# The Prevalence of Dental Caries among Afghan Adults at Dentistry Teaching Clinic, Kabul

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## Abstract

Caries are a chronic dental disease that causes the loss of hard tooth tissue. If it is not diagnosed and treated in time, it will cause tooth loss anxiety in the act of chewing and speaking affecting the burden and beauty of a person, in addition, it can cause another disease of the teeth and maxillofacial areas. The general purpose of this study is to obtain sufficient information about the prevalence of dental caries for its prevention and treatment so that the occurrence of ocular disease can be controlled and its etiologic should be considered. The study was conducted from the first date of July to the 30 of December among 18 to 65 years old people referred to the dentistry teaching clinic. In this study, the prevalence of dental caries at different ages was observed in 3,440 in 18 to 65 years old people who were referred to the teaching clinic of dentistry. The prevalence of dental caries in the above ages was 95.98%, observed in 59.6% of females and 40.4% of males with an average of 18 to 65 years old. The study also found that mood teeth were more caries than old teeth, with a percentage of 85.70. No significant difference was seen in the upper and lower jaws, and the nine age divisions in the group 18 to 29 years were the highest prevalence of caries with a percentage of 49.08. The results of this study showed the prevalence of caries in females compared to males and the position of teeth in the jaw the temporal tooth relative to the anterior teeth.

**Keywords:** Chronic dental disease; Dental; Dental Caries

## Introduction

Dental caries is one of the most common chronic dental diseases worldwide. Dental Caries, otherwise known as tooth decay. If it is not diagnosed and treated in time, it will cause tooth loss anxiety in the act of chewing and speaking affecting the burden and beauty of a person [1-3]. In addition, it can cause other diseases of the teeth and maxillofacial areas [4]. In 1997 dental caries were in 190 countries that are part of WHO regions, the average was 2.11% [5]. According to a cross-sectional survey, approximately 91% of U.S adults aged 20 to 64 had dental caries in permanent teeth, dental caries among adults aged 35 to 64 was 94% [6]. A Dental Health Survey in the UK shows almost a third of the dentate (31%) had visible caries in the dentine, representing many millions of people with decay, among the dentate adult with caries at this level, a mean of 2.7 teeth were affected, in particular, 36% of 25 to 34 years olds were affected, 26% of 45 to 54 years old and 22% of 65 to 74 years old [7]. Additionally, a cross-sectional study shows in total, 431 Iranian participants (95.8%) aged 40 to 45 years, 163 participants (37.8%) did not have and decayed tooth, and 268 participants (62.2%) were diagnosed with at least one decayed tooth [8]. The case study of 104 Indian shows that the occurrence of dental caries was found to be slightly higher in females (51.45%) than males (49.51%), the occurrence of dental caries was high in Vegetarian (85.57%), Non-vegetarians (6.73%), tobacco user (7.69%) and the incidence among different age group shown the occurrence of dental caries among 21 to 30 years' population (26.92%) [9]. The cross-sectional study in Karachi comprising 500 patients showed, that the prevalence of dental caries in Rural 221 patients was (52.7%), in Urban 198 patients were (47.3%), and the study reported 3.7% at the age of 35 to 34 years [10].

Various factors that have been involved in dental caries are bacteria, genetics, saliva, diet, age,

sex, smoking, medicine, and tooth location. According to recent studies, bacteria, colonization by mutant streptococci, and other cariogenic bacteria at a young age could be a key risk factor for caries development. However, the role of mutant streptococci as the main cause of caries has not been proven, because of the complexity of the oral microflora, which contains several hundred species of bacteria and millions of cells growing on a single tooth surface, no single bacterial species can predict caries development in a particular person. Social-economic status is a stronger predictor of caries risk in children than in adults, it is still important in adults. Because dental caries generally are more prevalent in lower than higher socioeconomic classes, the dentist should consider the social environment of the patient as available to the patient the medical history, in the analysis of caries risk [11,12]. There is no study demonstrated that Dental caries among Afghan adults. Therefore, we aimed to examine dental caries at the teaching medical hospital in Kabul, Afghanistan.

## Materials and Methods

### Study design: An observational study

**Study participants:** We selected the 3,440 patients out of 2,034 participants from the random simple selection among 18 to 65 years old in both genders, which referred to the dentistry teaching clinic (Stomatology of Kabul University of Medical Sciences), from Jul to December 30th, 2018. Additionally, we examined by examination equipment. The inclusions of our study are both genders, with adults ages 18 to 65 years, and all patients were allowed to join in our study. And the excluded from our studies are the patients with the chronic disease under the age of 18 years old and over 65 years old. As well, we trained the data collector for all variables. Such as sex (phenotypes) we detect the sex of participants by phenotypes. The age we detect the age of participants between 18 to 65 years old. We detect the Maxillas with anatomic location of participants and detect the Salfi jaws with anatomic location of participants. We detect the anterior and posterior teeth by anatomic location of participants. The study was ethically approved by the medical bioethics committee of Spinghar Institute of Higher Education (Code: 1386 to 1405).

## Results

The prevalence of dental caries in both females and males was 3,302 tons (95.98%). Of the 3,440 patients, 1,402 were males and 2,038 were females. In the male class, out of 1,402 them, 1,332 were caries. Of the 2,038 female patients, the caries outbreak was reported in 1970. In this study which was observed in 95.98% of caries patients, the prevalence of dental caries was different in different individuals for some clients, caries had more than one tooth. Among the teeth infected with caries, 4,349 teeth infected with caries were observed and recorded from both anterior and posterior teeth of the upper and lower jaws. 623 (14.30%) anterior teeth and 3,735 (85.70%) posterior teeth were exposed to caries. Caries outbreaks were recorded in the upper jaw 2,216 (50.85%) and the lower jaw 2,142 teeth (49.15%). The study of the prevalence of caries age in terms of age was conducted in five age groups. The first group, which was between the ages of 18 to 29, 2,139 teeth 49.08%, the second group, which was between the ages of 30 to 39, 889 teeth 20.39%, the third group, which was between the ages of 40 to 49, 740 teeth 16.98%, the fourth group, which was between the ages of 50 to 59, 379 teeth 8.69%, the fifth group, which was 60 years old and above 211 teeth which were 4.84% registered.

## Discussion

Our study demonstrated that the prevalence of dental caries

**Table 1:** The demographics of participants.

| Variables | | Percentage | Frequency |
|---|---|---|---|
| Sex | Female | 59.60% | 1970 |
| | Male | 40.40% | 1332 |
| Caries | Maxilla | 50.85 | 2216 |
| Location on jaw | Mandibula | 49.15 | 2142 |
| Caries | Anterior teeth | 14.3 | 623 |
| Location | Posterior teeth | 85.7 | 3735 |
| Age | 18-29 years old | 49.08 | 2139 |
| | 30-39 years old | 20.39 | 889 |
| | 40-49 years old | 16.98 | 740 |
| | 50-59 years old | 8.69 | 379 |
| | 60 years old and older | 4.84 | 211 |

in both females and males was 3,302 tons (95.98%). Of the 3,440 patients, 1,402 were males and 2,038 were females. In the male class, out of 1,402 them, 1,332 were caries. Of the 2,038 female patients, the caries outbreak was reported in 1970. In this study which was observed in 95.98% of caries patients, the prevalence of dental caries was different in different individuals for some clients, caries had more than one tooth. These findings support our aim. For instance, in a study conducted by Devey Bruce et al in the United States in 2011 to 2012, the prevalence of caries was 91% which is almost consistent with our results [13]. Also, in our study, the highest incidence of caries was found in females at 59.6%, According to research literature conducted by social Karpal Singh et al. in Tanzania in 2013, more than 436 patients received class at 58.7%, which is more than the male class that complies. In our research, there was no significant difference between Alavi and Salafi jaws (49.15% of Salafi jaws and 50.85% of Maxillas). According to the research literature conducted by Sohal Karpla Singh et al. in Tanzania in 2013, no difference was found in terms of the jaw (50.3% of the Maxilla and 49.7% of the Salafi jaw), which is in perfect agreement. The research I did on the posterior teeth found that the highest incidence of caries was 85.70% and that of the anterior teeth was 14.30%, as seen in the literature, in a study conducted by Dr. Mohammad Usman Riyadh, they found that 77% of Caries were found in the posterior teeth and 23% in the anterior teeth, it can be seen that in both studies, posterior teeth show the highest incidence of caries. From 2001 to 2004 in Istanbul, Turkey, also the prevalence of caries in posterior teeth compared to anterior teeth had been confirmed, with anterior teeth at 31.6% and posterior teeth at 68.4%. According to the age group of caries in the group 18 to 29 years, the highest incidence of caries in our study was 49.08%. In a study conducted in Tanzania by Sohal Karpal Singh et al., the incidence of caries in the age group of 18 to 29 years received 41.1%, which is the highest incidence of caries among other groups, in our research, caries in this group also lot. The result of this study shows that the prevalence of caries is higher in females than in males and in the location of the teeth in the jaws of posterior teeth compared to anterior teeth. And no significant difference was seen from the jawbone; its events still show the most cases according to the group of 18 to 29 years. The prevalence of dental caries in our center (22.6%) falls within the previously reported 4% to 30% rates for Nigeria.

## Conclusion

In our study, we reported patients with dental caries problems among Afghan adults in Kabul Teaching Clinic.

## Acknowledgment

## Author Contributions

WA, NAS was involved in the study's conception, design, statistical analysis, and interpretation of the data. AMB, and NAS, were involved in data collection, data cleaning, statistical analysis, and manuscript drafting. AMB supervised the study. All authors approved the final manuscript for submission.

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