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Original Research

Prevalence of Impacted Third Molar Teeth and Commonly Extracted Third Molars: A Cross-Sectional Study

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Abstract

Objectives: The aim of the study is to assess the Prevalence of third molar impaction and commonly extracted third molar teeth in the south Indian population.

Materials and methods: This study was randomly done with 2000 patients case history details who underwent surgical extraction of impacted third molar over a period of time. Data were collected and prevalence of age and gender were identified and diagnosis was tabulated along with their age and gender in excel sheet. Data tabulated in excel sheet was transferred to SPSS software for software analysis. Based on analysis, results were tabulated.

Results: Most of the patient who underwent extraction of third molar were aged between 25-50 years (1303). Most of the patients were males (1084). Most prevalent tooth to be extracted is Mandibular left third molar 38 (918).

Conclusion: This is the first retrospective study found the prevalence of third molar impaction and most commonly extracted third molar. The high prevalence found among the male patients aged between 25-50 years, conveys the need to increase awareness among dental professionals.

Keywords: *Third Molars, Extraction, Impacted Teeth, Surgical Removal, Prevalence*

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INTRODUCTION

Teeth become impacted when they fail to erupt or develop in their proper functional location; of all teeth, mandibular third molars are the most frequently impacted [1]. The cause of third molar impaction is due to inadequate space in the mandible; this may cause pericoronitis, dental caries and the development of cystic lesions [2,3]. Winter's classification system and Pell and Gregory classification system is one of the common methods used to assess the level of third molar impaction [5].

The prevalence of third molar impaction ranges from 30-60% [6-9]. A few studies from the Gulf region have reported the prevalence of impacted third molars to be 32–40% [7,8]. The pattern of third molar impaction in the Indian population has not been described in the literature to date; thus, the aim of this retrospective study was to investigate the prevalence of age, gender, pattern of third molar impaction, and commonly extracted third molar among dental patients treated in a private hospital over a period of time.

MATERIALS AND METHODS

This retrospective cross-sectional study was done in between the month of November 2017 and November 2022. Approval from Ethical Review Board was obtained and our study was carried in a hospital setting in a major city of Tamil Nadu, South India. For this study a random sample of around 2000 patients case history details who underwent surgical extraction of impacted tooth were collected and surgical extraction impacted third molar was filtered and obtained. Photographs, radiographs in the image gallery of the patient online case sheet records were verified. In order to reduce, minimize and avoid the occurrence errors, verified case sheets were once again cross verified by another examiner. Verified data were tabulated in excel under columns of age, gender, tooth number in FDI notation. Tooth number in FDI notation were categorized into 4 different categories like 18 (maxillary right third molar), 28 (maxillary left third molar), 38 (Mandibular left third molar), 48 (Mandibular right third molar). Data tabulated in excel sheet were transferred to SPSS software for statistical analysis. Descriptive statistics and chi square tests were conducted to evaluate differences between groups with significance level at 95% confidence interval ($P<0.05$).

RESULTS

Based on analysis results were obtained and tabulated. The percentage distribution of age is shown in Figure 1, where Most of the patient who underwent extraction of impacted third molar were aged between 25-50 years (1303), 655 patients were aged less than 25 years and 42 patients aged above 50 years. Figure 2 shows frequency distribution of gender of patient in the study population. Where Most of the patient who underwent surgical extraction of impacted third molar were males (1084) compared to females (916). Figure 3 represent frequency distribution of gender of patient in the study population. Where 918 patients underwent surgical extraction of tooth number 38(Mandibular left third molar), 858 patients underwent surgical extraction of tooth number 48(Mandibular right third molar). 87 patients underwent surgical extraction of tooth number 28 (maxillary left third molar) 74 patients underwent surgical extraction of tooth number 18 (maxillary right third molar). Figure 4 shows association between gender and frequency distribution of commonly extracted impacted third molar in FDI notation. Where 38 patients aged <25 years, 32 patient aged between 25-50 years and 4patients aged more than 50 years had underwent surgical extraction of tooth number 18 (maxillary right third molar), 44 patients aged <25 years, 42 patients aged between 25-50 years and 1 patient aged more than 50 years had underwent surgical extraction of tooth number 28 (maxillary left third molar), 306 patient aged <25 years, 649 patients aged between 25-50 years and 26 patients aged more than 50 years had underwent surgical extraction of tooth number 38 (Mandibular left third molar), 267 patients aged <25 years, 580 patients aged between 25-50 years and 11 patients aged more than 50 years had underwent surgical extraction of tooth number 48 (Mandibular right third molar). Figure 5 shows association between gender and frequency distribution of commonly extracted impacted third molar in FDI notation. Where 33males and 41 females had undergone surgical extraction of tooth number 18 (maxillary right third molar), 39 males and 48 females had undergone surgical extraction of tooth number 28 (maxillary left third molar), 550 males and 431 females had undergone surgical extraction of tooth number 38 (Mandibular left third molar), 462 males and 396 females had undergone surgical extraction of tooth number 48 (Mandibular right third molar).

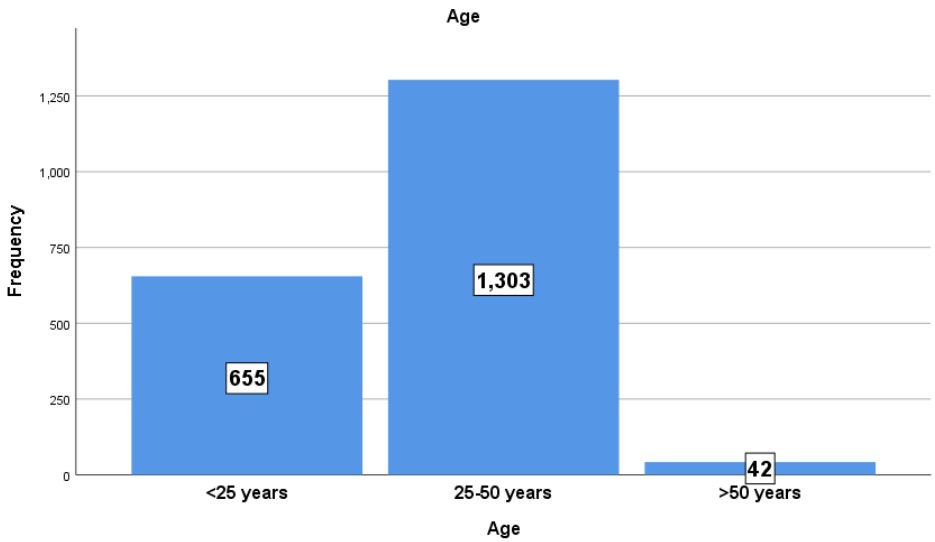

Figure 1: Bar graph representing frequency distribution of age of patient in the study population. X-axis represents age and Y-axis represents the number of patients. Most of the patient who underwent extraction of impacted third molar were aged between 25-50 years (1303), 655 patients were aged less than 25 years and 42 patients aged above 50 years

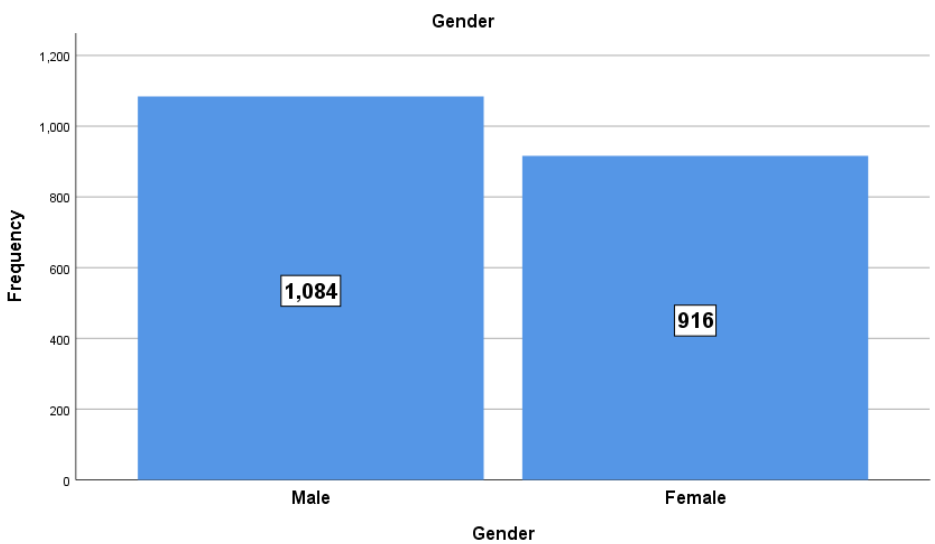

Figure 2: Bar graph representing frequency distribution of gender of patient in the study population. X-axis represents gender and Y-axis represents the number of patients. Most of the patient who underwent surgical extraction of impacted third molar were males (1084) compared to females (916).

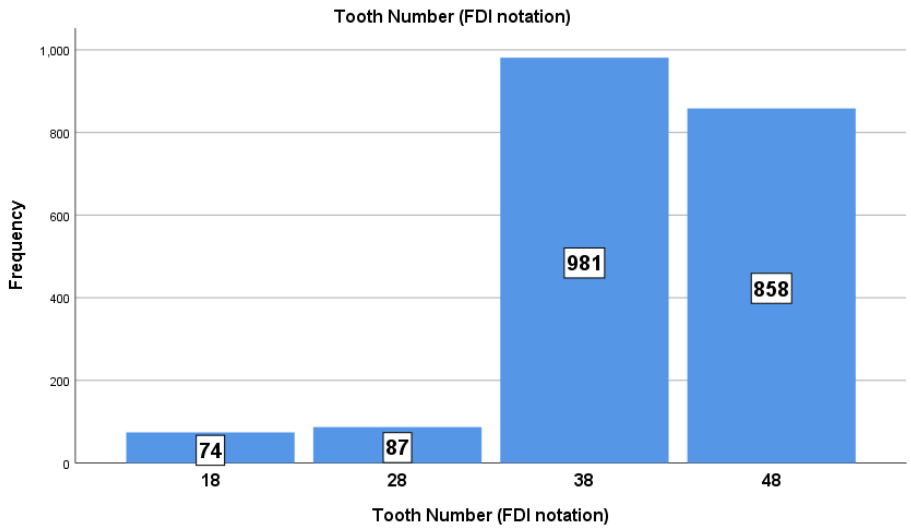

Figure 3: Bar graph representing frequency distribution of tooth number in FDI notation of patient who underwent extraction of third molars. X-axis represents tooth number in FDI notation and Y-axis represents the number of patients. Where 918 patients underwent surgical extraction of 38, 858 patients underwent surgical extraction of 48, 87 patients underwent surgical extraction of 28, 74 patients underwent surgical extraction of 18.

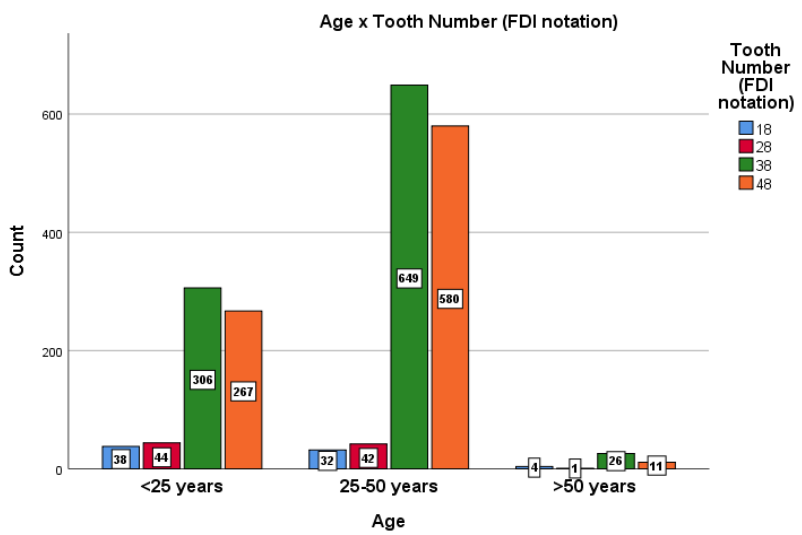

Figure 4: Bar graph representing association between gender and frequency distribution of commonly extracted impacted third molar in FDI notation. X-axis: age wise categorization of frequency distribution of surgically extracted third molar. Y-axis: No. of Patients. Where 38 patient aged <25 years, 32 patient aged between 25-50 years and 4patients aged more than 50 years had underwent surgical extraction of 18, 44 patient aged <25 years, 42 patients aged between 25-50 years and 1 patient aged more than 50 years had underwent surgical extraction of 28, 306 patient aged <25 years, 649 patient aged between 25-50 years and 26 patients aged more than 50 years had underwent surgical extraction of 38, 267patient aged <25 years, 580

patient aged between 25-50 years and 11 patients aged more than 50 years had underwent surgical extraction of 48.

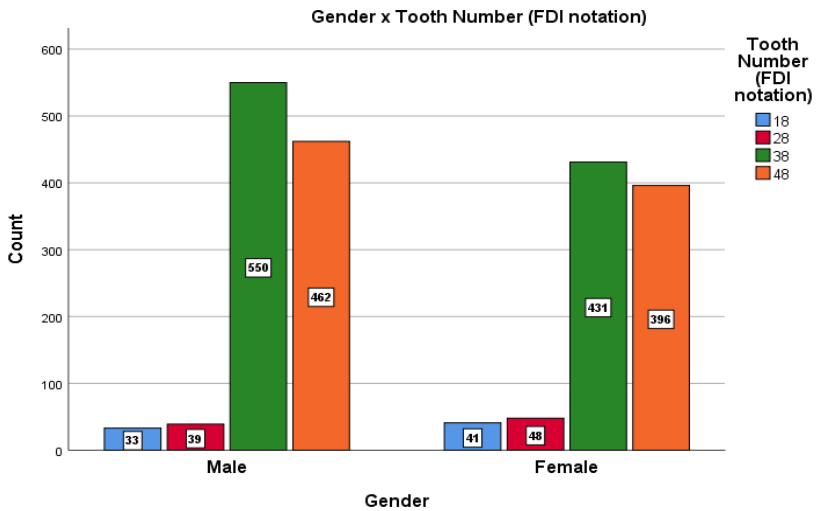

Figure 5: Bar graph representing association between gender and frequency distribution of commonly extracted impacted third molar in FDI notation. X-axis: gender wise categorization of frequency distribution of commonly extracted impacted third molar in FDI notation Y-axis: No. of Patients. Where 33males and 41 females had undergone surgical extraction of 18, 39 males and 48 females had undergone surgical extraction of 18, 550 males and 431 females had undergone surgical extraction of 38, 462 males and 396 females had undergone surgical extraction of 48.

DISCUSSION

In a large sample of the population, the chances of finding one or more impacted third molar is quite high. According to Othman R et al., third molars are the most common impacted teeth to be found in humans and their surgical extraction is one of the most common dentoalveolar surgical procedures in the oral maxillofacial surgical field [9]. Multiple factors could be responsible for its etiology [10,11]. Therefore, understanding its pattern in various communities is very important [12]. When evaluating an impacted third molar radiographically, the angulation of the molar should be determined according to the Winter's classification [13].

CONCLUSION

This is the first retrospective study that found the prevalence of third molar impaction and most commonly extracted third molar. The high prevalence was found among the male patients aged between 25-50 years, underlines the need to increase awareness among dental professionals. Further studies should also be conducted to determine how many patients with impacted third molars are symptomatic or actively seek treatment. Further studies are also needed to assess the pattern of third molar impaction.

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Conflicts of interest - There are no conflicts of interest.

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