Awareness in Oral Hygiene Status in Diabetic Cases: An Institutional Study

Sreepreeti Champatyray[1], Saurjya Ranjan Das[2], Ipsita Mohanty[3], Neeta Mohanty[4], Jagannath Patro[5]

[1]Assistant Professor, Department of Oral Pathology and Microbiology, Institute of Dental Sciences, [2]Associate Professor. Department of Anatomy, Institute of Medical Sciences, [3]Assistant Professor, [4]Professor & Head, [5]Postgraduate Student, Department of Oral Pathology and Microbiology, Institute of Dental Sciences, Siksha 'O' Anusandhan (Deemed to be University), Bhubaneswar, Odisha, India

Abstract

Objectives: The objectives of the study were to: (1) assess the knowledge and awareness of diabetic patients of their risk for systemic and oral diseases as complications associated with diabetes, (2) to assess their attitudes toward sustaining good oral health through proper oral hygiene and regular dental check-ups, and (3) to the extent that they are aware, to determine how they became aware.

Method: One hundred self-administered questionnaires were distributed to assess the main objectives of the study. Only completed questionnaires were used in the current study data analysis.

Results: A majority of the participants suffering from Type 2 diabetes (58%). The awareness of diabetic patients of their increased risk for oral diseases was not upto the benchmark point . Their attitude towards good oral hygiene status was not desired. Likewise, 43% brushed their teeth once daily and 49% never used dental floss. Regarding participants' sources of awareness towards to dentist about diabetics is 50%.

Conclusions: Diabetic patients are found to have little knowledge of their increased risk for oral diseases. Inorder to promote proper oral health and to reduce the risk of oral diseases, health professionals in both thedental and medical fields need to take the responsibility to develop programs to educate the public about theoral manifestations of diabetes and its complications on oral health.

Keywords: *Diabetes; oral health; periodontal disease; oral self-care; oral diseases; diabetes complications.*

Introduction

Diabetes mellitus has been increasing at such an alarming rate worldwide that recently the World Health Organization (WHO) declared the disease an epidemic. The number of estimated cases of diabetes has increased from 30 million in 1985 to 135 million in 1995, and is projected to increase to 366 millionby the year 2030.[1] The prevalence of diabetes mellitus currently affects more than 62 million Indians, which is more than 7.1% of the adult population. The average age on onset is 42.5 years. Nearly 1 million Indians die due to diabetes every year. In addition to the more common complications that arise as a result of this disease, diabetic patients who do not carefully control their blood glucose levels will be at high risk of systemic and oral complications. The mostcommon complications include macrovascular diseases,coronary artery,and cerebrovascular diseases. Additionally, microvascular complications manifest as diabetic retinopathy, neuropathy, andnephropathy among others.[2]

Corresponding Author:
Dr. Sreepreeti Champatyray
Assistant Professor, Department of Oral Pathology and Microbiology, Institute of Dental Sciences, Siksha 'O'Anusandhan (Deemed to be University), Bhubaneswar, Odisha, India
e-mail: sreepreetichampatyray@gmail.com

In terms of its oral consequences, diabetes manifests itself in several ways. When diabetes mellitus is left uncontrolled for an extended period, it affects salivary glands and which results in xerostomia or sialosis (dryness of mouth).[3-7] When not enough saliva is produced to wash and cleanse the oral cavity. This could be a factor in the increased risk for dental caries often observed in dental patients.[8,9] Furthermore, peridontitis is perhaps the most widely noted oral manifestation of diabetes mellitus. Several researches have advanced the notion that there is a bidirectional relationship between periodontitis and diabetesmellitus.[10,11] In this paper, we had a survey of one hundred individuals for oral hygiene awareness in diabetic patients.

Thus, the purpose of the current study was to: (1) assess the knowledge and awareness of diabetic patients of their risk for systemic and oral diseases as complications associated with diabetes, (2) to assess their attitudes toward sustaining good oral health through proper oral hygiene and regular dental check-ups, and (3) to the extent that they are aware, to determine how they became aware.

Method

In the current study, a self-administered questionnaire was used and utilized to assess the main aims of the study. The questionnaire questions were related to participants age and sex, type and duration of diabetes, and their awareness for systemic and oral diseases and other characteristics related to oral hygiene in diabetics patients. Various response formats were used in the questionnaire such as 'yes,' 'no,' 'I do not know,'encircling disease name, they were aware of as a complication of diabetes, or filling blank spaces.

Clinical findings in diabetic pts		
Age		
Gender		
Dryness in the mouth		
Delayed healing in extraction socket		
Bleeding gums		
Gingival recession		
Tooth mobility		
Generalized stain & calculus		
Periodontal pocket Depth of pocket >2mm, > 3mm		
Tooth Decay		
Bad breath		
Mouth ulcers		
Infections		
Brushing frequency Once a day Twice a day		

Figure 1. Questionnaire form for diabetics individuals

One hundred questionnaires were distributed to the diabetic patients attending the outpatient diabetic clinic in the department of Oral Pathology And Microbiology, IDS Eligible participants were confirmed diabetes mellitus patients. Data were collected over one year. However, questionnaires with uncompleted answers were excluded and a total of 100 completed questionnaires were entered on an Excel spreadsheet and imported into Statistical Package for Social Sciences (SPSS) version 13 (SPSS Inc.,Chicago, IL, USA) for data statistical analysis.

Results

The diabetic patients participating in the current survey were 90% nationals, of whom 59% were male and 39% were female. The mean of the age was 35 years. In our study we found both the type 1 and 2 diabetics, type 1 is 40%,type 2 is 58%. We also recorded delay extraction socket or delayed healing is 25%.

Mouth dryness/xerostomia is 67% of cases, bad breathe is 31% in cases related to periodontitis like periodontal pocket is 22%, bleeding gums is 52%,gingival recession is 52%,stain and calculus not having 53%. 46% don't have grade ll mobility whereas 30% have tooth mobility. 26% of individuals suffering from infection whereas in mouthulcer patients is 27%. Individuals suffering from dental caries are 32%. Patients are advised for brushing and flossing habits once or twice they are 43% and 49%.

Table 1: Represents Results of Diabetic Individual

Male	59%	
Female	39%	
Age	35 years and above	
Type 1	40%	
Type 2	58%	
No. of Visit	46%	
Delayed Healing	Y----26%	N----25%
Mouth Dryness/Xerostomia	Y-67%	N- 26%
Bleeding Gums	Y-52%	N----43%
Gingival Recession	Y---52%	N—50%
Stain And Calculus	Y---30%	N- 53%
Tooth Mobility	Y-30%	N-46%
Infection	Y-26%	N-33%
Mouth Ulcer	Y-27%	N-19%
Tooth Decay	Y-32%	N-31%
Bad Breathe	Y-31%	N-38%
Periodontal Pocket	Y-22%	N-25%
Brushing Frequency	Y-43%	N-59%
Flossing Frequency	Y-49%	N-13%
Do the PT Talk About Diabetic to Dentist?	Y-50%	N-47%

Discussion

The prevalence of diabetes worldwide has been increasing epidemically. It was declared by WHO that 366 million people are expected to suffer from diabetes mellitus by 2030. In the current study, more than half of the participants (58%) had Type 2 diabetes, 26% suffered from Type 1 and, unexpectedly, 16% of participants did not know what type of diabetes they had. The data presented in this study reveals an important finding: it demonstrates that diabetics have more knowledge

about their increased risk for systemic complications associated with diabetes than they do for oral and dental complications. The percentage of participants who were aware of their increased risk for eye disease was 85%, heart disease 75%, kidney diseases 90%, periodontal disease 60%, dental caries 54%, and oral fungal infections 42%.[12] Similar findings were reported by several researchers,who assessed the knowledge diabetic patients had of their risk for periodontal disease, their attitude toward oral health, and their oral health-related quality of life. The researchers found that only 33% of the participants were aware of their increased risk for periodontal disease.[13] Similarly, Eldarrat (14) found that diabetic patients' awareness of their increased risk for oral diseases was low compared to their awareness of systemic diseases and a significant association was found between glycemic control and oral infections. Furthermore, Moore et al.[15] assessed oral health attitudes, behaviors, and knowledge of participants with Type 1 diabetes and found that most of the participants were unaware of the oral health complications of diabetes mellitus and the need for preventive care.

It is well known that a significant reduction of salivary flow leading to xerostomia is the most common oral manifestation of diabetes. It is of paramount importance to inform and make diabetics aware of the beneficial properties of saliva. Saliva's function of washing and cleansing the oral cavity is known to prevent the accumulation of plaque and debris, which could be a contributing factor in diabetics' increased risk for periodontal disease and dental caries.[8,9] This study also revealed the additional important finding that diabetic patients have limited knowledge of the associations between oral health and overall health. Similar results were reported by several investigators who found that of 299 participants, only 29% brushed their teeth on a twice-daily basis.

The data of the present study showed that about 40%of the participants had not visited a dental clinic within the last year. The main reason to visit a dental clinic within the last year was to receive treatment for pain and/or discomfort. Only 14% visited for regular check-ups. Early detection and treatment of tooth caries, periodontal disease, and other oral diseases would be of enormous benefit to protect diabetic patients from the harmful oral complications associated with diabetes. Furthermore, it is necessary for dental professionals and related government agencies to promote awareness of the relationship between diabetes and oral health to prevent harmful dental complications and expensive treatment.

Conclusion

Within the limitations of the current study, the data presented in this study demonstrated that diabetics have more knowledge about their increased risk for systemic complications associated with diabetes than they do for oral and dental complications. For promoting proper oral health and to reduce the risk of oral diseases,health professionals in both the dental and medical fields need to take the responsibility to develop programs to educate the public about the oral manifestations of diabetes and its complications on oral health.

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