

Awareness about Dental Complications among Diabetic Patients in Madurai

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Abstract

Diabetes mellitus is a growing public health concern. Preventive dental care is found to be associated with dental knowledge and hence a study was done to assess knowledge, attitude, and practices of diabetic patients attending outward patient in a government hospital in Madurai. **Methodology:** A cross-sectional study was conducted among 308 diabetic patients attending the government hospital in Madurai. A pretested questionnaire was used. Descriptive statistics was done to describe the frequency. **Results:** It was found from the study that effect of diabetes on oral health was known by about 52 (16.9%) study subjects. Out of 308 respondents, 266 (86.4%) brushed their teeth once daily and 42 (13.6%) brushed twice daily. Only 38 (12.3%) study participants said that they want to get education on oral health and diabetes. **Conclusion:** The level of awareness about oral complication in diabetic patients was found to be deficient. Most diabetic patients were not aware about various complications of diabetes and the effect of diabetes on the oral health. The attitude of the diabetic patients toward oral health was found to be deficient. The practice of the diabetic patients toward oral health was found to be good.

Keywords: Attitude, awareness, diabetes, oral health

INTRODUCTION

The World Health Organization has recently declared it to be a pandemic.^[1] Diabetes mellitus (DM) is considered a leading cause of death due to its microvascular and macrovascular complications.^[2,3] The most common types of diabetes are Type 1 (also known as insulin dependent) and Type 2 (also known as noninsulin dependent).^[3]

DM is one of the most frequent pathologies that dentists encounter.^[4] The prevalence of diabetes in adults worldwide was estimated to be 4% in 1995 and is predicted to rise to 5. Four percentage by the year 2025. The countries with the largest number of people with diabetes are India, China, and the U.S.^[5]

Poorly controlled diabetes could lead to complications that may even be life-threatening. Long-term complications include retinopathy, nephropathy, autonomic neuropathy, peripheral neuropathy, and cardiovascular disease.^[6,7]

Sustained hyperglycemia affects almost all tissues in the body.^[8] Oral complications of diabetes include xerostomia, opportunistic infections, greater accumulation of plaque,

delayed wound healing, susceptibility to periodontal disease, oral paresthesia, and altered taste.^[9]

A considerable body of research has found a relationship between periodontal disease and diabetes. Various researches concluded that diabetes can affect the periodontium and that periodontitis is an important complication of diabetes.^[10]

Diabetes has a negative impact on the patient's health due to its many complications. Diabetic patients develop complications due to lack of awareness of the disease. There is increasing amount of evidence that patient education is the most effective way to lessen the complications of diabetes.^[11]

The present study aimed to gather baseline information on knowledge, attitude, and practices of diabetic patients

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attending outward patient in a government hospital in Madurai regarding their oral health with the view of enhancing dental health education for this population, which would upgrade their knowledge. This is believed to improve the oral health status of them, which in turn helps them to control diabetes and, ultimately, their quality of life.

Objectives

1. To assess the knowledge about oral complications among diabetic patients attending the government hospital in Madurai
2. To assess the oral health practices among diabetic patients attending the government hospital in Madurai.

METHODOLOGY

Study design: Descriptive cross-sectional study.

Study population: Diabetic patients attending the outward patient in Government hospital in Madurai.

Sample size: 308.

Obtaining the approval from authorities, ethical clearance to conduct the study was obtained from the institutional review board. Further, permission was also obtained from the government hospital where the study was carried out. Informed consent was obtained from individual subjects after explaining the purpose of the study.

Inclusion and exclusion criteria

Inclusion criteria

1. Type 1 and Type 2 diabetic patients who were willing to participate in the study
2. History of diabetes for a minimum period of 3 months.

Exclusion criteria

1. Those who were not willing to participate
2. Critically ill patient.

Sampling methodology

The study sample for the present study was selected using convenient sampling method.

Data collection

Data were collected by two of the authors using a survey pro forma which comprised a questionnaire.

Questionnaire and demographic data

A pretested questionnaire which included demographic data, related to oral complications in diabetic patients, and questions to assess oral hygiene practices were administered to individuals.

Statistical analysis

The data recorded were transferred and tabulated in the computer, Windows Microsoft Excel (2007), for the purpose of the data analysis. Descriptive statistics was done to describe the frequency of responses.

RESULTS

A cross-sectional study was conducted among 308 patients attending a government hospital in Madurai.

About 304 (98.8%) study subjects replied that they were not aware about the type of diabetics they have been suffering. Only 2 (0.6%) subjects were aware about the type of diabetics they have been suffering and 2 (0.6%) were not sure.

It was found from the study that effect of diabetes on general health was known by about 120 (39%) study subjects, 181 (58.8%) study participants were not aware about the effect of diabetes on general health, and 7 (2.2%) were not sure about the effect. Most of the study participants were not aware that diabetes may increase the risk of fungal infection [Table 1].

It was found from the study that effect of diabetes on oral health was known by about 52 (16.9%) study subjects, 226 (73.4%) study participants were not aware about the effect of diabetes on oral health, and 30 (9.7%) were not sure about the effect. Most of the study participants were not aware that periodontal disease may be a risk factor for diabetic complication [Table 2].

In the present study, it was found that about 70 (22.7%) study participants knew that diabetic patients are more prone to severe gum problems; 236 (76.6%) reported that there was no relation between diabetes and periodontitis and 2 (0.7%) said they do not know about that. About 88% of the respondents reported to have dry mouth sensation [Figure 1] Only 12.3% of the respondents want to get education about oral health and diabetes [Figure 2].

Out of 308 respondents, 266 (86.4%) brushed their teeth once daily and 42 (13.6%) brushed twice daily.

DISCUSSION

DM is a growing public health concern and a common chronic metabolic disease worldwide. DM affects all age groups, but is more common in adults.^[3]

Table 1: Responses given by study subjects related to the statement "diabetes may increase the risk of fungal infection"

Responses	Frequency (%)
Yes	2 (0.6)
No	305 (99)
Not sure	1 (0.4)

Table 2: Responses given by study subjects related to the statement "periodontal disease is risk factor for diabetic complication"

Responses	Frequency (%)
Yes	8 (2.6)
No	291 (94.5)
Not sure	9 (2.9)

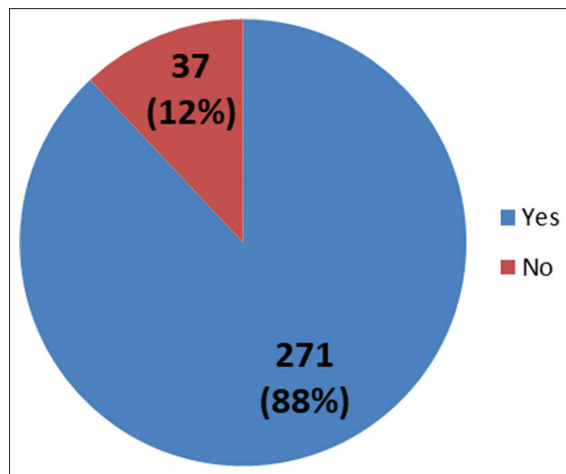


Figure 1: Responses given by study subjects related to the statement “Do you have dry mouth sensation”

Preventive behaviors like brushing, flossing, and periodic dental visits have a positive correlation with better oral health. Oral hygiene behavior and oral health care depend on a number of factors. Patients comply better with oral care regimens when informed and positively reinforced. Lack of information is among the reasons for nonadherence to oral hygiene practices. A higher likelihood of seeking preventive dental care is found to be associated with dental knowledge.^[12] Therefore, a cross-sectional descriptive study was conducted among outpatients attending the government hospital in Madurai to assess the knowledge about oral complications.

It was found in the present study that 22.7% of study participants knew that diabetic patients are more prone to severe gum problems. This finding is lower than the study conducted by Kamran Masood Mirza *et al.* diabetic patients visiting the Diabetic Clinic of Shaikh Zayed Medical Complex, Lahore, Pakistan in that 35.4% of the study subjects were aware that diabetic patients were prone to get oral diseases. Furthermore, in a study done by Faten M. R. Ismaeil and Neima Ali among diabetic patients visiting the primary health-care centers in Abha city, 47.7% of the study participants were aware that diabetic patients were more prone to severe oral diseases. This study showed that there is lack of awareness about the relationship of diabetes with oral complications and more than half of the participants did not have adequate oral health knowledge related to diabetes.

Regarding the attitude of the diabetic patients toward oral health, only 12.3% of study participants in the present study want to get education about the effect of diabetes on oral health. This finding is lower than the study conducted by Faten M. R. Ismaeil and Neima Ali, in that about two-thirds (65.8%) of the patients want to get education.

Majority of the study participants brushed their teeth once daily in the present study. This finding is in agreement Faten M. R. Ismaeil and Neima Ali among diabetic patients visiting the

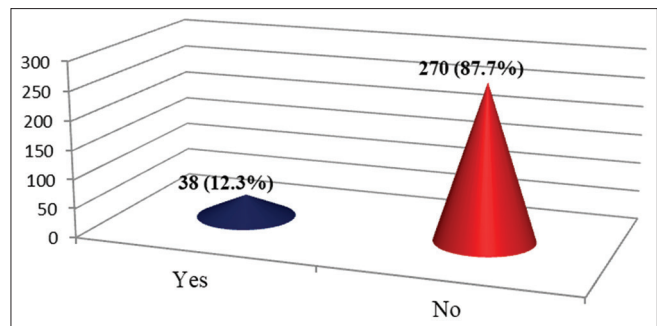


Figure 2: Responses given by study subjects related to the statement “Do you want to get an education about oral health and diabetes”

primary health-care centers in abha city, in which most of the study subjects brushed their teeth at least once daily. Whereas, in a study conducted by Kamran *et al.*, overall oral hygiene measures in diabetic patients were found to be deficient.

Poor oral hygiene could cause caries and periodontal disease leading to loss of teeth.^[13,14,15] In addition, there are a number of systemic diseases such as diabetes, leukemia, and hyperthyroidism, whose effect on the oral cavity could make the teeth susceptible to exfoliation. They could increase the risk of caries as a result of interfering the normal function of salivary glands, or affect the periodontal tissues, which support the teeth. In addition, periodontal disease is a prevalent disorder with risk parameters that contribute to mobility in terms of decreasing oral function and increasing tooth loss.^[15,16]

CONCLUSION

The level of awareness about oral complication in diabetic patients was found to be deficient. Most diabetic patients were not aware about various complications of diabetes and the effect of diabetes on the oral health. The attitude of the diabetic patients toward oral health was found to be deficient. The practice of the diabetic patients toward oral health was found to be good.

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