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Prevalence of dental caries in the Patiala (India) population and its associated factors

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Abstract
Objectives: Due to the diversity of eating patterns among the population, India is unique in the globe. Many Indians live a completely vegetarian lifestyle for the rest of their lives for religious and cultural reasons. The goal of this study was to look into the role of several factors in the development of dental caries, including dietary habits.
Methods: Dental caries patients were evaluated for the type of caries they had and how it was related to other circumstances. Patients were given a dental examination and a questionnaire, and the data was recorded and analysed.
Results: Females had a higher rate of dental caries. Vegetarians have a higher rate of dental caries than non-vegetarians. The age group of 21-30 years old was determined to be the most affected with dental caries.
Conclusions: This study may be useful in determining the impact of various dietary factors, such as protein-rich diet, age, gender, and others, on the prevalence of dental caries, which may be useful in preventing an increase in dental caries cases and designing and planning preventive strategies for those who are most at risk.

Keywords: dental caries, orodental, dietary habit, saliva

Introduction
The most frequent oral disorders worldwide are dental caries and related mouth diseases such as gingivitis and periodontitis. The prevalence of these diseases is steadily increasing as people's eating habits alter and sugar consumption rises [1]. In India, dental caries affect 60 % to 65 % of the population [2, 3] However, numerous factors other than sugar consumption have a significant impact on this disease.
Many prior studies have proven the use of epidemiological approach as a viable research tool in order to identify the factors involved for dental caries immunity and susceptibility [4, 5]. In terms of population dietary habits, India is unique in the entire world. Many people choose to be vegetarian for the rest of their lives for religious reasons. It provides an excellent chance to investigate the impact of vegetarian and non-vegetarian diets (mixed diet) on dental caries incidence. The pattern of caries among patients attending the Dentistry department of Laxmibai Dental College, Patiala, was investigated in terms of kind of caries, age group and gender, and the most affected dietary habit.
Many scientists have advocated that, in order to combat the anticipated increase in the prevalence of dental caries in developing countries, preventive and oral health programmes be created, executed, and targeted to individuals who are most at risk of dental caries [6] As a result, the current study was carried out in order to investigate these aspects, which can aid in the creation of preventative strategies for people who are at a higher risk of developing dental caries.

Material and Methods
A total of 114 cases were included in this investigation. All of these cases were chosen from patients who visited the Dental College from July 2021 to August 2021. Individuals were chosen at random from a list of patients, and each person had an equal chance of being chosen. In order to obtain information regarding the prevalence of dental caries in the local area, basic probability random sampling was performed. Although the sample size was modest, great care was taken to ensure that the sample was representative of the patient population. The people were examined in local dental clinics and hospitals while sitting on a regular chair and facing away from direct sunlight in broad daylight. The study received ethical approval from the college ethical committee.
The participants in this study ranged in age from 5 to 72 years old. The dental examination was carried out with the assistance of illumination devices, and the results were recorded and analyzed. Patients were asked to fill out a questionnaire on the sort of caries they had and the length of time they had been experiencing symptoms.

Despite the fact that dental caries is a chronic disease that takes a long time to demineralize the dental enamel, patients were asked how long they had been experiencing visual symptoms such as demineralization and pain.

Results

We attempted to examine the number of people affected by dental caries in different genders, ages, and dietary habits among the patients in this study. Females had a somewhat greater rate of dental caries than males (Table 1). We also attempted to determine the most common type of caries among the patients examined (Tables 2). The occurrence and factor responsible for dental caries were discovered in an incidence investigation. The prevalence of dental caries among people aged 21 to 30 is illustrated by the incidence among different age groups (Table 3).

Table 1: Percent infection with dental caries (In Different Gender) among the patients studied.

Males n (%)	Females n (%)
55(48.24)	59(51.75)

Table 2: Percent occurrence of different type of caries

Root caries (%)	Recurrent caries (%)	Smooth surface caries (%)	Occlusal pits and fissure caries (%)
5.76	0.96	12.50	80.76

Table 3: Occurrence of dental caries in different age group

Age Group (years)	n (%)
0-10	4(3.5)
11-20	12(10.5)
21-30	30(26.32)
31-40	20(17.54)
41-50	17(14.91)
51-60	15(13.15)
61-70	11(9.65)
71-80	5(4.38)

Discussion

Age, sex, food, bacteria, trace elements, saliva, genetic predisposition, and tooth morphology are all factors that influence dental caries [8, 9]. Females have a slightly higher number of caries cases (P=0.510) than males (P=0.490) in this study, implying that females are more susceptible to caries than males (Table 1). This can be linked to a variety of factors, including early tooth eruption in girls compared to boys, inequalities in dental attendance due to females' lack of financial independence and fear of dentists, as well as nutritional discrepancies between housewives and working men [10-12].

The architecture of these sites, which is more retentive to carry food particles and is not fully exposed to the flushing action of saliva, is linked to the highest occurrence of occlusal pits and fissure caries. The biofilm forms and matures in the following areas on the tooth: approximate surface cervical to the contact point, and along the gingival margin, particularly during eruption. The tongue, cheeks, abrasive food, and teeth brushing protect these areas from mechanical damage. As a result, these are the places where caries lesions can be seen [13] This information can be used to estimate the severity of the disease in the local community, as well as provide a reliable estimate of labour requirements and oral health management expenditures.

Conclusion

Any disease's epidemiology is a very useful tool for determining the disease's current status among the population. The unique environment of India makes for an ideal setting for studying the various aspects linked to dental caries. Although this study is a minor step toward understanding the elements that contribute to dental caries, it may provide insight into the significance of a protein-rich non vegetarian (or mixed) dietary pattern in the prevention of dental caries. However, a more in-depth joint study is needed to determine the true involvement of these related factors in the etiology of dental caries. The information can be used to develop preventive measures against dental caries based on the factors that are linked to it.

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