Description of the Quality of Life in Patients with Impacted Mandibular Third Molar in Dental Polyclinic at Andalas University Hospital

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A B S T R A C T

Impacted third molar is a condition commonly encountered in day-to-day practice. Impacted teeth are abnormal positions of the teeth in the oral cavity, unable to erupt, usually causing apathological condition, and require treatment. It is associated with pathological conditions such as caries, root resorption, periodontal pocket formation in the distal mandibular second molar, cysts, andhalitosis. These conditions are health problems in the oral cavity that can interfere with daily activities.The presence of serious oral health problems will cause a decrease in quality of life. This study aims to determine the quality of life of patients with impacted third molar in Dental Polyclinic at Andalas University Hospital. the type of research to be conducted was a descriptive observational study using a cross-sectional approach. The sample of this study amounted to 40 respondents using the non-probability method with convenience sampling. The quality of life was measured using an Oral Health Impacted Profile (OHIP-14). The results of this study showed that 17,5% in a good category, 62.5% in a moderate category, and 20% in a poor category. The majority of subjects with impacted mandibular third molar in Dental Polyclinic at Andalas University Hospital had a quality of life in the moderate category.

Keyword: Impacted third molar, Oral Health Related Quality of Life, OHIP-14

INTRODUCTION

Impacted teeth refer to teeth that are positioned abnormally within the oral cavity, unable to erupt properly, often leading to pathological conditions and requiring treatment (Genç et al., 2022). A tooth is considered impacted if its eruption into functional occlusion is blocked by another tooth, bone, or soft tissue, and it fails to erupt according to its expected timeline (Alsaegh et al., 2022). The most commonly impacted tooth is the third molar, accounting for 16.7% to 68.6% of all impacted teeth, followed by maxillary canines, mandibular canines, and premolars (Sarica et al., 2019). Generally, third molars erupt between the ages of 17 and 25, but about 70% of the population experiences eruption failure (impaction) or even complete absence (agenesis) of these teeth (Soesilawati et al., 2022).

Impacted mandibular third molars are frequently encountered in dental practice. Patients typically visit the dental clinic only after experiencing symptoms such as pain or swelling (Gupta et al., 2020). Third molars that grow towards the second molar can cause infections, leading to a condition called pericoronitis, an inflammatory pathology commonly observed in individuals aged 20 to 30 (Chisci et al., 2023). The signs and symptoms of pericoronitis include pain, swelling, difficulty opening the mouth (trismus), and dysphagia during the acute stage (Santos et al., 2020). Additionally, the pressure exerted by mesioangular or horizontally impacted third molars on adjacent teeth can make them prone to distal caries. Impacted third molars are also associated with other pathological conditions such as root resorption, periodontal pocket formation on the distal side of the second molar, cysts, and halitosis (Alsaegh et al., 2022).

Poor oral health, including impacted third molars, can significantly affect an individual's quality of life. According to the World Health Organization (WHO), quality of life is defined as an individual's perception of their position in life within the context of their culture, value systems, personal goals, expectations, and concerns (Spanemberg et al., 2019). Oral health-related quality of life (OHRQoL) is an integral part of overall health and well-being. Poor oral health can directly impact physical and mental health, influencing a person’s ability to speak, chew, taste, swallow, and even affect their self-esteem (Purisinsith et al., 2022).

Several instruments are available to measure OHRQoL, with the Oral Health Impact Profile-14 (OHIP-14) being a commonly used tool. This instrument evaluates patients’ perceptions of how oral health problems affect their lives, including pain, functional limitations, and psychosocial impact

(Ratnawidya et al., 2018). Initially developed as OHIP-49, it was later shortened to OHIP-14, which contains 14 questions and maintains the same effectiveness while being quicker to administer. It assesses seven dimensions: functional limitations, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and handicap (Suwargiani et al., 2017). Research has shown that a significant negative impact on quality of life is observed in many individuals seeking treatment for complaints related to impacted third molars, with a threefold increase in those experiencing pain and swelling compared to asymptomatic individuals (Doni et al., 2021). Understanding the impact of this condition on quality of life is crucial for addressing patients' needs and providing appropriate care.

RESEARCH METHODS

The research method used in this research is qualitative research, in this study a descriptive research design with a cross-sectional approach was used. Sampling in this study used the Non Probability Sampling method, with Convenience Sampling technique that met the inclusion and exclusion criteria in the period May - June 2024.

This technique is used by considering the convenience of researchers in data collection. The instrument used in this study was the Oral Health Impact Profile (OHIP-14) questionnaire.

The type of data collected in this study is primary data. Primary data is data obtained directly from research respondents. In this study, primary data in the form of OHIP-14 questionnaire results and patient panoramic x-rays.

RESULTS AND DISCUSSION

Research Results

This study aimed to describe the quality of life of patients with impacted mandibular third molars. The research was conducted at the Dental and Oral Clinic of Unand Hospital from May 20 to June 28, 2024, involving 69 patients, of whom 40 met the inclusion criteria. Data collection was performed using the Oral Health Impact Profile (OHIP-14) questionnaire, which was directly filled out by the patients. A non-probability sampling method with a convenience sampling technique was used.

Characteristics of Respondents

- **Gender Distribution**: Out of 40 respondents, 31 were female (77.5%) and 9 were male (22.5%).
- **Age Distribution**: Most respondents (60%) were in the late adolescent age group (17-25 years), followed by 32.5% in the adult group (26-45 years), and 7.5% in the elderly group (45-60 years).

Classification of Impactions

- **Pell and Gregory Classification**: The most common impaction type was Class IIA (35%), while the least common was Class IIIC (10%).
- **Winter's Classification**: Mesioangular impaction was the most prevalent (50%), followed by vertical (37.5%), horizontal (10%), and distoangular (2.5%).

Quality of Life Distribution

- **Overall Quality of Life**: The majority (62.5%) of respondents reported a moderate quality of life, 20% reported poor quality, and 17.5% reported good quality of life.
- **OHIP-14 Questionnaire Results**: The most frequent functional limitation was the inability to taste properly, reported by 27 respondents (67.5%). Physical pain was mainly reported in discomfort during chewing. Psychological discomfort was most commonly seen in worry (40% of respondents). Social disability and handicap dimensions showed that many respondents felt no issues with being irritable or restricted in daily activities.

Quality of Life Based on Classifications

- **Pell and Gregory Classification**: Poor quality of life was most prevalent in Class IIA patients (35.7%). No patients with Class IA or IIIC experienced poor quality of life.
- **Winter's Classification**: Poor quality of life was found in 20% of patients with mesioangular impaction and 26.7% with vertical impaction.

Quality of Life by Age

- Most respondents aged 17-25 (58.3%) and 26-45 (69.2%) reported a moderate quality of life. In the elderly group, 33.3% reported good quality of life, while the rest had moderate quality.

Quality of Life by Gender

- Among male respondents, 55.6% reported moderate quality of life, with 22.2% in both good and poor categories. For female respondents, 64.5% had moderate quality of life, 19.4% poor, and 16.1% good.

The study highlights that the majority of impacted mandibular third molar patients experienced a moderate impact on their quality of life, particularly in relation to functional limitations and psychological discomfort. Further care strategies are essential to address these quality-of-life concerns.

Discussion

Mandibular third molar impaction occurs when a tooth fails to erupt normally due to obstructions from nearby teeth, bone, or surrounding soft tissue. This condition can lead to symptoms such as pain, swelling, trismus, dysphagia, and other issues that affect a patient's daily life (Shaari et al., 2023; Santos et al., 2020). The study was conducted at the Dental and Oral Clinic of Unand Hospital from May 20 to June 28, 2024, involving 40 respondents who met the inclusion criteria. Their quality of life was assessed using the OHIP-14 questionnaire.

The study found that 20% of respondents experienced poor quality of life, 62.5% had a moderate quality of life, and 17.5% reported a good quality of life. The majority of respondents were female, which is consistent with previous research by Farihah (2021), who noted that mandibular third molar impaction is more prevalent in females than males (Septina et al., 2021). This difference can be explained by the shorter jaw growth period in females, which results in less space for the third molar to erupt (Fatkhurrohman et al., 2023).

Most respondents were between 17 and 25 years old, aligning with Salha's (2024) findings that most impaction cases occur in this age group (Al-Madani et al., 2024). The decrease in respondents' age over time may be due to early extractions (odontoectomy) performed in younger individuals when symptoms of impaction first appear (Akbar et al., 2023).

Radiographic findings revealed that most respondents had class II, position A mandibular third molar impactions. This result is similar to the study conducted by Farihah (2020) at Universitas Brawijaya Teaching Hospital, where class IIA impaction was the most common. Class II impaction is a partial impaction where part of the tooth is covered by bone. This condition is often due to a mismatch between the size of the jaw and teeth, resulting in insufficient space for the third molar to erupt (Akbar et al., 2023). The most common angulation of impaction was mesioangular, consistent with Alfadil's (2020) findings in Saudi Arabia (Akbar et al., 2023).

In terms of physical discomfort, the most commonly reported issue was pain and discomfort while chewing, which mirrors findings by Hup et al. (2019), who noted that soft tissue swelling caused by trauma from the maxillary third molar often leads to chewing difficulties. Psychologically, respondents frequently expressed feelings of worry and tension, which were linked to the pain they experienced. Oghli et al. (2020) stated that tension and anxiety are often triggered by pain, as it is an unpleasant experience. Anxiety is also related to negative thoughts about one's health, particularly changes in the oral cavity (Oghli et al., 2020). Physical dissatisfaction during eating was another frequent complaint, caused by limited jaw movement and food particles getting trapped near the third molar (Saputri et al., 2022).

Socially, most respondents reported minimal impact, as they were still able to carry out daily activities. However, some experienced a decline in their quality of life due to issues such as difficulty chewing, speaking, or discomfort from pain (Spanemberg et al., 2019).

Regarding impaction classification, patients with class II, position A impactions had worse quality of life, which aligns with Santos et al. (2020), who found that class IIA impactions are associated with greater psychological discomfort and disability. This type of impaction involves the third molar being partially covered by the mandibular ramus, creating a high risk of infection and other complications due to food trapping. Occlusal trauma from these partially impacted teeth also contributes to the development of pericoronitis.

The study also found that patients with mesioangular and vertical angulation of third molar impactions experienced poorer quality of life. Mesioangular impaction is often associated with distal caries on the second molar, pericoronitis, and periodontitis due to improper contact between the adjacent teeth, making it difficult to clean the area. Mesioangular impaction can also lead to external root resorption of the second molar due to the pressure exerted by the impacted tooth (Ye et al.,

2021). Vertical impaction, particularly when involving soft tissue impaction, increases the risk of pericoronitis as the occlusal surface of the third molar can come into contact with the pericoronal tissue.

Further research suggests that partially impacted teeth carry a 22-34% higher risk of pathological conditions compared to fully impacted mandibular third molars (Gupta et al., 2020). Ye et al. (2021) suggested that this increased risk is due to the partial impaction being closer to the oral environment, making it more exposed than fully impacted teeth.

Patients aged 17-25 were more likely to experience poor quality of life, as Genc et al. (2022) indicated that many undergo odontoectomy in their early twenties due to complications arising from mandibular third molar impaction. The decrease in quality of life for younger patients is likely related to the pressure and pain caused during the development of the tooth, which can lead to headaches and affect daily activities (Fitri et al., 2016). This age group also commonly experiences pericoronitis, which occurs frequently in the second and third decades of life (Chisci et al., 2023).

The study also found that females tend to have worse quality of life than males, likely due to their higher sensitivity to pain. This heightened pain sensitivity in females is influenced by hormones such as estrogen and progesterone. Estrogen promotes central and peripheral sensitization through pronociceptive effects, while progesterone lowers the pain threshold, making females more sensitive to pain compared to males (Hidayati et al., 2021).

Overall, the study concludes that mandibular third molar impaction significantly affects patients' quality of life, particularly in terms of physical discomfort and psychological stress, with females and younger individuals being more susceptible to the negative impacts.

CONCLUSIONS

Based on the results of research that has been conducted on the description of the quality of life of patients with impaction of mandibular third molars at the Dental and Oral Polyclinic of Unand Hospital, it can be concluded that:

a. Poor category quality of life is more in class II mandibular third molar impaction with position A.
b. Poor category quality of life occurs in patients with mandibular third molar impaction with mesioangular and vertical angulation
c. The level of quality of life based on age in the moderate and poor categories is dominated by the late adolescent age group (17-25 years).
d. The level of quality of life based on gender in the moderate and poor categories is dominated by women.
e. The majority of patients with impaction of mandibular third molars at the Dental and Oral Polyclinic of Unand Hospital for the period May 20 - June 28, 2024 have a level of quality of life in the moderate category.

REFERENCES

Akbar, M. F., Hadikrishna, I., Riawan, L., & Lita, Y. A. (2023). Impacted Lower Third Molar Profile at Dental Hospital of Padjadjaran University. *Journal of Indonesian Dental Association*, 5(2), 91.

Al-Madani, S. O., Jaber, M., Prasad, P., & Maslamani, M. J. M. Al. (2024). The Patterns of Impacted Third Molars and Their Associated Pathologies: A Retrospective Observational Study of 704 Patients. *Journal of Clinical Medicine*, 13(2).

Fatkhurrohman, F., Zam, S. N. A., Putri, D. H., Pulungan, K., & Ika, I. R. (2023). Description Of Patients With Odontectomy In Rsud Sultan Fatah Demak. *Interdental Jurnal Kedokteran Gigi (IJKG)*, 19(2), 222–227.

Fitri, A. M., Kasim, A., & Yuza, A. T. (2016). Impaksi gigi molar tiga rahang bawah dan sefalgia. *Jurnal Kedokteran Gigi Universitas Padjadjaran*, 28(3).

Genç, B. G. Ç., Orhan, K., & Hıncal, E. (2022). Maxillary and Mandibular Third Molars Impaction with Associated Pathologies in a North Cyprus Population: A Retrospective Study. *Applied Sciences (Switzerland)*, 12(11).

Gupta, P., Naik, S., Ashok, L., Khaitan, T., & Shukla, A. (2020). Prevalence of periodontitis and caries on the distal aspect of mandibular second molar adjacent to impacted mandibular third molar: A guide for oral health promotion. *Journal of Family Medicine and Primary Care*, 9(5), 2370.

Hidayati, H. B., Muhammad, H., Amelia, E. G. F., Turchan, A., Rehatta, N. M., & Atika. (2021). Pengaruh Usia dan Jenis Kelamin pada Skala Nyeri Pasien Trigeminal Neuralgia. *Jurnal Aksona*, 1(2), 53–56.

Hup, J. R., Ill, E. E., & Tucker, M. R. (2019). Contemporary Oral and Maxillofacial Surgery (7th ed.). *Elsevier*.

Oghli, I., List, T., Su, N., & Häggman-Henrikson, B. (2020). The impact of oro-facial pain conditions on oral health-related quality of life: A systematic review. *Journal of Oral Rehabilitation*, 47(8), 1052–1064.

Santos, J. F., Santos, L. C. R., da Silveira, E. M., Magesty, R. A., Flecha, O. D., Falci, S. G. M., Gonçalves, P. F., & Galvão, E. L. (2020). Does the third molar position influence periodontal status and overall condition of patients with acute pericoronitis? *Oral and Maxillofacial Surgery*, 24(4), 447–453.

Saputri, R. I., Sumantri, D. D. S., Tarigan, A. O. D., & Christabel, G. (2022). Third molars impaction pattern with associated pathologies in panoramic radiographs of West Java, Indonesian population. *Journal of Stomatology*, 75(3), 195–200.

Septina, F., Apriliani, W. A., & Baga, I. (2021). Prevalensi Impaksi Molar Ke Tiga Rahang Bawah Di Rumah Sakit Pendidikan Universitas Brawijaya Tahun 2018. *E-Prodenta Journal of Dentistry*, 5(2), 450–460.

Shaari, R., Nawi, M. A. A., Khaleel, A. K., & AlRifai, A. S. (2023). Prevalence and pattern of third molars impaction: A retrospective radiographic study. *Journal of Advanced Pharmaceutical Technology and Research*, 14(1), 46–50.

Spanemberg, J. C., Cardoso, J. A., Slob, E. M. G. B., & López-López, J. (2019). Quality of life related to oral health and its impact in adults. *Journal of Stomatology, Oral and Maxillofacial Surgery*, 120(3), 234–239.

Ye, Z. X., Qian, W. H., Wu, Y. B., & Yang, C. (2021). Pathologies associated with the mandibular third molar impaction. *Science Progress*, 104(2).