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Assessment of Prevalence of Dental Caries and the Associated Factors Among Patients Attending Dental Clinic in a Known Area.

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KEYWORDS

Dental Caries, Associated Factors

ABSTRACT:

Background: This study was conducted for the Assessment of prevalence of dental caries and the associated factors among patients attending dental clinic in a known area.

Material and methods: In this study, overall 100 participants took part. The subjects who were unable to communicate were excluded from the study. A dentist performed the oral examination. During an oral examination, the respondents' hygienic conditions were observed. Data was gathered using an organized, pre-tested Amharic version of a questionnaire that was initially written in English. After a pre-test, the questionnaire was adjusted appropriately for the main study. Data collectors were chosen after consulting with their immediate supervisors and taking into account both their aptitude for building trusting relationships with clients and their accuracy in recording questionnaire replies

Results: In this study there were 35 females and 65 males. Most of the subjects belonged to the age group of 20-29 years. It was observed that out of 100 participants, dental caries was present in 84 subjects. 80 subjects had poor oral hygiene. 79 subjects did not follow the proper tooth brushing method for brushing teeth. Roughly 70% of the subjects brushed their teeth once in a day. It was also observed that the subjects residing in urban areas were more susceptible to dental caries (59%) as compared to the ones residing in rural areas (41%). 84 subjects out of 100 consumed diet rich in carbohydrates and low in fibre and they also consumed high amounts of sugars with their meals hence they were more susceptible to dental caries.

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Conclusion: The prevalence of dental caries was high. The factors leading to this disease were poor oral hygiene, lack of using correct method for tooth brushing, high sugar intake and residency in urban areas.

Dental caries is one of the oral health problems which cause the destruction of the hard parts of a tooth by the interaction of bacteria and fermentable carbohydrates.[1,2] Now a day dental caries on the rise to become major public health problems worldwide, nearly 60–90% of children and about 100% of adults have dental cavities, often leading to pain and discomfort.[3] The problem related with dental caries leads to a decrease in the quality of life of the affected individuals and high economic costs for equally individuals and society, with disparities related to well-known issues of socioeconomics, immigration, lack of preventive efforts, and dietary changes.[4]

Dental caries develops over time and it has multiple causative agents. Dietary habits, which influence normal flora of the oral cavity, along with host susceptibility is the main factor for dental caries development. Although not often life-threatening, dental caries represents a major public health problem because of its high prevalence and significant impact on general health.[5] Based on the Global Burden of Disease, dental caries (untreated) of permanent teeth is the most predominant condition. About half a billion children are affected by dental caries of milk teeth.[6]

There is a piece of evidence to prove the interrelationship between oral and general health.[7] Most systemic diseases such as diabetes and the heart-related problem may have oral signs and symptoms. Even though there is improvement in maintaining oral health worldwide, the problem is still predominant in list-income countries.[8]

Hence, this study was conducted for the Assessment of prevalence of dental caries and the associated factors among patients attending dental clinic in a known area.

Material and methods

In this study, overall 100 participants took part. The subjects who were unable to communicate were excluded from the study. A dentist performed the oral examination. During an oral examination, the respondents' hygienic conditions were observed. Data was gathered using an organized, pre-tested Amharic version of a questionnaire that was initially written in English. After a pre-test, the questionnaire was adjusted appropriately for the main study. Data collectors were chosen after consulting with their immediate supervisors and taking into account both their aptitude for building trusting relationships with clients and their accuracy in recording questionnaire replies. Additionally, the principal investigators gave them two days of training on interviewing, handling, and upholding confidentiality as well as ethical considerations. One dentist professional and the investigators oversaw daily operations on the location during data gathering. Statistical analysis was carried out using SPSS software.

Results

Table 1: Socio-demographic characteristics of patients.

Variable	Frequency
Age	
<20	10
20-29	39
30-39	18
40-49	12
50-59	13
≥60	08

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Gender	
Males	65
Females	35

In this study there were 35 females and 65 males. Most of the subjects belonged to the age group of 20-29 years.

Table 2: Prevalence of dental caries.

Prevalence	Number of subjects
Absent	16
Present	84
Total	100

It was observed that out of 100 participants, dental caries was present in 84 subjects. 80 subjects had poor oral hygiene. 79 subjects did not follow the proper tooth brushing method for brushing teeth. Roughly 70% of the subjects brushed their teeth once in a day. It was also observed that the subjects residing in urban areas were more susceptible to dental caries (59%) as compared to the ones residing in rural areas (41%). 84 subjects out of 100 consumed diet rich in carbohydrates and low in fibre and they also consumed high amounts of sugars with their meals hence they were more susceptible to dental caries.

Discussion

Dental caries is a bacterial infectious disease of the hard tissue of the tooth by the interaction of cariogenic bacteria and easily fermentable carbohydrates.[9] Dental caries is one of the major orofacial problem and indicator of the burden of oral health throughout the globe.[10,11] Even if, the prevalence of dental caries varies from country to country, it is a fact that the disease has a wide geographic distribution, high prevalence, and graded severity.[12] The prevalence was higher in minority and economically poor community.[13]

Dental caries affects the quality of life of the affected patients and highly affect the economy of the individual and society. The presence of carious tooth affects work performance, eating and speaking and also impair the growth and development.[14,15]

Hence, this study was conducted for the Assessment of prevalence of dental caries and the associated factors among patients attending dental clinic in a known area.

In this study there were 35 females and 65 males. Most of the subjects belonged to the age group of 20-29 years. It was observed that out of 100 participants, dental caries was present in 84 subjects. 80 subjects had poor oral hygiene. 79 subjects did not follow the proper tooth brushing method for brushing teeth. Roughly 70% of the subjects brushed their teeth once in a day. It was also observed that the subjects residing in urban areas were more susceptible to dental caries (59%) as compared to the ones residing in rural areas (41%). 84 subjects out of 100 consumed diet rich in carbohydrates and low in fibre and they also consumed high amounts of sugars with their meals hence they were more susceptible to dental caries.

Geleto A et al[16] investigated the prevalence of dental caries and associated factors among patients visiting Shashamane Comprehensive Specialized Hospital (SCSH). A hospital-based cross-sectional study was conducted among 288 patients who visited SCSH dental clinic from March 1, 2021, to April 15, 2021. A questionnaire was employed to collect the background characteristics of the participants. Dental caries was confirmed as per World Health Organization guidelines. Data were analyzed using SPSS version 24. Bivariable and multivariable logistic regression were used to determine predictors of dental caries. A *p*-value less than 0.05 was taken as a cut point to determine a significant association. The overall prevalence of dental caries was 64.6% with 95% CI (58.8–70.1). The mean of Decayed, Missing, and Filled Teeth was 1.33. Dental caries was significantly higher among respondents who did not brush their teeth (AOR = 3.589, 95% CI:1.756–7.334), who consumed sugary food (AOR = 3.650, 95% CI: 1.747–7.628), those with monthly a income of less than 5000.00 Ethiopian Birr (AOR = 2.452, 95% CI (1.193–5.042), and those who had poor oral hygiene status (AOR = 1.826, 95% CI: 0.901–3.700). This study revealed a high prevalence of dental caries among patients visiting the dental clinic. Tooth brushing habits, consumption of sugary food, and poor oral hygiene were significantly associated with dental caries.

Teshome A et al[17] investigated the prevalence of dental caries and associated factors in northwest Ethiopia. A hospital-based cross-sectional study was conducted in 368 patients who visited the University of Gondar Comprehensive Hospital Dental Clinic. A systematic

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random sampling technique was used to select the samples. Data were collected by three qualified dental surgeons using a pre-designed questionnaire modified from a WHO oral health survey and the clinical examination was done using the WHO dental caries diagnosis guideline. Data analysis was done using SPSS 20. Descriptive data were presented in tables and logistic regression analysis was done to identify the possible predisposing factors using odds ratios with 95% confidence interval. The prevalence of dental caries in this study was 23.64% (95% CI: 19.30, 28.00) with a significant difference between females (30.56%) and males (17.02%). Being female (AOR=2.15 (95% CI: 1.31, 3.52), poor oral hygiene practice (AOR=2.44 (95% CI: 1.46, 4.07), being diabetic (AOR=8.15 (95% CI: 3.2, 20.75), low educational level (AOR=1.81 (95% CI: 1.05, 3.1), low monthly income (AOR=3.05 (95% CI: 1.54, 6.02) and halitosis (AOR=10.98 (95% CI: 5.68, 2.24) were significantly associated with dental caries. The mean DMFT score was 1.095±0.24 (SD). The majority of the DMFT (70.59%) was due to decay, while filled tooth accounted for only 2.17% of the DMFT. The DMFT score was higher in females (0.625), urban residents (0.85), and those with montly income of ≤2500 Ethiopian birr (0.86). The mean DMFT was 0.13. The prevalence of dental caries in the study participants was 23.64% andwas higher in males than females and in diabetic patients. Female gender, poor tooth brushing habits, diabetes mellitus, and halitosis were significant predictors associated with dental caries.

Conclusion

The prevalence of dental caries was high. The factors leading to this disease were poor oral hygiene, lack of using correct method for tooth brushing, high sugar intake and residency in urban areas.

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