



Reasons of Removal of Wisdom Teeth among Libyan Population: A Cross Sectional Study

Ghada Salem Awad Ali^{1*}, Gada Abdul Hafiz Ahmed Ali¹

¹ Oral and Maxillofacial Surgery Department, Faculty of Dentistry, University of Benghazi, Libya.

Corresponding Author: Ghada Salem Awad Ali

Date of Submission: 10-03-2025

Date of Acceptance: 20-03-2025

ABSTRACT: Removing wisdom teeth is one of the most common surgical procedures carried out in dental clinics. There are various reasons for the removal of wisdom teeth. Dentists encounter a long list of reasons every day, including a patient's choice to extract a tooth that could otherwise be restored. The aim of the current cross-sectional study was to investigate the reasons of the wisdom teeth extraction, any reported complications, and related information among patients attending two private dental clinics in Benghazi, Libya. A questionnaire was filled by the doctor at the day of diagnosis. And later after the procedure was done. Three examiners were gathering the information. All information will be transferred to Microsoft excel sheet and data will be organized to be reported individually with relevance. The results revealed that the main causes of the third molar extraction were dental caries (64%), pain (26%), and pericoronitis (18%). While the most common chief complaint was pain (83%). Furthermore, the most extracted wisdom teeth were the upper left tooth (41%), followed by the upper right one (23%). The decision of the extraction was carried out mostly by the dental surgeon (46%); in most cases, the extraction was performed in a non-surgical procedure (65%). The most described drug after wisdom teeth extraction was analgesics (72%); in only 3% of cases, swelling and trismus complications occurred. It can be concluded that dental caries, pain, and pericoronitis is the primary reasons for tooth loss in the populations studied. The upper third molars were the most frequently extracted teeth.

KEYWORDS: Tooth extraction, tooth loss, wisdom teeth, reasons, Libya.

I. INTRODUCTION

Permanent molar teeth typically start to erupt in around the age of six, with the third molars, or wisdom teeth, being the last to emerge, usually between eighteen and twenty-four years old. Wisdom teeth can either come in properly aligned and functional or may develop in positions that are non-functional or only minimally

functional. Impaction happens when there isn't enough space for the tooth to fully erupt, or if there is an obstruction or abnormal positioning[1]. Wisdom teeth can be impacted, meaning they may only partially erupt or not erupt at all. This impaction can lead to various issues, such as pericoronitis, a higher risk of cavities and gum disease in nearby teeth, and potential orthodontic complications later in life[2].

Keeping teeth healthy is essential for general and oral health, as well as for social connections and life satisfaction. Even while tooth preservation has improved in many nations, high rates of tooth loss remain in some areas, frequently as a result of severe economic status problems[3]. Tooth loss is becoming a more relevant indicator of oral health and the quality of dental treatment provided in a community[4]. Recognizing the patterns of tooth loss within a community is vital for organizing dental health services. Tooth loss not only indicates how effective treatment methods are but also highlights the kinds and intensities of interventions required for that community. To establish a strong basis for these interventions, it is important to pinpoint the reasons behind tooth loss. Current perspectives on dental diseases in developing countries indicate that periodontal diseases are generally severe and widespread. Meanwhile, the prevalence of dental caries, which was previously low, is now increasing[5].

Tooth loss is a complex problem that doesn't just point to dental issues, but also reflects how easy or hard it is for people to get dental care. Staying updated on the latest trends in tooth loss is crucial for effectively organizing dental services and ensuring that dental education remains relevant. Tooth loss can have a significant impact on emotions and overall quality of life related to oral health, even when prosthetic replacements are utilized[6].

Currently, there is insufficient research in Libya to fully understand the the reasons of the wisdom teeth extraction and the related issues. This paper aims to explore the various patterns and causes of wisdom tooth loss, examining how these



factors differ according to the age and gender of patients in a randomly selected sample.

II. METHODOLOGY

Ethical consideration:

Permission was held from the Scientific Research Ethics Committee (SREC) of the Faculty of Dentistry, University of Benghazi (Approval No.#071). Informed verbal consent was obtained from all participants. The research was carried out in line with the Helsinki Declaration on research ethics.

Study design:

A cross-sectional study was carried out over a 12-month period, spanning from January 2022 to December 2022. The study was conducted involving patients visiting two private dental clinics in Benghazi, Libya, who were seeking the removal of their wisdom teeth. The aim was to collect information regarding the reasons for tooth extraction, whether the decision was made by the patient or the dentist, the type of procedure (surgical or non-surgical), and any complications reported, along with other relevant details.

Sampling:

This study included adult dental patients, 17 years old and up, who had their teeth extracted in two private dental clinics in Benghazi, Libya.

Data collection procedure:

All dentists participating in the study were informed about the objectives, data collection techniques, and how to fill out the forms. Data collection involved clinical examinations and interviews, using specially designed forms based

on previous research. The dental examination took place in the dental chair, employing a light, mouth mirror, and dental probe. The form includes details about the patient's demographic variables, such as age, gender, marital status, nationality, and residency. The data collected about the reasons of wisdom tooth extraction included the chief complaint; Chief complaint tooth; medical history.

The reasons for tooth extraction were classified into several categories: dental caries, swelling, periodontal disease, pain, pericoronitis, cysts, and trauma. Moreover, the survey included data about the decision of the extraction, whether it was decided by the patient, dentist, or both. The collected information was gathered on whether the extraction was done surgically or non-surgically, any prescribed drugs, any noticed complications, formation of dry socket, and the status of the second molar. The data were collected by two oral surgery specialists.

Data analysis:

The IBM SPSS Statistics 16.0 software (Chicago, USA) was used to calculate frequencies and percentages for all the categorical survey responses. This study represented a survey about the reasons for the removal of wisdom teeth among the Libyan population, so the answers were recorded as percentage values.

III. RESULTS

Table 1 and Figure 1 describe the patients participating in the survey about the removal of their wisdom teeth and their categorization according to their gender, marital status, nationality and residency. The mean age of the patients was 34 ± 7.9 years.

Table 1: Participants in the survey.

Description	Reply	Percentage
Gender	Male	39%
	Female	61%
Marital Status	Single	26%
	Married	74%
Nationality	Libyan	99%
	Non-Libyan	1%
Residency	Benghazi	76%
	Out of Benghazi	24%

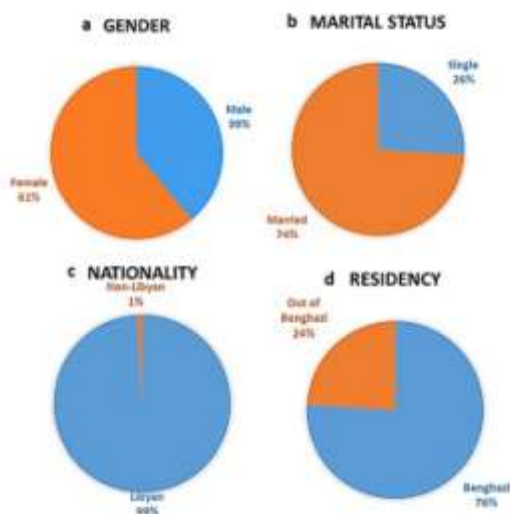


Figure 1. Diagram describing the participants in the survey according to a) gender, b) marital status, c) nationality and d) residency.

The responses to the ten survey questions and the percentage of the replies were displayed in Table 2. Bar charts representing the percentages of

the various responses for the questions from 1 to 10 are shown in figures 2-11, respectively.

Table 2: Responses for the survey about wisdom teeth removal and their percentage.

Survey Question	Responses	Percentage
1.Chief complaint	Pain	83%
	Swelling	7%
	Caries	5%
	Periodontal disease	1%
	Check-up	3%
	Limited mouth open	1%
2.Chief complaint tooth	UR8	23%
	UL8	41%
	LR8	18%
	LL8	18%
3.Medical history	N.O.S	89%
	HIN	4%
	DM	0%
	CVD	0%
	Asthma	1.4%
	Pregnant	1.4%
	Hospitalization	1.4%
	Drug allergy	1.4%
	IBS	1.4%
4.The decision of tooth removal: why?	Caries	46%
	History of Swelling	1%
	Periodontal Disease	1%
	Pain	1%
	History of Pericoronitis	26%
	Cyst	18%
	Trauma	18%
	Effect on Second Molar	18%



		1% 3% 4%
5. Was it the surgeon decision or patient decision?	Surgeon Patient Both	46% 42% 12%
6. Surgical or non-surgical removal?	Surgical extraction Non-Surgical extraction	35% 65%
7. Drugs prescribed?	Analgesic Antibiotic No	72% 27% 1%
8. Any complications?	Yes Swelling & Trismus No	3% 97%
9. Dry socket Yes/ No	Yes No	0% 100%
10. Second molar status:	Intact Caries Filling Periodontal disease Missing Root Resorption	39% 29% 22% 6% 3% 1%

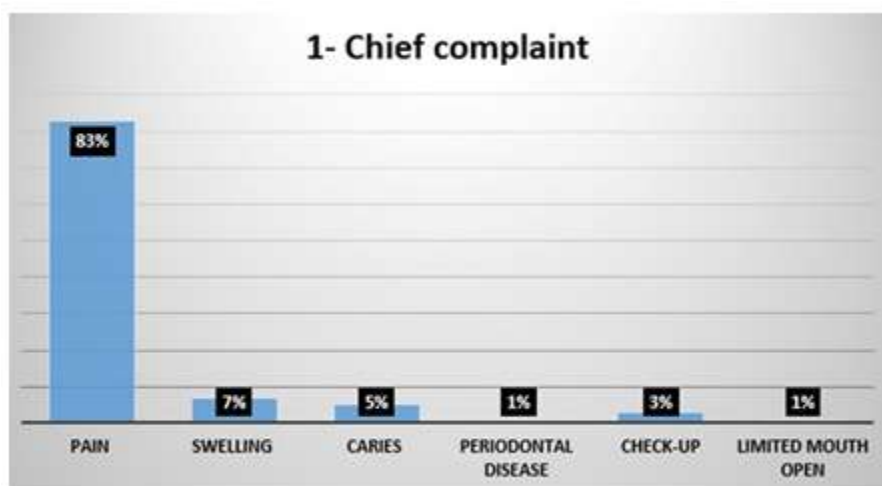


Figure 2. Bar Chart representing the chief complaint of the patients.

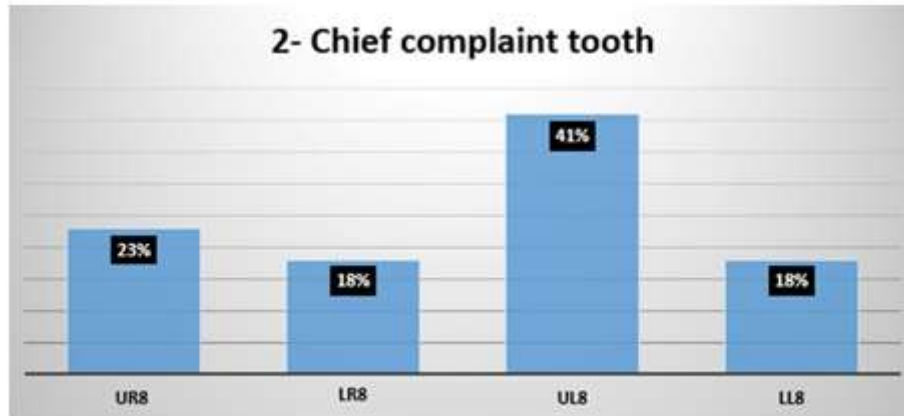


Figure 3: Bar Chart representing the chief complaint teeth.

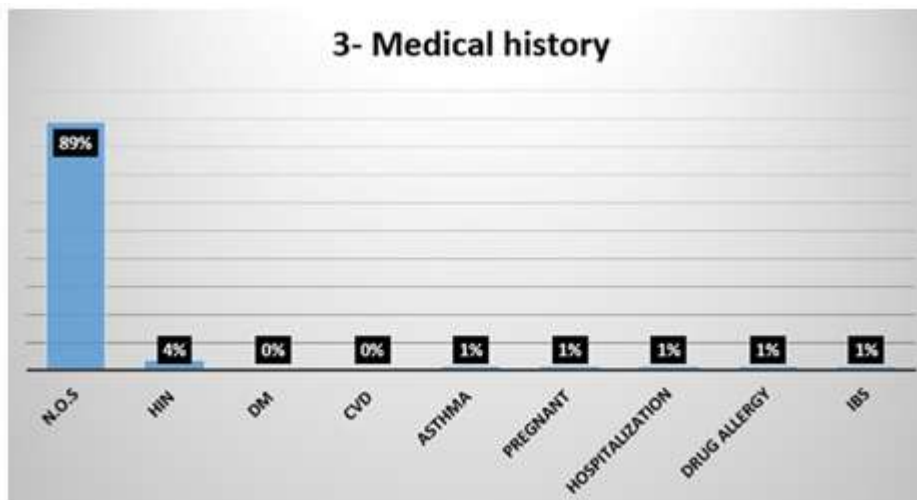


Figure 4: Bar Chart representing the medical history of the patients.

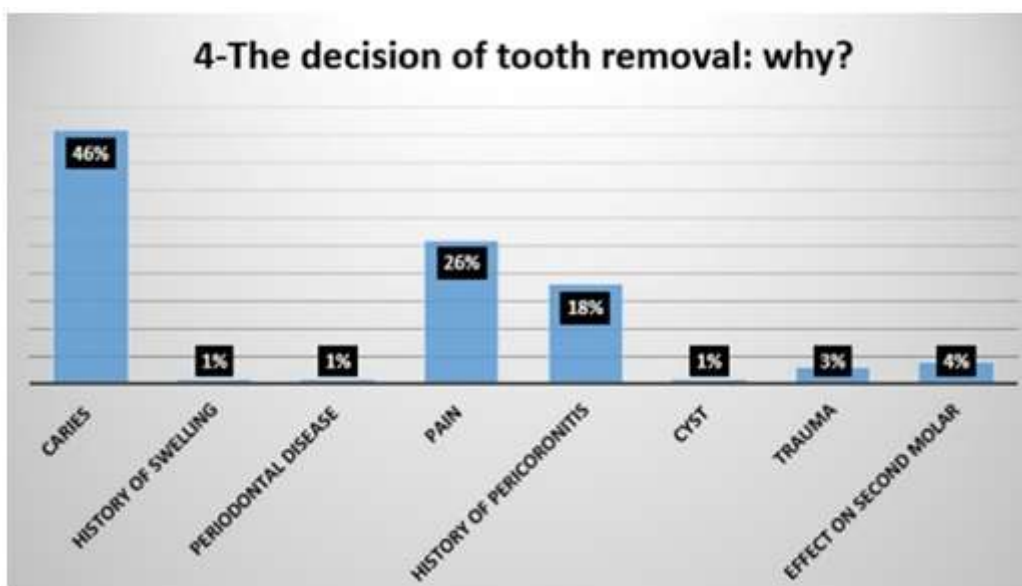


Figure 5: Bar Chart representing the reason for the decision of tooth removal among the different patients.

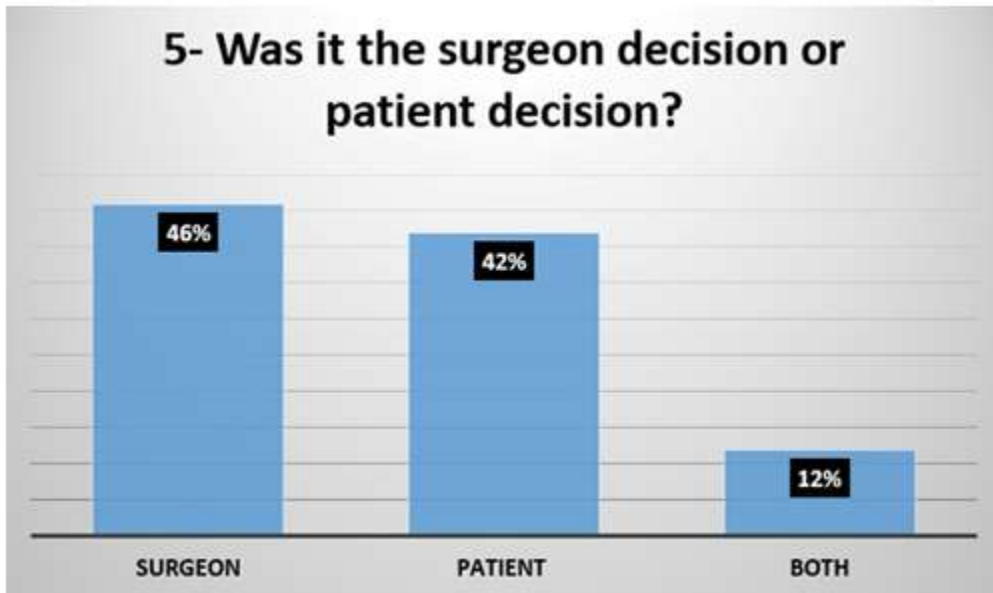


Figure 6: Bar Chart representing the person who decided tooth removal: surgeon, patient, or both.

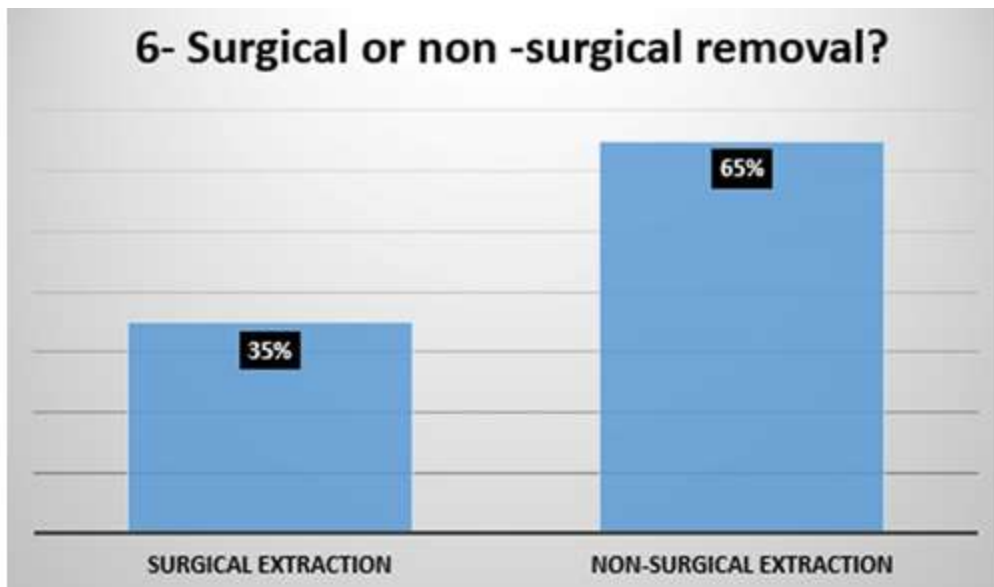


Figure 7: Bar Chart representing the tooth removal process: surgical or non-surgical removal.

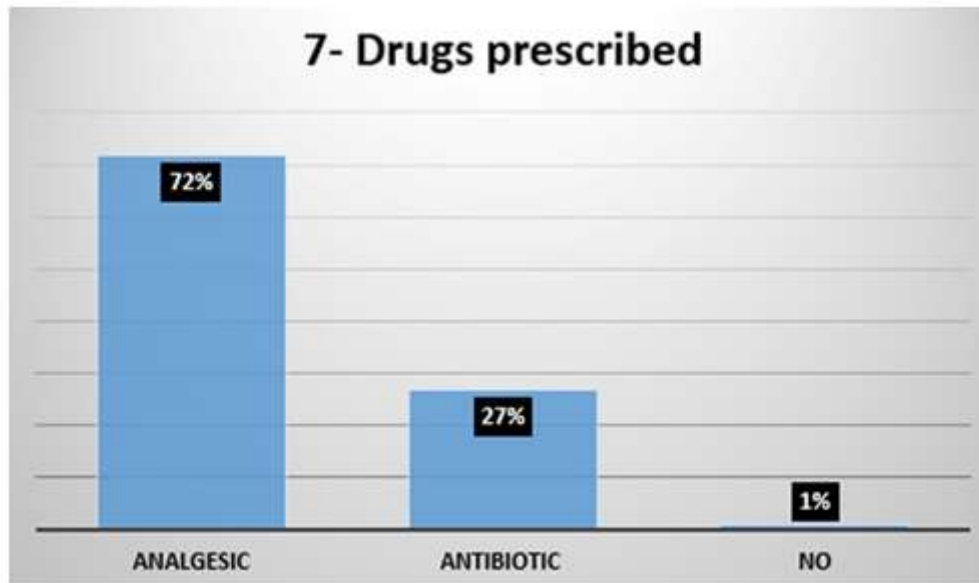


Figure 8: Bar chart representing the drugs prescribed.

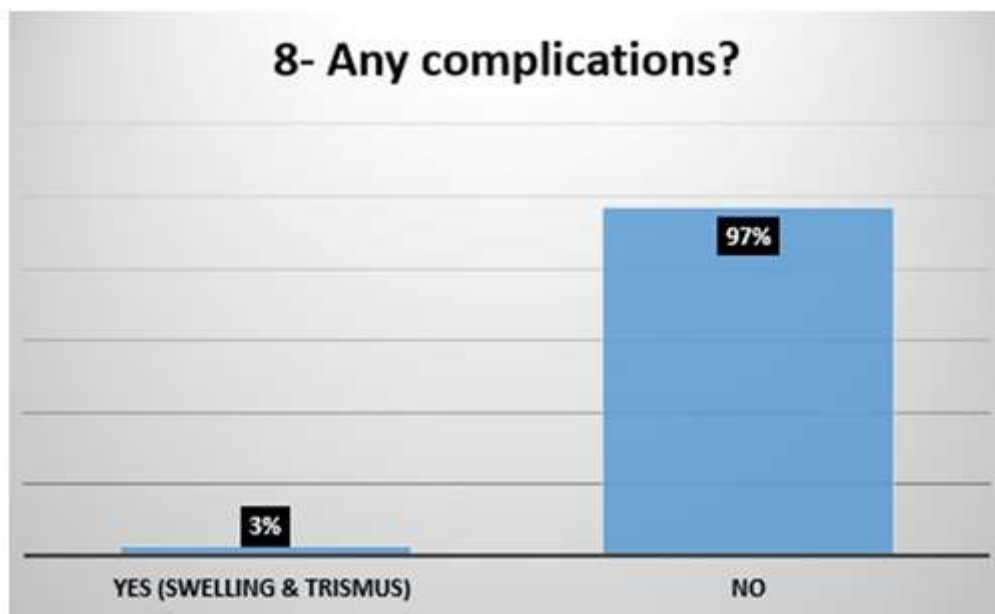


Figure 9: Bar Chart representing the complications.

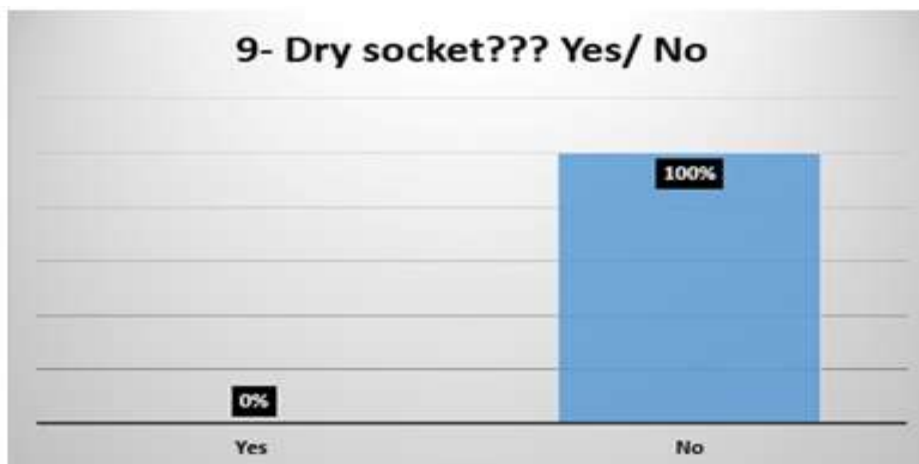


Figure 11: Bar chart representing the second molar status.

IV. DISCUSSION

The current cross-sectional study aimed to explore the reasons for wisdom teeth extraction, any reported complications, and related information among patients attending two private dental clinics in Benghazi, Libya. Our study demonstrated that dental caries remains a significant global public health issue and is the most prevalent oral disease, particularly among adults. The current study demonstrated that dental caries (64%), pain (26%), and history of pericoronitis (18%) are the most common reasons for wisdom tooth extraction. These findings align with other studies carried out in different parts of Libya [7–9] and other countries [10–13]. Caries remains a significant global public health issue and is the most prevalent oral disease, particularly among adults [14]. It has also been noted that pain and pericoronitis significantly contribute to the process of tooth extraction [15]. In addition, around 1% of the study sample extracted teeth for periodontal disease, or limited mouth opening. This finding contradicts the conventional belief that periodontal diseases are the primary reason for tooth loss.

The most common chief complaint was pain (83%), which aligns with the fact that pain is a typical symptom of third molar pathology [15]. The studies found that the most extracted wisdom teeth were the upper left tooth (41%), followed by the upper right one (23%). This could be related to the stronger washing effect of saliva in the lower jaw compared to the upper jaw, making the upper wisdom teeth more prone to dental caries [16]. Furthermore, in most cases, there were no medical issues associated with the wisdom extraction (89%)

In most cases the decision of the extraction was carried out by the dental surgeon

(46%) rather than from patient (42%). Furthermore, in most cases the extraction was performed in non-surgical procedure (65%). The mostly described drug after wisdom teeth extraction was analgesics (72%) which coincide with the research conducted by Derry et al. that demonstrate the prescription of analgesics after third molar extraction is beneficial [17].

Only 3% of the cases showed related complications such as swelling and trismus. These findings may be attributed to the fact that most of the third molar extractions in the survey were performed using non-surgical procedures rather than surgical ones, which are often associated with inflammation and trismus [18]. Additionally, the study found no instances of dry socket following third molar extraction. This aligns with existing evidence indicating that dry socket occurs in about 1% to 5% of all extractions [19]

A concerning discovery in this study is the higher extraction rate of third molars when the second molars were either caries (29% of cases) or previously filled (22% of cases), while they remained intact in approximately 39% of cases. These findings may be due to the influence of neighboring teeth on the health of the third molars [20].

The current study has certain limitations that should be noted. Firstly, it employed a cross-sectional design, which offers just a brief overview of the reasons for tooth extraction and limits a more in-depth analysis. Secondly, the data collection was limited to a private dental clinic in Benghazi city, potentially overlooking other cities. It is advisable to conduct further studies involving a larger sample size that encompasses various social and geographic classes.



V. CONCLUSION

This study indicates that dental caries, pain, and pericoronitis remain the primary reasons for tooth loss in the populations examined. The upper third molars were the most frequently extracted teeth. To reduce the necessity for wisdom teeth extractions and improve overall oral health quality of life, it is essential to concentrate on the early prevention and treatment of oral health issues. Prioritizing the creation and execution of programs aimed at oral health education and promotion is vital.

Abbreviations

NOS: nothing of significance

DM: diabetes mellitus

HTN: hypertension

IBS: irritable bowel syndrome

CVD: cardiovascular disease

Acknowledgments

The authors are grateful to Nismah Salah Aldeen AlGharyani, BDS., University of Benghazi 2022/2023 for her support and help through data entry of the research.

REFERENCES

- [1] Alfuriji S, Alamro H, Kentab J, Alosail L, Alali L, Altuwaijri N, et al. Ectopic Permanent Molars: A Review. *Dent J* 2023;11. <https://doi.org/10.3390/dj11090206>.
- [2] Murphy I, Noar J, Parekh S, Ashley P. The effect of extraction of the lower first permanent molar on the developing third molar in children. *J Orthod* 2022;49:480–7. <https://doi.org/10.1177/14653125221093086>.
- [3] Kassebaum NJ, Bernabé E, Dahiya M, Bhandari B, Murray CJL, Marcenes W. Global Burden of Severe Tooth Loss: A Systematic Review and Meta-analysis. *J Dent Res* 2014;93:20S–28S. <https://doi.org/10.1177/0022034514537828>.
- [4] Baiju R, Peter E, Varghese N, Sivaram R. Oral health and quality of life: Current concepts. *J Clin Diagnostic Res* 2017;11:ZE21-ZE26. <https://doi.org/10.7860/JCDR/2017/25866.10110>.
- [5] Silva Junior MF, Batista MJ, de Sousa M da LR. Risk factors for tooth loss in adults: A population-based prospective cohort study. *PLoS One* 2019;14:e0219240. <https://doi.org/10.1371/journal.pone.0219240>.
- [6] Suzuki S, Sugihara N, Kamijo H, Morita M, Kawato T, Tsuneishi M, et al. Reasons for Tooth Extractions in Japan: The Second Nationwide Survey. *Int Dent J* 2022;72:366–72. <https://doi.org/10.1016/j.identj.2021.05.008>.
- [7] Farag M, Fathalla Benghsheer H. Tooth Loss in Adults: A Survey of Reasons and Patterns in the Eastern Province of Aljabal Al-Akhder-Libya. *Libyan J Dent* 2023;7:1–11. <https://doi.org/10.37376/ljd.v7i1.4474>.
- [8] Elzer A, Ensir H, Elsalhi A, Kablan R, Jedeh M, Elramli A, et al. Reasons for Tooth Extraction among Libyan Adults: Multi-Center Cross-Sectional Study. *Libyan J Dent* 2021;5:1–11. <https://doi.org/10.37376/ljd.v5i1.1777>.
- [9] Aloshaiby A, Gaber A, Arheiam A. The oral health care system in Libya: a case study. *BMC Oral Health* 2024;24:1–10. <https://doi.org/10.1186/s12903-024-04684-x>.
- [10] Broers DLM, Dubois L, de Lange J, Su N, de Jongh A. Reasons for Tooth Removal in Adults: A Systematic Review. *Int Dent J* 2022;72:52–7. <https://doi.org/10.1016/j.identj.2021.01.011>.
- [11] Passarelli PC, Pagnoni S, Piccirillo GB, Desantis V, Benegiamo M, Liguori A, et al. Reasons for Tooth Extractions and Related Risk Factors in Adult Patients: A Cohort Study. *Int J Environ Res Public Health* 2020;17:2575. <https://doi.org/10.3390/ijerph17072575>.
- [12] Aljafar A, Alibrahim H, Alahmed A, AbuAli A, Nazir M, Alakel A, et al. Reasons for Permanent Teeth Extractions and Related Factors among Adult Patients in the Eastern Province of Saudi Arabia. *Sci World J* 2021;2021:1–7. <https://doi.org/10.1155/2021/5534455>.
- [13] Sharif RA, Chaturvedi S, Suleman G, Elmahdi AE, Elagib MFA. Analysis of tooth extraction causes and patterns. *Open Access Maced J Med Sci* 2020;8:36–41. <https://doi.org/10.3889/OAMJMS.2020.3784>.
- [14] Hujoel PP, Hujoel MLA, Kotsakis GA. Personal oral hygiene and dental caries: A systematic review of randomised controlled trials. *Gerodontology* 2018;35:282–9. <https://doi.org/10.1111/ger.12331>.
- [15] Chisci D, Parrini S, Baldini N, Chisci G. Patterns of Third-Molar-Pericoronitis-Related Pain: A Morphometrical Observational Retrospective Study. *Healthc*



- 2023;11.
<https://doi.org/10.3390/healthcare11131890>.
- [16] Khan A, Qureshi B, Qureshi A, Imtiaz Y, Qadeer S. Correlation of salivary characteristics with high risk of dental caries; A clinical investigation. *Futur Dent J* 2018;4:72–5.
<https://doi.org/10.1016/j.fdj.2017.10.002>.
- [17] Derry S, Wiffen PJ, Moore RA. Relative efficacy of oral analgesics after third molar extraction - A 2011 update. *Br Dent J* 2011;211:419–20.
<https://doi.org/10.1038/sj.bdj.2011.905>.
- [18] Osunde OD, Adebola RA, Omeje UK. Management of inflammatory complications in third molar surgery: A review of the literature. *Afr Health Sci* 2011;11:530–7.
- [19] Mamoun J. Dry socket etiology, diagnosis, and clinical treatment techniques. *J Korean Assoc Oral Maxillofac Surg* 2018;44:52–8.
<https://doi.org/10.5125/jkaoms.2018.44.2.52>.
- [20] Ndiaye ML, Gassama BC, Niang SO, Lecor PA, Ndiaye A, Toure B. Distal pathologies of the second molar in the presence of the mandibular third molar: Study by panoramic radiography. *Adv Oral Maxillofac Surg* 2021;3:100090.
<https://doi.org/10.1016/j.adoms.2021.100090>.