# Transalveolar Extractions in Different Age Groups

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## Abstract

To evaluate the prevalence of difficult extractions in different age groups. A retrospective study was done in an institutional setting. The data was retrieved from the college's patient records. All the patients who underwent transalveolar extractions were included in this study at a given time frame from june 2019 to march 2020. The patients' age, gender and method of extraction were retrieved and tabulated. The data was then analyzed using a software (SPSS). A total of 291 patients were involved in this study,majority of the patients belonged to the 31-40 years age group, 160 patients being male and the remaining 131 being female patients. Most difficult tooth which was commonly encountered during extraction was lower mandibular third molars. Lower third molars are one of the most difficult teeth to be extracted, an increased number of cases were seen in the 31-40 years age group, hence a better approach and skill to be trained in extracting lower third molars can be done in order to avoid further complications.

***Keywords:*** *Transalveolar extraction, open method, surgical removal, exodontia,minor oral surgery.*

## Introduction

Tooth extraction may represent one of the first oral surgery acts that a young dentist will face at the beginning of his/her career[1,2] .Exodontia is one of the most common procedures performed in oral surgery. Complications, unexpected clinical episodes in respect to regular operative procedures under normal circumstances, can increase morbidity.Prevention is one of the best ways of avoiding future complications. Therefore, it is fundamental that the clinician is able to evaluate the whole spectrum of complications and their implications.Complications can be wide ranging: from common ones like dry sockets or root fractures to uncommon and serious ones like displacement of a root fragment into the maxillary sinus and its consequent oro-antral fistula.Tooth extraction is a surgical procedure and several complications may arise directly connected to the operator's actions. Fracture of the alveolar bone is one the most frequent complications during tooth extraction. Incorrect hand movements can increase the possibility of tooth apex fracture.The breakage of basal bone or lower jaw dislocation, swelling, edema and bleeding are all complications related to the extraction procedure[3,4,5] .Transalveolar extraction method is the surgical technique which is employed for recovering roots that were fractured during routine extraction of teeth which could not be extracted by the routine closed methods for a variety of reasons.This method involves the reflection of a full thickness muco-periosteal flap, cutting of the bone obstructing the removal of the tooth and if required sectioning of the roots and then removal. Postoperative complications commonly include haemorrhage ,pain ,swelling. [6,7,8].The aim of this study was to evaluate the prevalence of difficult extractions in different age groups

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## Materials and Methods

A retrospective study was conducted in an institutional setting. The ethical clearance was received from the institution's ethical committee. The study

involved all patients who had undergone difficult extractions in a given time frame.

Selection of subjects:All patients who had undergone difficult extractions were considered in this study. The time period of choice was from june 2019 to march 2020. A total of 86000 patients records were reviewed and analyzed.There were three people involved in this study- the guide,reviewer and researcher. All available data was collected and sorted.

Data collection:The patient's details were retrieved. Data regarding the patient's age, gender and treatment done were considered for this study. Cross verification of the data was done by the second reviewer, to avoid any missing or repetitive data. The data was manually retrieved and tabulated in excel and sorted.

Inclusion criteria:All patients who underwent transalveolar extractions were considered in this study. All age groups were considered.

Exclusion criteria:Patients with incomplete records were removed from the study. Repetitive entries were also excluded.

Statistical analysis:The tabulated data was analysed using SPSS software( IBM SPSS statistics 260). The method of analysis used was "chi square test". The analysis was done between age and type of treatment done.

## Results and Discussion

Out of the 291 patients included in this study, the age group in which most difficult extractions were done in belonged to 31-40 years ( 35.4%) followed by 21-30 years age group(29.9%), followed by 41-50(18.9%) years age group( as seen in Figure 1). The most common teeth to undergo transalveolar extractions was found to be 48 (28.5%) , followed by 38(25.4%), followed by 36(1.7%) (as explained in Figure 2). The difficult extractions were more prevalent in males (55%) than females (45%) (as explained in Figure 3). On finding the correlation between age and tooth number,it was found that in the 31-40 years age group the most commonly encountered teeth during difficult extractions was lower wisdom teeth( as shown in figure 4). On finding a correlation between gender and tooth number it was found that female patients encountered more difficult extraction experience with respect to 48 than 38, on the other hand male patients encountered a difficult extraction experience irt 38 than 48( as shown in Figure5).

Tooth extraction requires controlled force and fineness for atraumatic extractions. Various instruments and techniques have been described to aid atraumatic tooth extraction. According to a study conducted by kautto, the mean age of occurrence of extraction was found to be 36.4 years[9,10,11].Our present study also goes in accordance with this study with a prevalence of difficult extractions in the 31-40 years age group. Various studies state that lower wisdom teeth have an increased tendency to go for open methods of extractions[12,13,14]. Our present study also goes in accordance with the study mentioned above ,having an increased number of patients undergoing difficult extractions in relation to lower wisdom teeth.Pain, inflammation, and trismus are typically observed in the postoperative period after mandibular third molar extraction[15,16,17] .factors that may affect pain include the surgeon's experience[18,19,20]. Majority of the cases were seen in male patients more than female patients.Gender is one of the predictors of difficulty of impacted third molar surgery[21,22,23].There is a statistically significant relation between gender and surgical duration which was also noted in the study undertaken by Susarla and Dodson[24] .Side of third molar tooth also has statistical significant correlation with surgical duration. This is mainly due to the advantage of right handed surgeons, which makes it easy to retract cheek and elevate the tooth while extracting.[25].

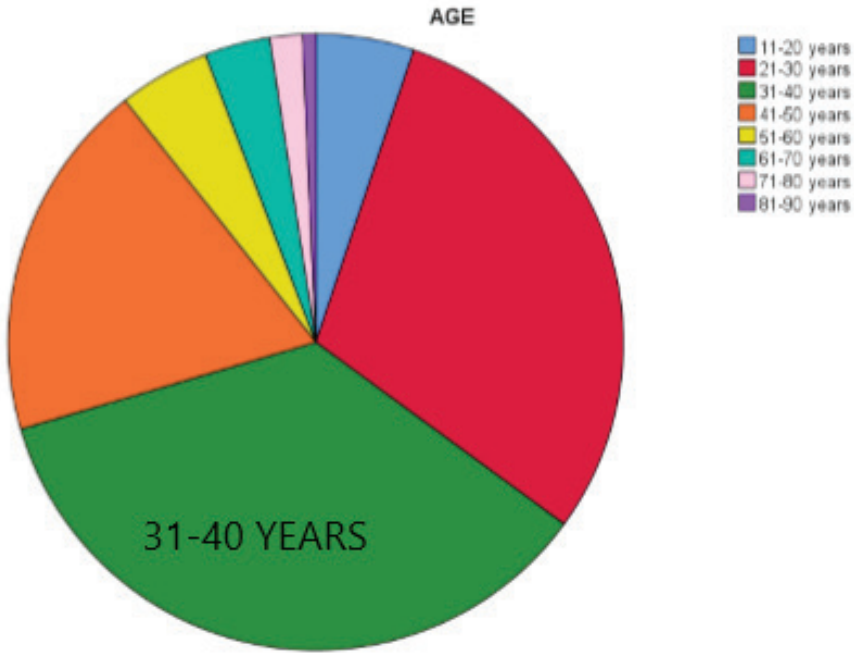


**Figure 1: this pie chart depicts the different age groups who underwent transalveolar extraction. The age group between 31-40 years shows the most cases of transalveolar extraction.( dark green in color,35.4%).**

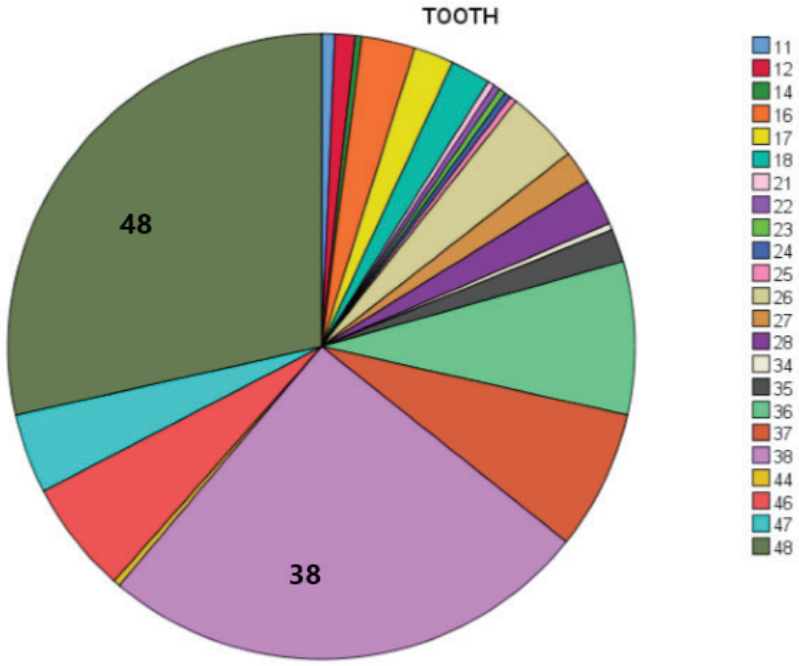


**Figure 2: this pie chart depicts the teeth undergoing transalveolar extractions. Lower wisdom teeth were shown to be the most cases undergoing transalveolar extraction. Purple color depicts 38(25.4%),Grey depicts 48(28.5%).**

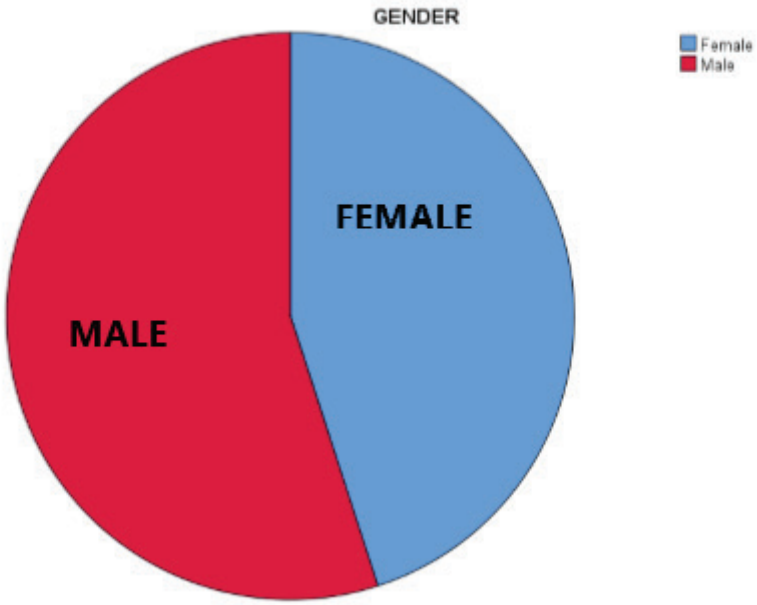


**Figure 3: This pie chart depicts the gender distribution in transalveolar cases. A male predilection was seen in this study. Blue color depicts male patients(55%), red color depicts female patients (45%).**

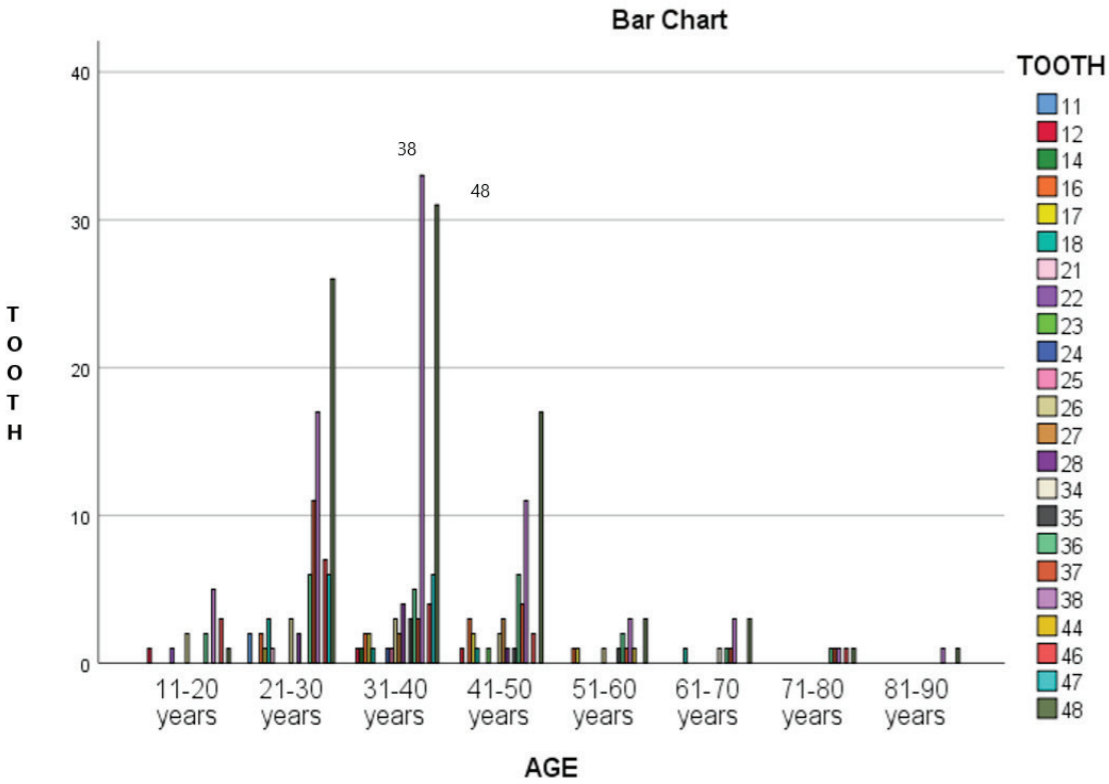


**Figure 4: The bar graph depicts the correlation between age and transalveolar extraction.**

X axis represents age, Y axis represents tooth number.This bar graph depicts that transalveolar extractions were prevalent in the age group 31-40 years,and the tooth involved in this age group was found to be lower third molar teeth( 38 purple in color and 48 dark green in color). chi-square test was done p value is 0.38(p>0.05), it is not statistically significant.

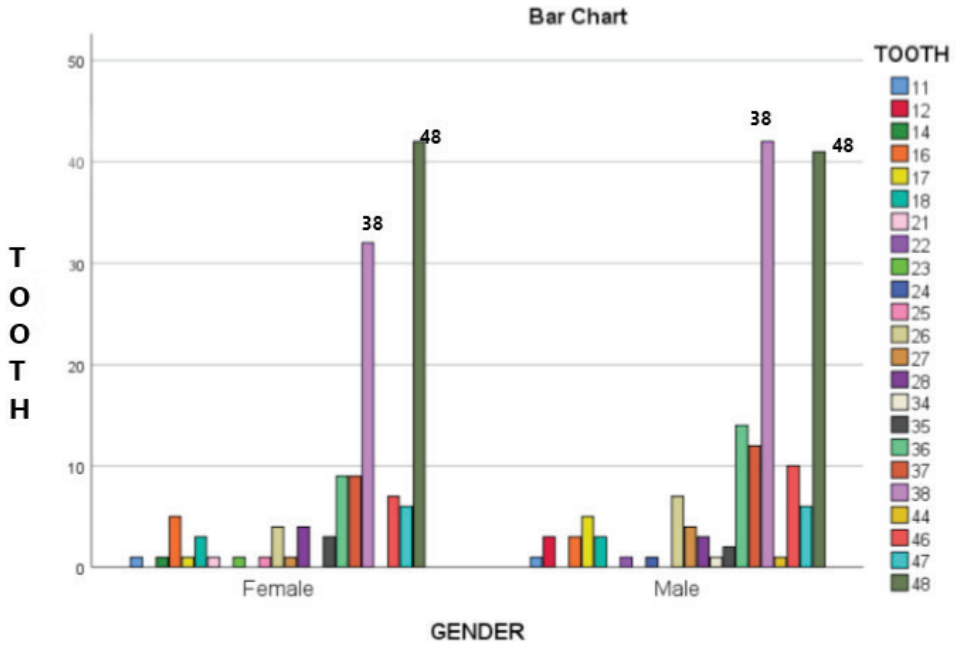


**Figure 5: This bar graph depicts the correlation between gender and transalveolar extraction.**

X axis- gender,Y axis- tooth number.This graph depicts that the majority of female patients underwent transalveolar extraction in relation toTooth 48,male patients underwent transalveolar extractions in relation to Tooth 38..chi-square test was done p value is 0.716, it is not statistically significant.

## Conclusion

In this study we evaluated the prevalence of difficult extractions in different age groups.Transalveolar extraction method is the surgical technique which is employed for recovering roots that were fractured during routine extraction of teeth which could not be extracted by the routine closed methods for a variety of reasons. This method involves the reflection of a full thickness muco-periosteal flap, cutting of the bone obstructing the removal of the tooth and if required sectioning of the roots and then removal. Difficulty of extractions not only depend on the state of tooth but also the experience of the surgeon. An emphasis on good treatment planning and sharpening of skills can make extractions more easier to perform.

**Acknowledgement:** The authors would like to acknowledge the help and support rendered by the department of oral and maxillofacial surgery and information technology of Saveetha Dental College and Hospitals for their constant assistance with the research.

**Conflict of Interest:** The authors declare no conflicts of interest.

**Source of Funding:** Self.

**Ethical Clearance:** It is taken from "Saveetha Institute Human Ethical Committee" (Ethical Approval Number- SDC/SIHEC/2020/DIASDATA/0619-0320)

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