

Retrospective Analysis of Incidence of Dental Caries in Anterior Teeth between Males and Females

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ABSTRACT

Aim: To analyse the incidence of dental caries in anterior teeth between males and females.

Introduction- In India, the prevalence of dental caries is reported to be 50-60%. Dental caries are preventable, above all in the early stages. Because of insufficient awareness on prevalence of dental caries and its preventive measures, the condition is still found to be sustaining in communities of both genders. Hence the current study analyses the incidence of dental caries in anterior teeth between males and females.

Materials and methods: The study consists of 5713 individual's case sheets with the age range of 18 to 70 years. Datas were collected from patient's databases using DIAS. The data was further analyzed for class III mesial and distal caries and class IV mesial and distal caries. The collected data was tabulated and imported to SPSS.

Results- Males are affected more than females. Class III mesial caries is most common followed by class IV mesial, class III distal and class IV distal. Tooth number 11 and 21 was highly prone to dental caries among anterior teeth. Males are highly affected with class IV mesial caries and females with class III mesial caries (significant; $P < 0.001$). 11 and 21 is highly prone to class IV mesial caries followed by class III mesial, class IV distal and class III distal caries (significant; $P < 0.001$)

Conclusion: This study signifies the importance of educating the patient about oral hygiene practices and prevention methods through assessment of anterior tooth caries.

Key words: Incidence, Dental caries, Anterior teeth, Males, Females

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INTRODUCTION

Dental caries is the most common epidemic situation present worldwide. It occurs within the mouth by creating the imbalance in the pH of the saliva, caries promoting oral micro flora, thereby altering the oral environment. Dental caries is a condition where the overall wellbeing is affected including systemic condition of an individual. Many general health conditions have oral manifestations that increase the risk of oral disease which, in turn, is a risk factor for many systemic diseases, such as diabetes and cardiovascular diseases [1]. In India, the prevalence of dental caries is reported to be 50-60% [2].

Socioeconomic inequalities tend to be higher in countries where there are minimal public dental care programs than in countries with some degree of public dental-care programs [3]. Dental caries are preventable, above all the causative actors in the early stages of detection [4]. Because of insufficient awareness on prevalence of dental caries and its preventive measures, the condition is still found to be sustaining in communities of both genders.

Among all the dental caries, caries affecting the anterior teeth are more concerned by patients than those affecting the posterior teeth [5]. Due to compromise in aesthetics, the fear of tooth loss urges the patient to report to dental care. If at all, the anterior edentulous space is present, the overall confidence of the patient tends to drag down on their daily life activities.

Hence this study emphasizes mainly towards the incidence of anterior teeth caries thereby aids to build a more complete profile of oral health conditions of the South Indian population and be a complement to the analysis of global trends of the disease. Our team has

done some extensive knowledge and research experience that has translated into high quality publications [6–25]. Also multiple previous literature concentrated mainly on the posterior teeth caries than anterior teeth. Hence the current study analyses the incidence of dental caries in anterior teeth between males and females.

MATERIALS AND METHODS

Study design

This was a retrospective study for a period of 4 months from December 2020 to March 2021. The study consists of 5713 individual’s case sheets which were collected from DIAS. The data was further analyzed for class III mesial and distal caries and class IV mesial and distal caries. The obtained data was cross verified by another reviewer.

Inclusion criteria

- ✓ Patients with age between 18 to 70 years.
- ✓ Patient with class III and class IV caries.

Exclusion criteria

- ✓ Any Restorations, endodontically treated teeth, any tooth abnormality and history of tooth bleaching or radiation therapy in that particular tooth.
- ✓ Case sheets without intraoral photographs.

Statistical analysis

Data was analyzed using the Statistical Packages of Social Sciences, version 17 (IBM Corporation). Prevalence of class III and class IV caries among males and females were done using descriptive statistics. Association of type of anterior teeth caries between males and females was analyzed using chi square test with 5% level of significance. Statistical significance was set at P less than or equal to 0.05.

RESULTS AND DISCUSSION

From the study, Males (48.5%) are affected more than females (51.4%) (Figure 1). Class III mesial caries (35.3%) is most common followed by class IV mesial (33.7%), class III distal (17.9%) and class IV distal (12.9%) (Figure 2). Tooth number 11(29.8%) and 21(29.7%) was highly prone to dental caries among anterior teeth followed by 12 (12.5%), 22(11.9 %), 23 (3.94%) (Figure 3). The association between gender and type of caries was found to be significant with P<0.001. Males are highly affected with class IV mesial caries (21.6%) and females with class III mesial caries (22.7%) (Figure 4). The association between tooth number and type of caries was found to be significant with P<0.001. Tooth number 11 and 21 is highly prone to class IV mesial caries followed by class III mesial, class IV distal and class III distal caries (Figure 5).

From the present study, 48.5% of the males and 51.4% of the females were affected with dental caries in anterior

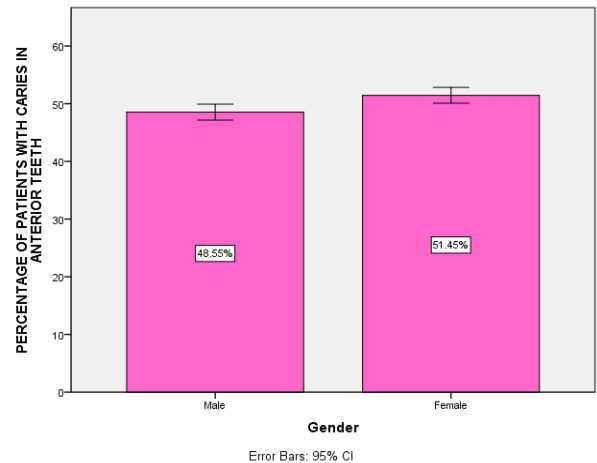


Figure 1: Graph showing prevalence of caries in anterior teeth among males and females. Males (48.5%) are affected more than females (51.4%).

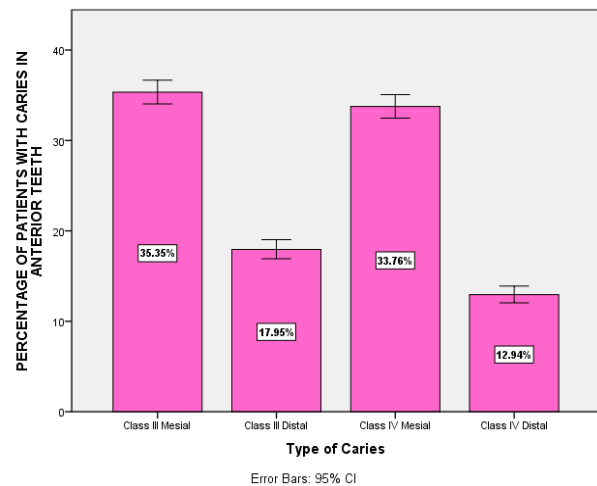


Figure 2: Graph showing the prevalence of type of caries in anterior teeth. Class III mesial caries (35.3%) is most common followed by class IV mesial (33.7%), class III distal (17.9%) and class IV distal (12.9%).

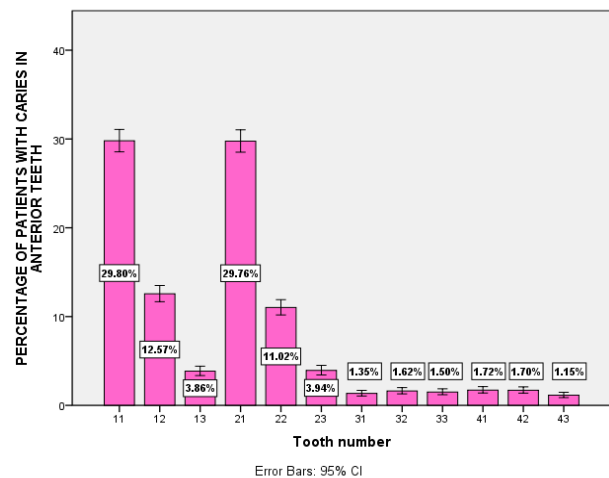


Figure 3: Graph represents the distribution of dental caries in anterior teeth based on tooth number. Tooth number 11(29.8%) and 21(29.7%) was highly prone to dental caries among anterior teeth followed by 12 (12.5%), 22(11.9 %), 23 (3.94%).

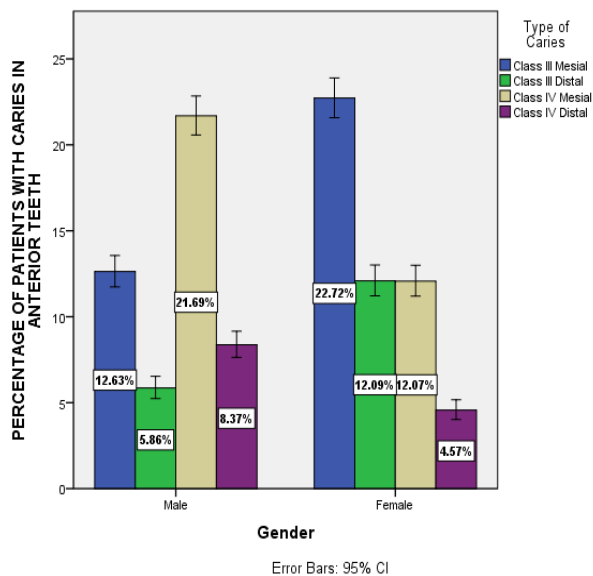


Figure 4: Graph showing the association of type of caries in anterior teeth among males and females. X axis represents the gender and Y axis represents the type of anterior dental caries. Blue color indicates class III mesial caries, Green color represents class III distal caries, Peach indicates class IV mesial caries and Violet indicates class IV distal caries. The association was found to be significant with P<0.001. Males are highly affected with class IV mesial caries (21.6%) and females with class III mesial caries (22.7%).

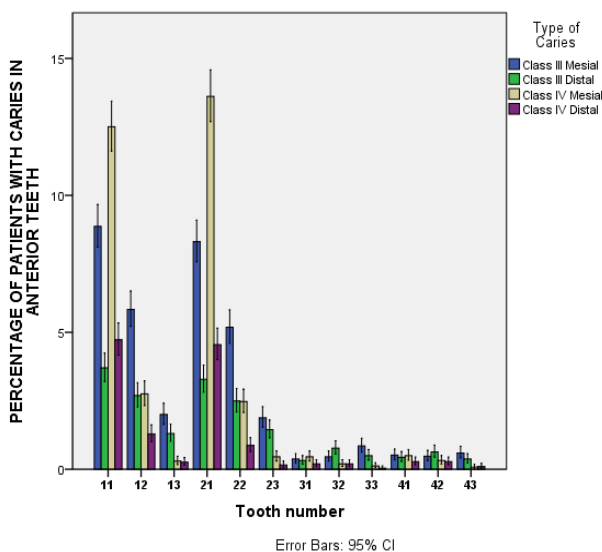


Figure 5: Graph showing the association of type of caries in anterior teeth among each tooth number. X axis represents the tooth number and Y axis represents the type of anterior dental caries. Blue colour indicates class III mesial caries, Green color represents class III distal caries, Peach indicates class IV mesial caries and Violet indicates class IV distal caries. The association was found to be significant with P<0.001. Tooth number 11 and 21 is highly prone to class IV mesial caries followed by class III mesial, class IV distal and class III distal caries.

teeth. In accordance with the result, a study conducted by Talabani, et al. reported females showed higher prevalence of anterior teeth caries than males [26]. In contrast, a study conducted by Hedge et al., showed 43.5% prevalence in females and 56.4% in males during the year 2014-2015 among the Mangalore population

[27]. The incidence or prevalence of dental caries vary among males and females based on the population the study was conducted. Previous studies concluded that higher prevalence of caries in anterior teeth is due to early eruption of teeth, oral habits and prolonged exposure to a cariogenic environment.

In the present study, class III mesial caries was found to be highly prevalent followed by class IV mesial, class III distal and class IV distal. Class III caries were found to be most common in anterior teeth compared to class IV caries which is in line with the study conducted by Santia, et al. who reported that class IV caries is the least prevalent among anterior teeth [28]. One of the significant etiologies leading to class IV caries is trauma, whereas class III caries is highly associated with food impaction, improper oral hygiene and brushing frequency which is increasingly attributed among the general population [29].

On analyzing the tooth number with anterior caries, maxillary anterior are highly affected than mandibular anterior. That is tooth number 11 and 21 were highly affected with anterior caries followed by 12 and 22. Earlier studies reported that this can be due to close approximation of submandibular gland and sublingual gland to mandibular anterior thereby preventing the process of demineralization [30].

Significant association was found between gender and type of caries. Males are highly affected with class IV caries whereas females are affected with class III caries. A study conducted by Hedge et al. no significant association was found between gender and caries among the Mangalore population [27]. In contrast, a study by Lukacs, et al. mentioned that higher caries prevalence among females can be due to their earlier eruption of dentition, therefore longer exposure of teeth to the cariogenic oral environment, frequent snacking during food preparation and imbalance of hormonal levels than males [31]. Also significant association was found between gender and the tooth which is affected. Both males and females have a high incidence of caries in maxillary anterior compared to mandibular anterior. Teeth surfaces which are susceptible to caries play an important role since the proximal surfaces are not self-cleansing, they act as retention areas hence promoting the caries [31].

CONCLUSION

From the current study, it is proved that males are more affected than females with anterior dental caries. Class III caries are found to be more common than class IV caries. Maxillary anterior teeth are more prone to caries than mandibular teeth. Thus the incidence of anterior tooth caries aids in establishing accurate oral health examination. This study also signifies the importance of educating the patients about the oral hygiene practices and prevention methods. Further studies can be done by including a wider population to promote the level of dental care to the next step.

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