment, and carries out personal hygiene according to WHO standards. The operator carries out subjective and objective examinations, in this case, examining the local status of tooth 22. Furthermore, at the 1st, 2nd, and 3rd visits, the dental therapist carries out assessment actions which consist of Assessment (*Subjective and Objective*), Diagnosis (*Assessment*), Planning (*Planning*), Implementation (*Implementation*), Evaluation (*Evaluation*) and Documentation And poured into the record medical *SOAPIE* [14].

The results of the diagnosis of dental and oral health care are shown in table 2 below:

Table 2. Diagnosis Dental and Oral Health Care on Visit 1, 2, and 3

Visit	Diagnosis Oral Health Care	Dental Hygiene Diagnosis	
	Lack of fulfillment of basic human needs	Reason	Symptoms
Visit 1	1. No fulfillment will give a healthy facial impression	Lost on tooth front	Missing teeth teeth 22
	2. No fulfillment of the need to be free from pain in the head and neck	Painful on gum the inflammatory one	Client grimacing in pain, Scale painful 6
	3. No fulfillment integration (integrity) of skin, mucosa, and membrane tissue in the neck and head	There is swelling on sockets areas revocation 22	Color socket grayish-yellow
	4. No fulfillment of the need to be free from anxiety/ stress problems	Worried If his teeth hurt	Client sighe d his teeth hurt
Visit 2	1. No fulfillment will give a healthy facial impression	Lost tooth front	Missing teeth teeth 22
	2. No fulfillment of the need to be free from pain in the head and neck	Painful on gum the inflammatory one	The client is still in pain, and Scala is painful 2
	3. Insufficient (integrity) of skin tissue, mucosa, and membranes in the neck and head	There is swollen on sockets retraction	Reddish socket color
Visit 3	Lack of fulfillment of the need for a healthy facial impression	Lost of anterior tooth	Missing 22

Table 2 shows that four out of the eight basic human needs identified were not met for this client. This case report focuses on the further treatment of dry socket at RSKGM Bandung, including pain management implementation.

No fulfillment wholeness of skin and membrane mucosa on the neck and head is a consequence of wound retraction tooth 22 which is characterized by swelling in *the socket* tooth extraction on 1st visit. On a visit to II Still, there is inflammation around wound retraction. On the client's 3rd visit Already free from pain due to a dry socket.

Table 3. Planning, Implementation on Visit 1, 2 and 3

Visit	Objective Which centered on the client	Intervention Oral Health Care	Statement Evaluative
Visit 1	1. The client underwent subjective and objective examinations at 01/02/2023	1. Implementation inspection by internal dental therapist assessment stage	1. Evaluation NRS score painful 6 (The goal has been achieved)
	2. Client consulted to dental exodontia/collaboration section on 01/02-2023	2. Carrying out an examination by a dentist in the exodontia department	2. Sockets was inspected by dentist (Goal already achieved)
	3. Clients are given education about the management of pain with music therapy distraction, physiotherapy, relaxation and thermal therapy	3. Implementation of education about management pain by a dental therapist	
Visit 2	1. The client underwent subjective and objective examination on 09/02	1. Carrying out inspections by TGM in the assessment stage	1. Evaluation NRS score painful 2 (Purpose has been achieved)
	2. The client consulted with the dentist in the exodontia department / in collaboration with the dentist on 09/02	2. Carrying out inspections by the doctor tooth in the exodontia section	2. Inspection socket extraction with diagnosis <i>dry sockets</i> by dentist (Goal has been achieved)
	3. Clients will be evaluated regarding techniques for management pain on 09/02	3. The client explained the techniques of management pain that have been done at home	3. NRS pain scale from 6 becomes NRS score 2 (Goal has been achieved)
Visit 3	1. The client will undergo subjective and objective examination on 02/20	1. Carrying out inspections by Researchers in stage Assessment	1. NRS assessment pain score 0 which means Already No pain (Goal has been achieved)
	2. Clients will be evaluated regarding techniques for management pain on 02/20	2. The client explains the techniques of management pain which have been done at home	2. Subtraction scale painful NRS from 2 to NRS score 0 (Goal has been achieved).
	3. The client consulted with the dentist in the prosthetic department/collaboration with specialist prosthetics dated 09/02	3. Carrying out inspections by the doctor tooth in the exodontia section	3. Inspection sockets removal with a diagnosis of <i>dry sockets</i> by Dr

Table 3 shows the results of the intervention care health teeth and mouth of the client Mr AP carried out by the therapist teeth at the 1st visit ie assessment. Based on the results assessment The client felt pain due to a dry socket of 6 on the NRS scale. Clients are given counseling regarding pain management using the *Chair Side Talk*

(CST) method on visits 1, 2, and 3. Management techniques for pain relief performed by a therapist tooth is distraction techniques, physiological techniques or massage, music therapy, and hot thermal therapy are considered comfortable and effective for treating pain. Giving education about pain management techniques can reduce scale pain in a way gradually in clients and becomes 0 at the 3rd visit (figure 1).

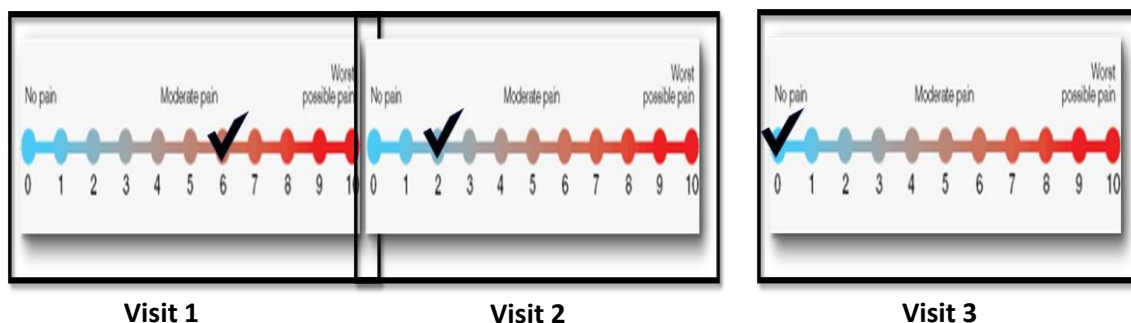


Fig.1 Pain Scale Mr.AP according to NRS on visit 1,2,3

The results of pain measurement at the 3rd visit showed that there was no pain. The application of non-pharmacological pain management therapy to clients has been well understood and implemented. As for the results dry socket inspection by personnel medical (dentist) shows healing (figure 2) . Figure 3 shows the dry socket healing process after non-pharmacological pain management for 7 days.



Figure 2. Findings Clinical Dental Dry Socket 22 on 1st Visit



Figure 3. Condition Dry Socket Area Teeth 22 on 2nd Visit

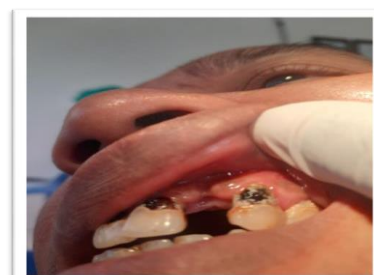


Figure 4. Gingival Condition of Area 22 Teeth at the 3rd Visit

After being given pain management techniques and the client practiced them for 2 weeks, the swelling around the extraction socket improved (figure 4). Results of the analysis of pain management care for the client, Mr. AP with dry socket cases, there is a decrease in the pain scale with a final result of 0, namely no pain with good results and recovery even though the client's 8 basic needs have not been met. Clients use distraction techniques, music therapy, physiotherapy therapy and warm thermal therapy

Case study regarding pain management care for the *Dry case Sockets* to the client Mr AP at the Special Dental and Oral Hospital (RSKGM) Bandung City which has been approved by the Bandung Health Polytechnic ethics committee with ethical certificate number No.36/KEPK/EC/I/2023.

DISCUSSION

According to theory, dental therapists can identify eight essential human needs that are relevant to oral health diagnosis and care. This client-centred approach emphasises the importance of understanding individual patient needs for the most effective treatment [14][15][16][17]. The eight basic human needs that are not met in the case of dental and oral health can be identified by a dental therapist, and these refer to client-centred end goals. The client is characterized by the client not knowing about dental and oral diseases, especially education after tooth extraction, which results in *dryness sockets* on the 3rd day after tooth extraction, one of the reasons was the client smoking after tooth extraction. *Dry sockets* are depicted as a complication of disintegration clot blood intra alveolar, which started since day second to fourth after tooth extraction [7][18].

Based on the results of interviews with clients, *dry sockets* experienced are most likely caused after tooth extraction for 22 clients smoke. The study found that smokers own risk two to three times higher rates of dry sockets than non-smokers [4]. Patients who smoked on the day of surgery had a higher incidence of dryness much higher socket than those who smoked on the day second day second after operation. Increased frequency of smoking and smoking after surgery significantly increases the prevalence of dry sockets. Smoking is associated with a higher incidence of dry socket, and complications after mandibular third molar extraction surgery increase with smoking habits, age, degree of enucleation (removal of the cell nucleus), and extraction sites [5].

Dry sockets around the tooth extraction site will increase their severity between the first day and third day after extraction, accompanied by partial or total disintegration of the blood clot within the *alveolar socket* with or without *halitosis* [7][19]. Pain that occurs in dry cases socket is caused by plasminogen being converted into plasmin, which causes blood clots to rupture disintegration fibrin and at the same time also releasing quinine from quininogen, which is also in the blood clot causing severe pain [19][20]. Taste measurement painful The experienced client used the *Numerical Ratings Scale (NRS)* and reached a score of 6, flavor painful spread from the extraction wound to the ears and head. *NRS* is used to assess the intensity of a client's pain and identify the severity of pain. Categorized the *NRS* score as 1-3 (mild pain), 4-6 (moderate pain), and 7-10 (severe pain) [21].

Management of pain in dry cases sockets can be done pharmacologically and non-pharmacologically. Non-pharmacological pain management, especially relaxation, needs to be mastered by dental therapists, considering the high percentage of pain incidents after tooth extraction. The non-pharmacological approach is an effective treatment for mild pain that has few side effects and is cheaper [22][23]. Stated that clients will feel safe with non-pharmacological therapy because it is easily available and can be done at home or in a treatment facility environment [24].

Non-pharmacological treatment is carried out as follows: 1) Heat therapy has the advantage of increasing blood flow to an area and possibly reducing pain by speeding up healing 2) Technique massage Which can done that is, squeezing the shoulder muscles, alternating hands massaging the back with short, fast and alternating pressure, penetration by pressing the back horizontally then moving the hand in the opposite direction using a squeezing motion, gentle brushing pressure, pressing the back using the tips of the fingers to ending the massage 3) Relaxation is a method of pain control non pharmacology which most often used in English. This method utilises education and breathing exercises to reduce pain by controlling the intensity of the reaction to pain and reducing the sensation of pain. Relaxation techniques can be used to create a calm environment, determine a comfortable position, concentrate on an object or visual image, and release tension. Distraction techniques, such as engaging in a difficult task or breathing gently and rhythmically in a regular manner, can be used to divert the client's attention from the pain. Therapy music is an interpersonal

process used to influence physical, emotional, mental, aesthetic, and spiritual conditions, support the learning process, and build self-confidence [20][24].

CONCLUSION

The implementation of non-pharmacological pain management for dry socket cases is a safe, cost-effective, and proven measure for pain relief. Based on clinical findings, observations, and subjective examinations of patients, it can be concluded that the non-pharmacological treatment was successful in relieving pain caused by dry sockets after tooth extraction. The patient expressed satisfaction with the non-pharmacological pain management techniques.

REFERENCES

- [1] R. M. Alemán Navas and M. G. Martínez Mendoza, "Case Report: Late Complication of a Dry Socket Treatment," *Int. J. Dent.*, vol. 2010, pp. 1–4, 2010, doi: 10.1155/2010/479306.
- [2] M. Taberner-Vallverdú, M. Á. Sánchez-Garcés, and C. Gay-Escoda, "Efficacy of different methods used for dry socket prevention and risk factor analysis: A systematic review," *Med. Oral Patol. Oral Cir. Bucal*, vol. 22, no. 6, pp. e750–e758, 2017, doi: 10.4317/medoral.21705.
- [3] N. V. A. Puspitasari, B. Sumaji, and N. Pranata, "Gambaran Komplikasi Post Odontektomi Gigi Impaksi Molar Ketiga Rahang Bawah Tahun 2018 di RSGM X Bandung," *SONDE (Sound Dent.)*, vol. 4, no. 2, pp. 12–23, 2019, doi: 10.28932/sod.v4i2.1913.
- [4] C. F. Poluan, P. S. Anindita, and C. N. Mintjelungan, "Dry Socket in Smokers after Odontectomy," *E-GiGi*, vol. 10, no. 2, pp. 176–181, 2022, doi: 10.35790/eg.v10i2.39676.
- [5] W. Kuśnierek, K. Brzezińska, K. Nijakowski, and A. Surdacka, "Smoking as a Risk Factor for Dry Socket: A Systematic Review," *Dent. J.*, vol. 10, no. 7, pp. 1–14, 2022, doi: 10.3390/dj10070121.
- [6] B. Tarakji, L. A. Saleh, A. Umair, S. N. Azzeghaiby, and S. Hanounh, "Systemic Review of Dry Socket: Aetiology, Treatment, and Prevention," *J. Clin. Diagnostic Res.*, vol. 9, no. 4, pp. ZE10–ZE13, 2015, doi: 10.7860/JCDR/2015/12422.5840.
- [7] I. R. Blum, "Contemporary views on dry socket (alveolar osteitis): A clinical appraisal of standardization, aetiopathogenesis and management: A critical review," *Int. J. Oral Maxillofac. Surg.*, vol. 31, no. 3, pp. 309–317, 2002, doi: 10.1054/ijom.2002.0263.
- [8] J. Wetherell, L. Richards, P. Sambrook, and G. Townsend, "Management of acute dental pain: A practical approach for primary healthcare providers," *Contemp. Clin. Dent.*, vol. 24, no. 8, p. 144, 2010.
- [9] A. Kamal, B. Salman, N. H. Ar, and A. R. Samsudin, "Management of dry socket with low-level laser therapy," *Clin. Oral Investig.*, vol. 25, no. 3, pp. 1029–1033, 2021, doi: 10.1007/s00784-020-03393-3.
- [10] C. D. Mayasari, "The Importance of Understanding Non-Pharmacological Pain Management for a Nurse," *J. Wawasan Kesehatan.*, vol. 1, no. 1, pp. 35–42, 2016.
- [11] R. Risnah, R. HR, M. U. Azhar, and M. Irwan, "Terapi Non Farmakologi Dalam Penanganan Diagnosis Nyeri Pada Fraktur :Systematic Review," *J. Islam. Nurs.*, vol. 4, no. 2, p. 77, 2019, doi: 10.24252/join.v4i2.10708.
- [12] T. Serena, R. Yaakov, S. Aslam, and R. Aslam, "Preventing, minimizing, and managing pain in patients with chronic wounds: challenges and solutions," *Chronic Wound Care Manag. Res.*, vol. Volume 3, pp. 85–90, 2016, doi: 10.2147/cwcmr.s85463.
- [13] V. R. Yunizar, J. Mita, and L. H. Andayani, "Pengaruh Musik Instrumental terhadap Kecemasan Pasien pada Tindakan Perawatan Gigi dan Mulut," *E-GiGi*, vol. 12, no. 2, pp. 192–198, 2023, doi: 10.35790/eg.v12i2.50562.

- [14] Darby, M. Leonardi, G. W. Hirschfeld, and M. M. Walsh, *Dental Hygiene Theory and Practice Fourth Edition*. 2015.
- [15] S. Mardelita, J. S. Sukendro, and I. Astit Karmawati, *Pelayanan Asuhan Kesehatan Gigi Dan Mulut Individu*. Jakarta Selatan: Pusat Pendidikan Sumber Daya Manusia Kesehatan, 2018.
- [16] E. Gultom and R. P. Dyah, *Konsep Dasar Pelayanan Asuhan Kesehatan Gigi Dan Mulut I*. Pusat Pendidikan Sumber Daya Manusia Kesehatan, 2017.
- [17] Asmadi, "Teknik Prosedural Keperawatan: Konsep dan Aplikasi Kebutuhan Dasar Klien." 2008.
- [18] B. A. Tegegne, G. F. Lema, D. Y. Fentie, and Y. B. Bizuneh, "Severity of wound-related pain and associated factors among patients who underwent wound management at teaching and referral hospital, northwest ethiopia," *J. Pain Res.*, vol. 13, pp. 2543–2551, 2020, doi: 10.2147/JPR.S276449.
- [19] A. Kolokythas, E. Olech, and M. Miloro, "Alveolar Osteitis: A Comprehensive Review of Concepts and Controversies," *Int. J. Dent.*, vol. 2010, pp. 1–10, 2010, doi: 10.1155/2010/249073.
- [20] J. Mamoun, "Dry socket etiology, diagnosis, and clinical treatment techniques," *J. Korean Assoc. Oral Maxillofac. Surg.*, vol. 44, no. 2, pp. 52–58, 2018, doi: 10.5125/jkaoms.2018.44.2.52.
- [21] E. E. Krebs, T. S. Carey, and M. Weinberger, "Accuracy of the pain numeric rating scale as a screening test in primary care," *J. Gen. Intern. Med.*, vol. 22, no. 10, pp. 1453–1458, 2007, doi: 10.1007/s11606-007-0321-2.
- [22] S. Fathona, "Upaya Penatalaksanaan Nyeri Dengan Teknik Relaksasi," *Jurnal Keperawatan Notokusumo*, vol. III, pp. 56–60, 2015.
- [23] A. Kumarswamy, "Multimodal management of dental pain with focus on alternative medicine: A novel herbal dental gel," *Contemp. Clin. Dent.*, vol. 7, no. 2, pp. 131–139, 2016, doi: 10.4103/0976-237X.183066.
- [24] M. Karnure and N. Munot, "Review on conventional and novel techniques for treatment of Alveolar osteitis," *Asian J. Pharm. Clin. Res.*, vol. 6, no. SUPPL.3, pp. 13–17, 2013.