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KNOWLEDGE, AWARENESS AND ATTITUDE OF DIABETIC PATIENTS TOWARDS THE ORAL FACETS ALLIED TO DIABETES MELLITUS: A SURVEY BASED STUDY

Dentistry

Seena Thomas* Postgraduate Student, Department of Periodontology, Rajarajeswari Dental College And Hospital, No.14, Ramohalli Cross, Mysore Road, Kumbalgodu, Bengaluru, Karnataka, 560074. *Corresponding Author

Anuroopa. P Professor, Drepartment of Periodontology, Rajarajeswari Dental College And Hospital, No.14, Ramohalli Cross, Mysore Road, Kumbalgodu, Bengaluru, Karnataka 560074.

ABSTRACT

BACKGROUND: Diabetes Mellitus has become a global epidemic, the complications of which have a significant impact on the quality of life and longevity of the sufferers. Oral diseases associated with diabetes mellitus include salivary dysfunction, taste dysfunction, fungal infection, bacterial infections, poor oral wound healing, oral mucosal disease, and neuro-sensory oral disorder.Therefore, the aim of this study is to assess the knowledge, awarenesss and attitude of diabetic patients towards the oral facets allied to type II diabetes mellitus.

METHODOLOGY: The cross-sectional questionnaire study was was administered to 100 type II diabetic patients of which 60 were males and 40 females from inpatient and outpatient department of General Medicine, Rajarjeswari Medical College and Hospital, Bangalore. Clinical examination was done using The Community Periodontal Index of Treatment Needs (CPITN index).

RESULTS: Out of 100 subjects, 60 were males and 40 females. As per the data, only 4.4% were aware that poor oral health is associated with diabetes The knowledge about the extra care that diabetic patients should take with their oral hygiene was also not adequate. Clinical examination revealed a scoring of 3 and 4 indicating poor oral health.

KEYWORDS

diabetes mellitus, oral facets, oral health, oral hygiene.

INTRODUCTION

Diabetes Mellitus has become a global epidemic, the complications of which have a significant impact on the quality of life and longevity of the sufferers. It is a chronic metabolic disease characterized by hyperglycemia due to either a deficiency of insulin secretion or resistance to the action of insulin or both. 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 million by the year 2030.[1] The prevalence and the chance of developing oral mucosal lesions were found to be dominant in patients with diabetes[2]. Oral diseases associated with diabetes mellitus include salivary dysfunction, taste dysfunction, fungal infection, bacterial infections, poor oral wound healing, oral mucosal disease, and neuro-sensory oral disorder.[3]

Many studies have proved a bidirectional adverse relationship between diabetes and periodontal disease; diabetes can aggravate periodontitis, and periodontitis can negatively affect control of diabetes.[4] The mechanisms that underpin the links between these two conditions are not completely understood, but involve aspects of immune functioning, neutrophil activity, and cytokine biology.[5]There have been studies that show an improvement in both clinical and immunological parameters of periodontitis and glycemic control in long-term diabetes after treatment of periodontal disease.[6]

Absolute understanding and cognizance of the pathophysiology, manifestations, and management of different types of oral infection related to diabetes by the dental professional is essential to optimize the care of diabetic patients. Therefore it was utmost important to assess diabetic patients' oral health behaviors. Hence this study aims to assess the knowledge, awareness and attitude of diabetic patients towards the oral facets allied to type II diabetes mellitus.

METHODOLOGY

This cross-sectional questionnaire study was carried out in the month of July- August 2021. The protocol comprised of a questionnaire prepared in both English and vernacular language, followed by clinical examination of the subjects. A structured, closed-ended questionnaire was prepared for evaluating the main aim of the study. The questionnaire was administered to 100 type II diabetic patients of which 60 were males and 40 females, belonging to age group of 45-75 years, from inpatient and outpatient department of General Medicine, Rajarjeswari Medical College and Hospital, Bangalore. Prior permission was obtained from concerned authorities for conducting the study. An informed consent was obtained from all subjects who were willing to attend the study. Clinical examination was done using The Community Periodontal Index of Treatment Needs (CPITN index). Inclusion criteria were willingness to participate in the study and patients with minimum 5 years of type II diabetes mellitus.

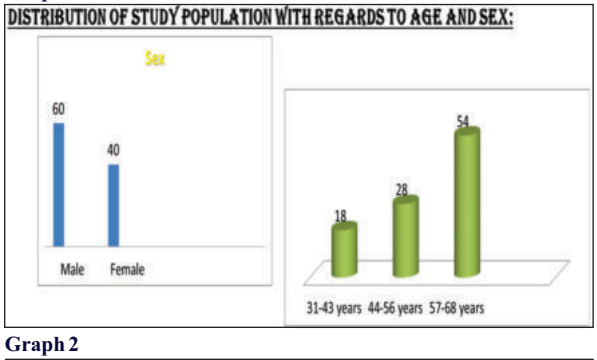
Questionnaire

The questionnaire engrossed on oral health practice among the diabetic individuals like dental visits, brushing frequency, flossing frequency, added smoking habit, rating the condition of mouth and teeth, awareness about effects of diabetes on oral health.

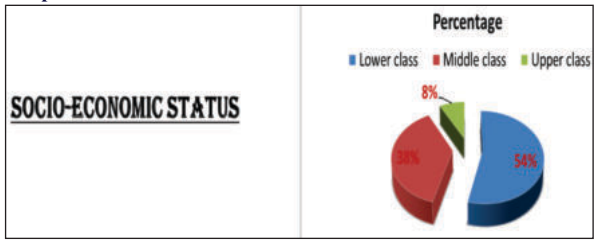
RESULTS

A total of 100 subjects were enrolled in the study among which 60 were males and 40 females. Demographic assessment of the subjects showed 18 individuals belonging to the age group of 31-43 years, 28 individuals under age group of 44-56 years, 54 individuals more than 56 years old. Graph 1 depicts distribution of study population with regards to gender and age. 54% of the study population belonged to lower class, and 38% and 8% belonged respectively to middle and upper class socio-economic status (Graph 2).

Graph 1

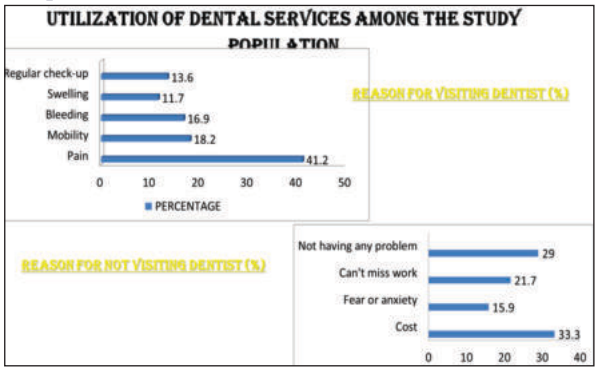


Graph 2



As per the data, 46.8% of the study population had a family history of diabetes and 56.2% regularly visited physicians. 72% reported with adverse habits with a prevalence of smoking (35%). Only 22.70% brushed twice daily and 84.1% used tooth pick as inter-dental aid.Graph 3 represents the utilization of dental services among the study population.

Graph 3



Regarding questions on knowledge and awareness about effect of DM on systemic and oral tissues and its complications, only 4.4% were aware that poor oral health is associated with diabetes. The knowledge about the extra care that diabetic patients should take with their oral hygiene was also not adequate. Also only 0.9% of the study population followed the regular visit to the dentist. This was reflected in the clinical examination done using CPITN index, which revealed a scoring of 3 and 4 indicating poor oral health.

DISCUSSION

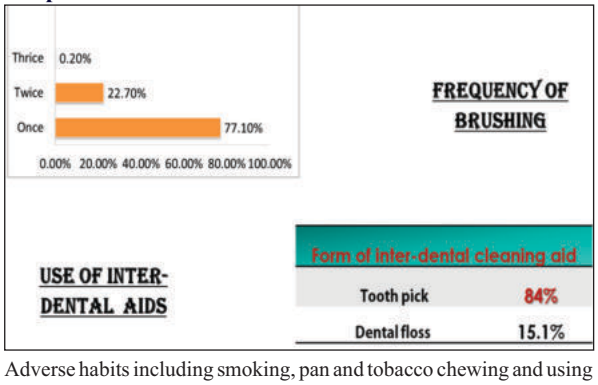
Oral cavity can function as an "early warning" system for some diseases. The early identification of oral disease may contribute to the early diagnosis of diabetes. Diabetes is considered as a sixth complication for impaired oral health.[7] To advocate proper oral health behaviors which will control oral complications, education of diabetic patients is very important. In the present study, it was found that 78% of the study population lacked knowledge regarding the relationship between diabetes and oral health. Studies conducted by Mirza KM et al in the year 2007[8] and Fatin Awartani et al in the year 2009[9] also showed similar results.

A study conducted by Fenwick et. al,[10] showed that age, education level, and employment status affect knowledge and awareness which had reflected in our study also. Age is delineated as an aggravating factor for oral health. Oral health complications like increase in susceptibility to bacterial infection, reduced blood supply to the gingiva, a dry mouth, and reduced saliva flow, causing tooth decay and plaque build-up were more prevalent as age progresses.

Assessment of Community Periodontal Index of treatment need revealed a score of 3 and 4 categories which showed poor oral health and immediate requirement of treatment. Only 13.6% regularly visited dentists and the main reason for the visit was pain (41.2%).

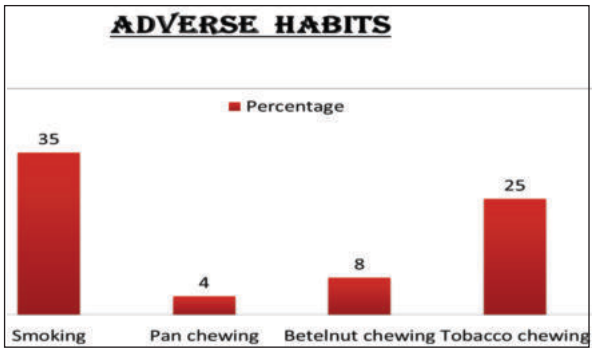
Assessment of self care, prevention of oral diseases revealed that 77.1% subjects had poor compliance with oral hygiene behaviours and only 23% reported brushing twice a day (Graph 4). In addition, usage of inter-dental aids like tooth pick, dental floss appeared to be least important (21%). This clearly reveals that the oral health awareness and practices among the study population are poor and need to be improved.

Graph 4



Adverse habits including smoking, pan and tobacco chewing and using betel nut are considered to be risk factors affecting oral health in both healthy people and diabetics. In our study 72% of the subjects have reported those adverse habits mentioned with a prevalence for smoking (Graph 5).

Graph 5



Financial constraints and accessibility were found to be the reason for not visiting the dentist. Socio-economic status of the population holds a major role in this study. Majority of the study population belonged to the lower class and were not well educated. Few of the subjects who were educated showed better awareness on the relationship between diabetes and oral health. However they were not fully aware about the facility.

Diabetics have serious and irreversible effect on most of the oral tissues and most of the participants in our assessment were not well aware of this fact. Education of diabetic patients on oral health and oral diseases is important for the prevention of early tooth loss. 49.4% of the diabetics reported of bleeding gums during tooth brushing. And 37.8% experienced tooth loss after the onset of diabetes. Uncontrolled glycemic level aggravates these oral facets and also this imparted the risk of serious periodontal disease of the subjects. Our study reveals that less than one third of study population was aware that gum diseases make it harder to control glycemic level in diabetics. This was also in accordance with a study conducted by Maha A Bhammam et al, 2015.[11]

A short counseling was carried out for each individual at the end of the survey regarding oral complications of DM and importance of periodic dental check-ups. 54.9% of the study population was willing to take education about oral health and diabetes.

CONCLUSION

This study provides many useful and practical insights concerning the factors influencing awareness of the association between diabetes and oral health among diabetic patients. In spite of various research conducted throughout the years the result appeared to be almost the same suggesting that the population is still unaware about the oral health and the practices that should be maintained specially in case of diabetic patients. 54.1% of the study population was willing to take education about oral health and diabetes. Medical professionals involved in diabetic care should play a more active role in promoting oral health among their patients. Health professionals in both dental and medical fields need to develop camps to educate the public about systemic and oral manifestations of diabetes and its complications. Regular dental visits provide opportunity for educating the patients, provision of professional care in prevention, diagnosis it initial stages and treatment of oral diseases.

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REFERENCES

1) Eldarrat AH. Diabetic patients: their knowledge and perception of oral health. Libyan J Med 2011; 6(1):1-5
2) Lamster IB, Lalla E, Borgnakke WS, Taylor GW. The relationship between oral health and diabetes mellitus. The Journal of the American Dental Association. 2008 Oct 1;139:19S-24S.
3) Awatif Y, Al-Maskari, Masoud Y, Al-Maskari, AlSudairy S. Oral Manifestations and Complications of Diabetes Mellitus. Sultan Qaboos University Medical Journal. 2011 May; 11(2): 179–86.
4) Mealey B L, Ocampo G L. Diabetes mellitus and periodontal disease. Periodontol 2000 2007; 44: 127–153
5) Preshaw PM, Alba AL, Herrera D, Jepsen S, Konstantinidis A & Makrilakis K & Taylor R. Periodontitis and diabetes: a two-way relationship-A review. Diabetologia 2012; 55:21–31
6) Bascones-Martinez A, Munoz-Corcuera M, Bascones-Ilundain J. Diabetes and periodontitis: A bidirectional relationship. Medicina Clínica (English Edition). 2015 Jul 6;145(1):31-5.
7) Akyuz S, Yarat A, Bayer H, Ipbuker A. Diabetic patient's knowledge level on oral health and habits (questionnaire). Oral Health Dent Manag Black Sea Countries. 2004

Sep;3:11-4.
8) Mirza KM, Khan A, Ali MM, Chaudhry S. Oral health knowledge, attitude, and practices and sources of information for diabetic patients in Lahore, Pakistan. Diabetes Care 2007; 30:3046-3047.
9) Awartani F. Oral health knowledge and practices in Saudi diabetic female patients. Pakistan Oral & Dental Journal. 2009 Jun;29(1):149-52.
10) Fenwick EK, Xie J, Rees G, Finger RP, Lamoureux EL. Factors associated with knowledge of diabetes in patients with type 2 diabetes using the diabetes knowledge test validated with Rasch analysis. Public Library Of Science One. 2013 Dec 3;8(12):e80593.
11) Bahammam MA. Periodontal health and diabetes awareness among Saudi diabetes patients. Patient preference and adherence. 2015;9:225.