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# A Survey to Estimate the Prevalence of Tooth Loss and Denture Wearers in Subjects of Different Age Groups of South Coastal Karnataka Region

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**INTRODUCTION:** Advancement in age brings into countless new health problems along with the exacerbation of existing ones. Dental awareness has led to decrease in edentulousness in elderly people. The reasons of tooth loss also differs in different age groups.

**AIM & OBJECTIVES:** The objectives of this study were to estimate the prevalence of tooth loss and denture wearers in various age groups along with the evaluation of the reasons for tooth loss.

**MATERIALS & METHOD:** This questionnaire based study was conducted in the patients visiting the department of Prosthodontics Crown and Bridge & Implantology. Subjects were interviewed and examined clinically by a single examiner. A representative convenience sample of 150 patients in age groups of 40-50, 50-60 and 60-70 years were included in the study. Descriptive statistics were applied and the Chi-square test was used to analyse the findings using SPSS version 17.0.

**RESULTS:** Tooth loss was found to be maximum in age group of 60-70 years and almost 64% wore complete dentures. The patients in age group of 40-50 years had maximum percentage of natural teeth (60%). The poor periodontal support was the main cause of tooth loss in almost 74% patients in age group of 60-70 years. Caries was the predominant cause of tooth loss in age group of 40-50 years.

**CONCLUSION:** Prevalence of tooth loss and denture wearers is maximum in bigger age groups. Loss of periodontal support is the main cause of tooth loss as age advances while caries being the major cause in young individuals.

**KEYWORDS:** Tooth loss, Denture wearers, Periodontal disease

## INTRODUCTION

The demography of the industrialized world has changed considerably in recent decades with a rapidly increasing number of elderly people. Oral health has improved considerably among the people these days. More and more percentage of elderly people are retaining their teeth. The edentulousness among elderly people has decreased considerably over the past two decades. Thus dental awareness has improved the oral health in elderly patients.<sup>1</sup> Dental caries and periodontal diseases are predominant reasons for tooth loss. However, studies have shown that 40% to 60% of tooth losses among elderly adults are attributable to periodontal disease. Lack of public concern and general awareness of the consequences of periodontal disease have contributed to its broad prevalence and tooth mortality.<sup>2</sup> In a study to determine the prevalence of dental caries among adults and elderly in an urban resettlement colony of New Delhi it was found that the prevalence of dental caries among

adults is high in this population. The prevalence of dental caries in the 35-44 years age-group was 82.4% and it was 91.9% in those  $\geq 60$  years.<sup>3</sup> A study was conducted to estimate the prevalence of teeth and dentures in individuals aged 67 years and above where results revealed that in all, 40.0% had 'own teeth only', 27.9% had 'own teeth and dentures' and 31.6% 'dentures only' and 35.8% of teeth were lost due to periodontal disease and 35.4% due to caries. Study also revealed that extraction due to periodontal problems increased with age and were conspicuous in the Indian ethnic group and were frequently associated with pocketing and tooth mobility.<sup>3,4</sup> The study had the following objectives:

1. To estimate the prevalence of tooth loss in various age groups.
2. To estimate the prevalence of denture wearers in various age groups.
3. To evaluate the reasons for tooth loss.

## MATERIALS AND METHODS

This present study is a questionnaire based study where in the patients visiting the department of Prosthodontics Crown and Bridge including Implantology were interviewed and examined clinically by a single examiner, who was duly calibrated prior to the study. After obtaining an ethical clearance, an informed, written consent was obtained from all study participants after explaining them about the aims and objectives of the study before interviews and examinations. A representative convenience sample of 150 patients in age groups of 40-50, 50-60 and 60-70 years who consented to be a part of the study were included in the study. Patients suffering from any systemic illness/ disease were excluded from the study. The data was obtained from questionnaires as well as standard clinical examination wherein the presence and number of teeth and dentures were recorded. The findings were subsequently divided into three groups: "Natural teeth only", "Natural teeth and partial dentures" and "Denture only". A total of 50 patients were selected in each age group. Since this is an OPD based study, artificial lighting was provided by the dental lamp present on the dental chair. The oral inspection was carried out with the aid of two dental mirrors and a probe per patient, which were duly sterilized and prior to examination of each patient and Denture wearers were asked to remove their denture prior to clinical examination.

Descriptive statistics were applied and the Chi-square test was used to analyse the findings using SPSS version 17.0.

## RESULTS

A Total of 50 patients were selected in each age group. The percentage of patients with natural teeth in different age groups is depicted in Figure 1. It was observed that with increase in age, the number of natural teeth declined and only 8(16%) patients in the age group had natural teeth as compared to 30 (60%) patients belonging to the age group of 40-50 years. significant differences ( $p \leq 0.05$ ) were observed among all the three age groups.

Figure 2. Depicts the percentage of patients with natural teeth and partial dentures among the three age groups. It was observed that while 18 (36%) people belonging to the age group of 40

years had partial dentures, 40 (80%) of patients belonging to the age group of 60-70 years did not have any partial dentures, which shows that the younger population aged 40-50 years as well as 50-60 years is inclined towards getting their teeth replaced. This trend decreases as age increases and is depicted in our results. There were no significant differences seen among the three age groups.

Patients who were denture- wearers are shown in Figure 3. Majority of the patients wearing dentures (32,64.0%) were seen in the age group of 60-70 years and a significant difference was seen among all three age groups ( $p \leq 0.05$ ).

Table 1. depicts the responses of the patients who attribute periodontal disease as the main factor for their tooth loss. It was observed that 60%(90) of patients reported periodontal problem as the main cause of tooth loss. It was observed that with an increase in age, more and more people attributed to periodontal disease as a reason of their tooth loss. (42.0%, 64.0% and 74.0%). Significant differences were seen among all three age groups ( $p \leq 0.05$ ).

The percentage of patients giving caries as the cause of tooth loss is shown in table 2. It was observed that only patients belonging to the age groups of 40-50 (58.0%) years attributed caries as a reason of their tooth loss. Significant differences were seen among all three age groups ( $p \leq 0.05$ ).

Table 3 depicts the percentage of patients giving 'others' as the cause of tooth loss. Only 7 (14.0%) of the patients belonging to the age group of 60-70 years gave "others" as a reason of their tooth loss. The reasons included cancer therapy, trauma etc. No Significant differences in either groups were seen.

## DISCUSSION

For evaluating the oral health situation and the need for dental and prosthetic care in population aged between 40-70 years, a survey was conducted in Mangalore region, Karnataka, India

The main reasons for tooth loss in this population were both caries and periodontal disease. However, both periodontal disease and caries

were not equally important reasons for tooth loss. Tooth loss because of periodontal disease was found in more percentage of people. This results is supported by Krishna V,<sup>7</sup> and in disagreement to Jafarian M et al.<sup>8</sup> (Iran). and Khalifa N et al.<sup>9</sup> (Sudan) who reported caries as a major cause of tooth loss.

By compiling the results obtained in study, it is seen that the tooth loss is maximum in age group of 60-70 years and almost 64% (32 patients) wear complete dentures. The patients in age group of 40-50 years had maximum percentage of natural teeth (60%).

From the data obtained in the study, it is very clear that as the age advances the main cause of tooth loss is because of loss of periodontal support of the tooth. The poor periodontal support being the main cause of tooth loss in almost 74% patients in age group of 60-70 years. Caries and its sequelae was the predominant cause of tooth loss in age group of 40-50 years.

In a similar study done in Dhulikhel Hospital, Kathmandu University Teaching Hospital, Nepal where the epidemiological variables compare well with the present study, the reason for extraction in younger age group was dental caries and in old age group was periodontal disease.<sup>10</sup>

## CONCLUSION

From the result of the survey following conclusions can be drawn:

1. Prevalence of tooth loss was maximum in age group of 60-70 years
2. Prevalence of denture wearers was maximum in age group of 60-70 years
3. Loss of periodontal support is the main cause of tooth loss as age advances.
4. Caries is the main cause of tooth loss in younger individuals.

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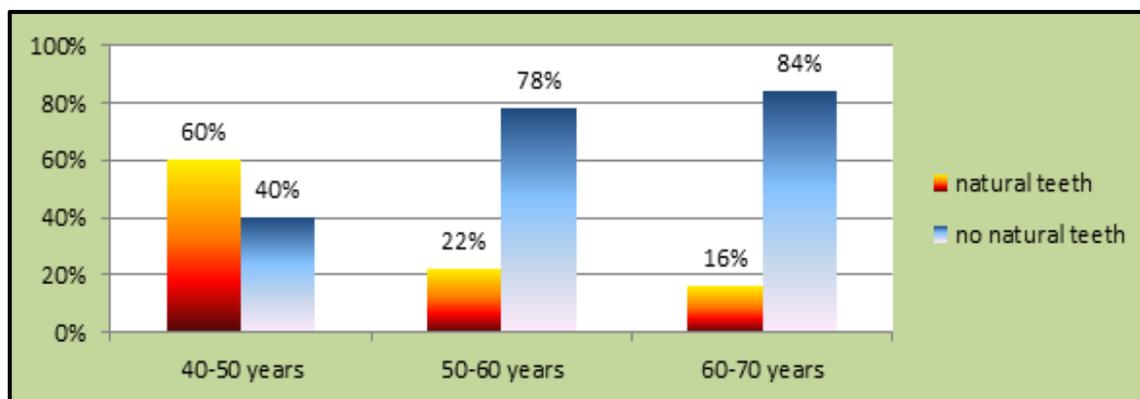
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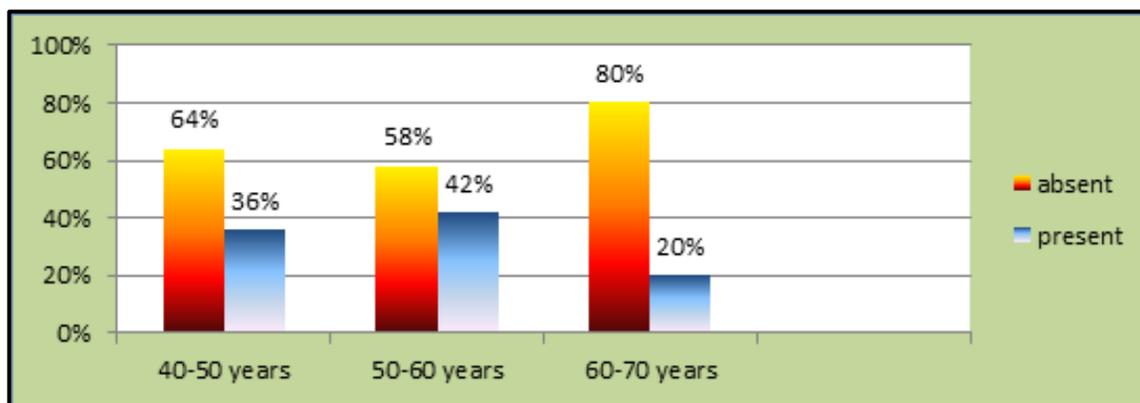
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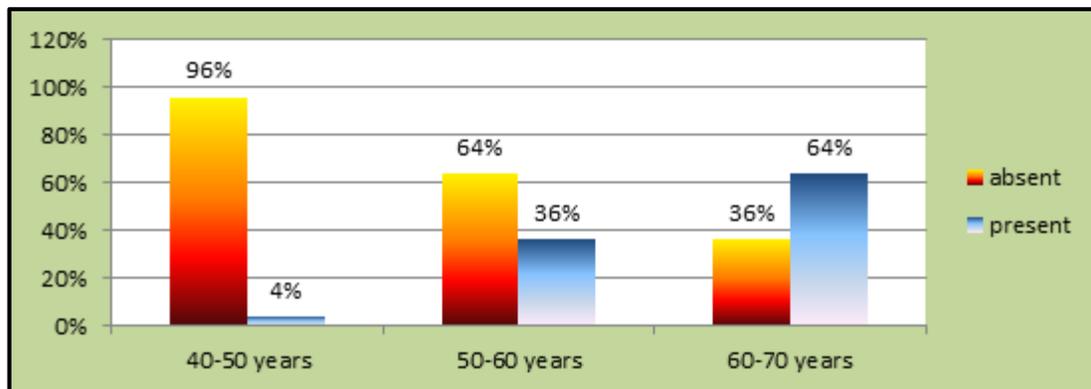
## LEGENDS



**Figure 1.** Percentage of patients with natural teeth



**Figure 2.** Percentage of patients with natural teeth and partial dentures



**Figure 3.** Patients who were denture-wearers

Age Group (In Years)	Periodontal problem as a cause of tooth loss		Total n(%)	p value
	No n,(%)	Yes n,(%)		
40-50	29(58.0)	21(42.0)	50(100)	.004*
50-60	18(36.0)	32(64.0)	50(100)	.004*
60-70	13(26.0)	37(74.0)	50(100)	.001*

**Table 1.** Patients who attribute periodontal disease as the main factor for their tooth loss

Age Group (In Years)	Caries as a cause of tooth loss		Total n(%)	p value
	No n,(%)	Yes n,(%)		
40-50	21(42.0)	29(58.0)	50(100)	.000*
50-60	32(64.0)	18(36.0)	50(100)	.000*
60-70	44(88.0)	6(12.0)	50(100)	.000*

**Table 2.** Patients who attribute dental caries as the main factor for their tooth loss

Age Group (In Years)	Caries as a cause of tooth loss		Total n(%)	p value
	No n,(%)	Yes n,(%)		
40-50	50(100)	0(0)	50(100)	.052
50-60	50(100)	0(0)	50(100)	1.25
60-70	43(84.0)	7(14.0)	50(100)	.074

**Table 3.** Patients who attribute other causes as the main factor for their tooth loss