

# Third molar impaction among patients that attended FCDTT clinic, Enugu, Nigeria from 2015 - 2017

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## ABSTRACT

### Introduction

Third molar impaction occurs when the tooth fails to erupt into the dental arch within the expected developmental window. Impaction sometimes causes oral problems.

### Purpose

This study was carried out to ascertain the prevalence of third molar impaction among patients that attended the FCDTT clinic, Enugu, Nigeria from 2015 - 2017.

### Materials and Methods

The study involved reviewing records of patients that visited the clinic. After obtaining the ethical clearance and other permissions for the work, the researchers proceeded to the records section of the clinic, where the records of the 22,790 patients that attended the clinic during the period covered by the study were retrieved. The records were critically studied and observations were recorded on a data sheet. Data obtained were sorted into frequency tables and analysed using the descriptive statistics of a bar chart and simple percentages.

### Results

210 recorded cases of tooth impaction that comprised 101 male and 109 female patients were observed. Results indicated that the overall prevalence of 3<sup>rd</sup> molar impaction was 0.92%, more cases of 3<sup>rd</sup> molar impaction were seen in 2015 (40.48%), among the female gender (51.9%), and among patients aged 27 years and above (63.8%).

### Conclusion

Early diagnosis, evaluation of prognosis, and prompt management of impacted teeth are essential to prevent the range of oral problems that may result from their presence in the oral cavity.

## INTRODUCTION

An impacted tooth is a tooth that is prevented from erupting into position because it is mal-positioned or lacks enough space or encounters some other impediments, like a physical barrier within the path of eruption (Gupta et al., 2004; Miloro et al., 2004; Chandresh et al., 2016). It is characterized as that tooth that fails to erupt into the dental arch within the expected time (Peterson, 2013).

Generally, third molars have been found to erupt between the ages of 17 and 25 years (Elsley & Rock, 2011). The average age for the eruption of mandibular third molars in males is approximately 3 to 6 months ahead of females (Kruger & Thomson, 2010). The third molar eruption has been found to vary with race e.g. mandibular third molar erupts at 14 years among Nigerians and up to 26 years among Europeans (Khan et al., 2006).

Impaction of the third molar is occurring in up to 3% of young adults. Mandibular third molars are more commonly impacted than their maxillary counterparts (Elsey & Rock, 2011). The types of impacted third molar teeth are mesial, distal, vertical, and horizontal (Varun, 2014).

Occasionally, an impacted tooth causes sufficient pressure on the roots of adjacent teeth causing them to resorb; an impacted tooth occupies space that is usually filled with bone; this weakens the bone and renders the jaw more susceptible to fracture. When impacted teeth are retained completely within the alveolar process, the associated follicular sac is also retained along with it (Parkin et al., 2017).

Impacted wisdom teeth can result in pain, damage to other teeth, and other dental problems. In some cases, an impacted third molar may cause no apparent or immediate problems but because they are hard to clean, they may be more vulnerable to tooth decay and mediating gum disease than other teeth are. Some dental authorities recommend that an impacted third molar that causes pain or other dental complication should be removed (Mayo Clinic Staff, 2018; Leung & Chuig, 2011). The decision to surgically remove impacted third molars is often unclear. There is no established absolute treatment protocol. The dental operator must consider a variety of factors and make an informed decision with the patient. Most experienced clinicians combine objective data and common sense to arrive at a logical treatment plan (Bagheri, 2004). The management of an impacted third molar includes observation, exposure, transplantation, or removal of the impacted tooth (Gintaras & Pouilas, 2013; Santosh, 2015).

Factors such as sex, age, the position of the molar teeth, health status of the occlusal plane, and operative difficulty, as judged by surgeons, have all been reported to be associated with a significant increase in the duration of post-operative recovery (Smith, 2013).

## MATERIALS AND METHODS

### *Research Design*

The research design that was adopted for this study was a retrospective research design (documentary source).

### *Area of the Study*

The area of study was Federal College of Dental Technology and Therapy (FCDT&T) (Dental Clinic) located at Federal Close, along Jim Nwobodo Avenue, Trans-Ekulu, Enugu East Local Government Area of Enugu State, Nigeria ([fedsdtten.edu.ng](https://fedsdtten.edu.ng)). The patients that visit the dental clinic believe in the treatment being given to them at the clinic. The treatment includes scaling and polishing, fillings, extractions, etc. ("Field Observation", n.d.).

### *Population of the Study*

All the patients who attended FCDTT dental clinic, Enugu Nigeria from 2015 – 2017.

### *Sample Size and Sampling Technique*

The sampling technique adopted for this study was the purposive sampling technique. The sample that was used for the study was all cases of third molar impaction among patients that visited FCDTT dental clinic from 2015 – 2017.

### *Instrument for Data Collection*

The instrument used for this research work was the documentary source (clinic recorded data of dental patients from 2015 – 2017). All observations were recorded on a data sheet prepared for that purpose.

### *Method of Data Collection*

The study involved reviewing records of patients that visited the clinic. After obtaining the ethical clearance and other permissions for the work, the researchers proceeded to the records section of the clinic, where the records of the 22,790 patients that attended the clinic during the period covered by the study were retrieved. The records were critically studied and observations were recorded on a data sheet.

### *Method of Data Analysis*

Data obtained were sorted into frequency tables and analysed using the descriptive statistics of a bar chart and simple percentages.

### *Calculation of prevalence*

The following formula was used to calculate the prevalences:

$$\text{Prevalence Rate} = \frac{\text{Number of patients affected}}{\text{Sample size}} \times 100$$

## RESULTS

Out of the 22,790 patients seen from 2015 – 2017 at the clinic, 210 recorded cases of tooth impaction (48.1% male and 51.9% female) were observed (**Table 2**).

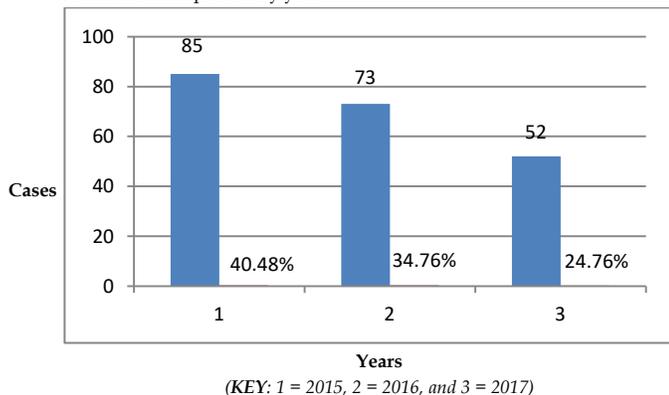
Results indicated that the overall prevalence of 3rd molar impaction was 0.92% (**Table 1**).

**Table 1**  
The overall and yearly prevalences of third molar impaction among the patients

Year	No of the patients that attended the clinic	No cases of tooth impaction	%
2015	10817	85	0.79
2016	6324	73	1.15
2017	5649	52	0.92
<b>Total</b>	<b>22790</b>	<b>210</b>	<b>0.92</b>

More cases of 3rd molar impaction were seen in 2015 (40.48%) (**Figure 1**).

**Figure 1**  
Cases of third molar impaction by year



Tooth impaction was also more prevalent among female patients (51.9%) (**Table 2**).

**Table 2**  
The gender-related prevalence of third molar impaction among the patients

Year	No of cases	Male	%	Female	%
2015	85	40	47.0	45	52.9
2016	73	36	49.3	37	50.6
2017	52	25	48.0	27	51.9
<b>Total</b>	<b>210</b>	<b>101</b>	<b>48.1</b>	<b>109</b>	<b>51.9</b>

Patients aged 27 years and above had an enhanced prevalence of tooth impaction during the period covered by this study (63.8%) (**Table 3**).

**Table 3**  
The age-related prevalence of third molar impaction among the patients

Age (yrs)	Freq.	%
12-16	9	4.3
17-21	22	10.5
22-26	45	21.4
27 and above	134	63.8
<b>Total</b>	<b>210</b>	<b>100</b>

## DISCUSSION

A total of 210 recorded cases of tooth impaction (48.1% male and 51.9% female) were observed out of the 22,790 patients that visited the Dental Clinic of FCDTT, Enugu, Nigeria from 2015 – 2017.

The overall prevalence of 3rd molar impaction during the study period was 0.92%. This reveals a very low prevalence for 3<sup>rd</sup> molar impaction during the period. This key finding is in agreement with the report of **Osunde and Bassey (2016)**, who studied 3<sup>rd</sup> molar impaction among patients that visited the dental and maxillofacial surgery clinic at Calabar, Nigeria, and inferred that the prevalence of 3<sup>rd</sup> molar impaction among their study population was low.

More cases of 3rd molar impaction were seen in 2015 (40.48%). The reason for this finding is not clear. This could be attributed to chance and other factors that may not have any scientific explanation.

Another key finding of this study was that the impaction of the 3<sup>rd</sup> molar was more prevalent among patients of the female gender (51.9%). This may be because people of the female gender may be more inclined to visit the clinic for cosmetic and prophylactic reasons than persons of the male gender. **Gharavi et al. (2006)** asserted that people of the female gender respect oral care more than people of the male gender.

Finally, more patients aged 27 years and above were diagnosed with 3<sup>rd</sup> molar impaction during the study period (63.8%). This could be because wisdom teeth usually emerge sometime between the age of 17 and 25 years (**Khan et al., 2006**), and may also be attributable to the fact that people in that age bracket are more likely to be economically viable, enhancing their treatment-seeking behavior propensity, than people of other age brackets studied.

## CONCLUSION

Early diagnosis, evaluation of prognosis, and prompt management of impacted teeth is essential to prevent the range of oral problems that may result from their presence in the oral cavity.

## RECOMMENDATIONS

The researchers recommend as follows:

1. Dental Health Care Professionals (DHCP) should make effort towards creating better oral health awareness concerning third molar impaction in villages, schools, churches, and business places/ventures.
2. People living in both rural and urban areas should be encouraged to visit a dental clinic at least once every six months for early detection and treatment of oral problems.
3. Governments should inculcate oral health education (fully) into the training curricula of primary, secondary, and tertiary schools.

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

**OrCID iDs:** Nil identified.

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