

# Presence of impacted supernumerary teeth in the Indian population

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## ABSTRACT

A tooth that does not erupt into the dental arch during the anticipated developmental window is said to be impacted. A supernumerary tooth (ST) would be any dentition or odontogenic entity that grows from a tooth germ more often than is typical for a particular area of the dental arch (ST). The study's goal is to determine how commonly impacted supernumerary teeth are present within the Indian community. This research project at the institution which was retrospective was done on dental patients who went to the private dental hospital between March 2020 and March 2021. We looked over the medical records of 86,000 patients at the private dental institution and analyzed the data. In the study's 74,421 impaction cases, 139 instances of impacted extra teeth were found. For statistical analysis, collected data were analyzed, entered into an Excel document, and imported into SPSS version 21. In the study population, males between the ages of 21 and 35 years were more frequently observed to have supernumerary impacted teeth. Impacted teeth were more frequently observed in the posterior region rather than the anterior region. Within the constraints of the study, it was shown that males between the ages of 21 and 35 years and the posterior part of the mouth experienced impacted supernumerary teeth the most frequently.

**Key words:** Hyperdontia, impaction, innovation, innovative, mesiodens, prevalence, supernumerary teeth

## INTRODUCTION

"Any dentition or odontogenic entity that grows from a tooth germ more often than is typical for a particular area of the dental arch (ST)" is defined as a supernumerary tooth.<sup>[1,2]</sup> Tooth impaction is frequently not identified until much later and usually has no symptoms. Patients typically do

so because they wait longer than is recommended to seek treatment.<sup>[2,3]</sup> Therapeutic methods such as orthodontics and surgical approaches of the afflicted dentition are employed for the alignment of impacted teeth with the arch.<sup>[1,4]</sup> Supernumerary teeth can be seen in one or both jaws, and they can be single, many, unilateral, bilateral, erupted, or unerupted. The most frequently encountered type of this dentition is a mesiodens.<sup>[4,5]</sup> The etiology of this malformation is unknown and poorly understood.<sup>[6-8]</sup> Genetic alterations, environmental effects, and trauma are thought to be the causes.<sup>[9,10]</sup> To determine the presence, kind, and quantity of extra teeth, a careful radiographic assessment using panoramic radiographs such as orthopantomograms or three-dimensional imaging such as cone-beam computed tomography should be carried out.<sup>[11-14]</sup>

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In the latest report by Patil and Maheshwari, it was shown that supernumerary teeth were less common than impacted canines and premolars, with a prevalence incidence of 1.6%. The study group consisted of 798 individuals who had 1126 impacted teeth.<sup>[15]</sup> Sharma and Nagpal 2011's study discovered that maxillary impactions occur around 10–20 times more frequently than mandibular impactions in another investigation.<sup>[16]</sup> These extra teeth have the potential to disrupt the adjacent permanent dentition's development and normal eruption sequence as well as cause dental crowding due to an imbalance in the material between the length of the arch and the teeth, tooth displacement, spacing, radicular/root resorption, and dentigerous cyst formation.<sup>[17-19]</sup> According to a 2016 study by Jung *et al.*, the central incisor region (64.7%) and palatal location were the most often reported sites among 193 patients and 241 impacted supernumerary teeth (76.8%).<sup>[20]</sup> Our organization has a wealth of knowledge and research expertise, which has resulted in publications of the highest caliber.<sup>[21-47]</sup> This research will help in the discovery of possible pathological, cosmetic, and functional corrections for impacted supernumerary teeth. The current study's goal is to figure out how often impacted mesiodens are in the Indian population.

## MATERIALS AND METHODOLOGY

On the basis of 74,421 patients who had been referred to Saveetha Dental College, SIMATS, Chennai, India, between June 2020 and March 2021 a quantitative and analytical study was carried out.

The existence of a greater population and a plentiful supply of data were also advantages. The study was conducted in a single location and had fairly limited demography, which was both disadvantageous. One of the study's dependent variables was the existence of impacted supernumerary teeth. Both the individual's gender and age might be considered independent variables. This sample was made using patients from Saveetha Dentistry College's undergraduate and graduate dental clinics at random. The individual's age, gender, and the location of the impacted supernumerary teeth were the three variables that were calculated after the data were systematically structured using Microsoft Excel software. The Institutional Ethical Committee provided Ethical Clearance (Ethical Approval Number: IHEC/SDC/PROSTHO/21/047), and all study participants signed a written informed consent form.

The compiled data were statistically analyzed using the SPSS (IBM Corp. Released 2015. IBM SPSS Statistics for windows, version 23.0. Armonk, NY: IBM Corp.) statistics analyzer. The Pearson Chi-square correlation was utilized for the analysis of statistics.<sup>[48]</sup> Outpatients with impacted supernumerary teeth, regardless of age or gender, were eligible to participate in this study. Outpatients who did

not have any impacted supernumerary teeth were excluded from the study.

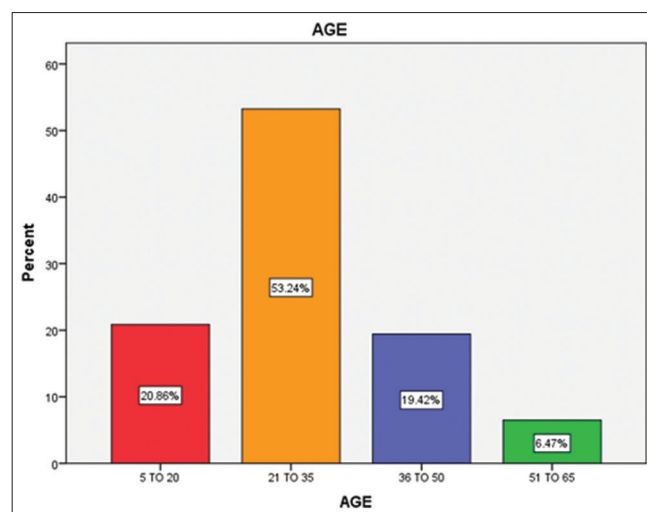
## RESULTS AND DISCUSSION

Using the three previously mentioned parameters, data were collected and sorted. Table 1 and Figure 1 explain the study population's age distribution. The age groups with the most impacted supernumerary teeth in the current study's 139 total cases were those between the ages of 21 and 35 years, followed by those between the ages of 5 and 20 (20.86%) years, 36–50 (19.42%) years, and finally, those between the ages of 51 and 65 (6.47%) years. This may be explained by the fact that people between the ages of 20 and 30 years made up the majority of those who visited dental clinics.<sup>[49]</sup> Since the diagnosis of impacted supernumerary teeth is usually an incidental finding, it could be due to increased screening of patients at this age but further research is needed to advocate this claim.<sup>[50]</sup>

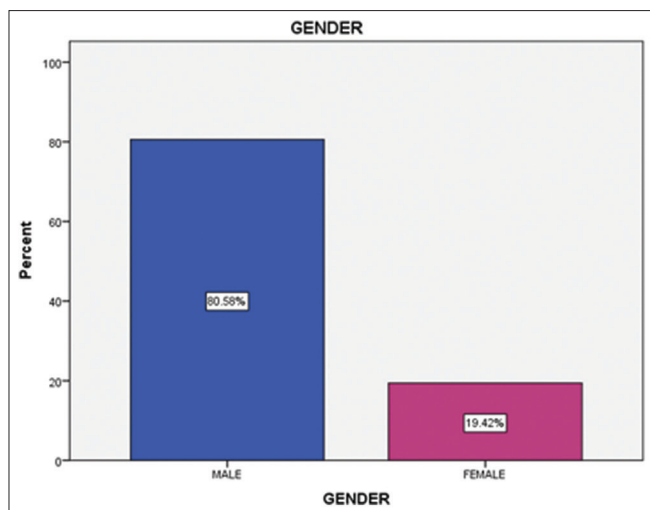
Male patients made up 80.58% of the 139 patients in the study, whereas female patients made up 19.42%, as shown in Table 2 and Figure 2. This could be explained by variations in male and female growth patterns, morphology, and hormonal levels, particularly throughout the developing years of life, although this notion needs more study to be supported. In a prior investigation, Garvey *et al.* found that

**Table 1: Based on age of the individual**

Age	Frequency (%)	Valid	Cumulative
5-20	29 (20.9)	20.9	20.9
21-35	74 (53.2)	53.2	74.1
36-50	27 (19.4)	19.4	93.5
51-65	9 (6.5)	6.5	100.0
Total	139 (100.0)	100.0	



**Figure 1:** With the population's proportion on the Y-axis and age on the X-axis, this bar graph illustrates the prevalence and distribution of impacted supernumerary teeth among various age groups



**Figure 2:** With the population’s proportion on the Y-axis and gender on the X-axis, this bar graph illustrates the prevalence and distribution of impacted supernumerary teeth among various genders

**Table 2: Based on gender of the individual**

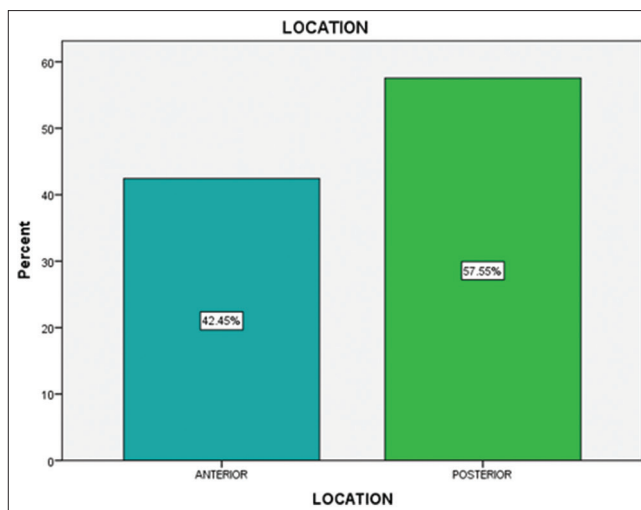
Gender	Frequency (%)	Valid percent	Cumulative percent
Valid			
Male	112 (80.6)	80.6	80.6
Female	27 (19.4)	19.4	100.0
Total	139 (100.0)	100.0	

**Table 3: Based on the Location of the supernumerary tooth**

Location	Frequency (%)	Valid percent	Cumulative percent
Valid			
Anterior	59 (42.4)	42.4	42.4
Posterior	80 (57.6)	57.6	100.0
Total	139 (100.0)	100.0	

men were afflicted by extra teeth in the permanent dentition about twice as often as women. In a 2011 study by Küchler *et al.* in a Brazilian population, it was shown that men had a higher prevalence of impacted supernumerary teeth, with a male: female ratio of 1.45:1. Rajab and Hamdan 2002’s study revealed that males were more frequently affected, with a male-to-female sex ratio of 2.2:1, suggesting that the current study’s findings are consistent with the literature.<sup>[7,51,52]</sup>

The location of the impacted supernumerary teeth in the oral cavity is shown in Table 3 and Figure 3. About 57.55% of all observed teeth were found in the posterior portion of the oral cavity, whereas 42.45% were found in the anterior region. A study by Fricker *et al.* found that a review of the literature revealed that the region around the third molar and the maxillary midline is where extra teeth are most frequently seen. In a different Lam’s 2014 study, the front maxilla and maxillary molar regions were found to



**Figure 3:** The bar graph displays the percentage of the population on the Y-axis and the frequency and distribution of location among individuals with impacted supernumerary teeth on the X-axis

have the highest levels of extra teeth. This suggests that supernumerary teeth can arise in both the anterior and posterior locations, and hence the current study’s findings are neither in agreement nor in disagreement with the literature.<sup>[53,54]</sup>

## CONCLUSION

Within the limitations of the current study, it was shown that impacted supernumerary teeth were more prevalent in males between the ages of 21 and 35 years and that they occurred in the posterior area.

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## Conflicts of interest

There are no conflicts of interest.

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