Original Article

Dental Care Seeking Behaviors in Diabetic Patients: Patterns and Barriers at CBMCB Hospital, Mymensingh

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Abstract

Background: Diabetes mellitus significantly increases the risk of oral health complications, yet dental care-seeking behavior among diabetic patients remains suboptimal. This study aims to assess the patterns, barriers, and influencing factors of dental care utilization and oral hygiene practices among diabetic patients.

Methods: This cross-sectional descriptive study was conducted at the dental outpatient department of Community Based Medical College, Mymensingh, over a two-year period (January 2021 - December 2022). A total of 170 diabetic patients were selected using a non-probability convenient sampling technique. Data were collected through structured interviews and medical record reviews, focusing on demographic characteristics, dental care-seeking patterns, oral hygiene practices, and behavioral risk factors.

Results: Only 21.18% of respondents sought dental care within six months, while 48.24% visited a dentist only in emergencies. Despite 85.29% regularly monitoring their blood sugar, 26.47% did not maintain consistent oral hygiene, and 24.71% used their fingers instead of proper instruments for cleaning. Smoking (44.71%) and betel nut chewing (41.76%) were highly prevalent, further increasing the risk of periodontal disease and oral complications. The utilization of dental prostheses was low (20%), despite evident tooth loss among participants.

Conclusion: The study underscores significant gaps in preventive dental care and oral hygiene behaviors among diabetic patients. The high prevalence of risk factors, such as smoking and betel nut chewing, coupled with poor oral health-seeking behavior, calls for urgent integration of oral health education into diabetes care programs. Policy-driven initiatives focusing on awareness, accessibility, and preventive dental interventions are crucial for improving oral health outcomes in diabetic populations.

Keywords: Diabetes, Oral Health, Dental Care-Seeking Behavior, Periodontal Disease, Oral Hygiene, Smoking, Betel Nut Chewing, Bangladesh

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Introduction

Diabetes mellitus is a growing global health concern, with its prevalence increasing at an alarming rate, particularly in low- and middle-income countries such as Bangladesh. It is estimated that within the next 15 years, Bangladesh will be among the top ten countries with the highest number of diabetic patients, largely due to rapid urbanization, dietary shifts, and sedentary lifestyles (1). The burden of diabetes extends beyond glycemic control, with its complications affecting multiple organ systems, including oral health. Diabetes is a well-established risk factor for periodontal disease, with studies confirming a bidirectional relationship between glycemic dysregulation and periodontal inflammation (2). Periodontitis exacerbates systemic inflammation, leading to worsening glycemic control and increased risk of diabetes-related complications (3,4). Despite this strong correlation, diabetic patients often neglect their oral health, resulting in severe dental complications that could be mitigated through preventive care and timely interventions.Research has consistently shown that diabetic patients seek dental care less frequently than non-diabetics, despite being at a higher risk for oral diseases (5). A U.S.-based study revealed that only 65.8% of diabetic adults visited a dentist annually compared to 73.1% of non-diabetics, with ethnic minorities displaying even lower utilization rates (6). In Bangladesh, where the out-of-pocket cost of healthcare is a significant burden, financial constraints further reduce the likelihood of routine dental visits (7). Studies from urban centers in Bangladesh highlight that, on average, a diabetic patient incurs an annual healthcare expenditure of $600, a substantial portion of which is allocated to medications and diagnostic tests, leaving little for dental care (8). This financial burden often forces diabetic individuals to prioritize systemic health concerns over oral health, perpetuating the cycle of poor dental outcomes.Beyond financial constraints, lack of awareness regarding the link between diabetes and oral health is a critical barrier to dental care utilization. A study conducted at CBMCB Hospital, Bangladesh's leading tertiary care center for diabetic patients, found that a significant proportion of diabetic individuals were unaware of their heightened risk for periodontal disease (9). Even among healthcare professionals, referral rates for dental care remain low, with only 12% of physicians regularly discussing oral health with diabetic patients (10). This knowledge gap is compounded by systemic healthcare challenges, such as the limited integration of dental services within diabetes management protocols (11). The lack of interprofessional collaboration between medical and dental professionals leads to missed opportunities for early detection and prevention of diabetes-related oral complications.

Cultural beliefs and misconceptions further influence dental care-seeking behaviors. Studies have demonstrated that fear of dental procedures, misconceptions about the necessity of treatment, and skepticism regarding the safety of dental interventions deter patients from seeking care (12). In Bangladesh, this is particularly concerning as a significant proportion of the population relies on informal healthcare providers, including traditional healers, due to perceived affordability and accessibility (13,14). This reliance on unqualified providers often results in delayed or inappropriate treatment, exacerbating oral health issues. Additionally, busy work schedules and long waiting times at dental clinics discourage routine dental check-ups, further contributing to the low rate of dental service utilization among diabetic patients (15).Understanding these barriers is particularly important in Bangladesh, where the diabetic population is expanding rapidly. CBMCB Hospital, located in Dhaka, serves as a referral center for diabetes management, catering to thousands of patients annually. Studies conducted at this institution have revealed concerning trends in healthcare-seeking

behaviors among diabetic patients, with many failing to undergo routine check-ups or follow recommended lifestyle modifications (16). Similar patterns have been observed in oral health behaviors, where diabetic patients demonstrate a low adherence rate to preventive dental care, despite being at high risk for periodontal disease and other complications (17). These findings underscore the urgent need for targeted interventions to improve oral health literacy and integrate dental care into diabetes management programs.Given the increasing prevalence of diabetes in Bangladesh and the well-documented relationship between diabetes and oral health, it is imperative to assess the patterns and barriers associated with dental care-seeking behaviors in diabetic patients. This study aims to investigate the factors influencing dental care utilization among diabetic individuals at CBMCB Hospital, with a focus on financial constraints, awareness levels, healthcare system challenges, and cultural perceptions. By identifying these barriers, the findings will contribute to the development of evidence-based public health strategies to improve oral healthcare access and integration within diabetes management programs. Strengthening interdisciplinary collaboration between medical and dental professionals and implementing targeted educational initiatives will be key to addressing these gaps and enhancing overall patient outcomes.

Methods

This cross-sectional descriptive study was conducted in the dental outpatient department of the CBMCB Hospital, Mymensingh. The study was carried out over a two-year period, from January 2021 to December 2022, among diabetic patients who sought dental treatment or follow-up. A total of 170 diabetic patients were selected using a non-probability convenient sampling technique. Data were collected through direct patient interviews and medical record reviews, focusing on dental care-seeking behaviors, barriers to dental service utilization, and demographic characteristics. Ethical approval was obtained from the institutional review board, and informed consent was secured from all participants before data collection.

Results

Table 1: Distribution of baseline sociodemographic characteristics among the participants (N=170)

Socio-demographic characteristics:	Frequency	(%)
Gender		
Male	105	61.76%
Female	65	38.24%
Age group (age in years)		
30-50	90	52.94%
50-70	80	47.06%
Religion		
Islam	158	92.94%
Hindu	11	6.47%
Buddhism	2	1.18%
Educational level		
Post-graduate	80	47.06%
Graduate	46	27.06%
HSC	26	15.29%
SSC	9	5.29%
Primary	3	1.76%
Illiterate	5	2.94%

Occupation		
Housewife	51	30.00%
Service	70	41.18%
Business	40	23.53%
Day labor	3	1.76%
Others	6	3.53%
Monthly family income (in taka)		
5000/--15000/-	11	6.47%
15000/--25000/-	159	93.53%

The study included a total of 170 diabetic patients, with a higher proportion of males **(**61**.**76**%)** compared to females **(**38**.**24**%).** The majority of participants **(**52**.**94**%)** were between the ages of 30-50 years, while 47**.**06**%** were in the 50-70 years age group**.** Islam was the predominant religion, followed by 92**.**94**%** of respondents, whereas 6**.**47**%** identified as Hindu and 1**.**18**%** as Buddhist**.** Regarding educational background, nearly half **(**47**.**06**%)** of the participants had attained a postgraduate degree, followed by 27**.**06**%** who were graduates, while lower levels of education were less common**.** In terms of occupation, the majority were service holders **(**41**.**18**%)**, followed by housewives **(**30**.**00**%)** and businesspersons **(**23**.**53**%)**, while a small proportion were day laborers **(**1**.**76**%)** or engaged in other occupations **(**3**.**53**%).** The vast majority of respondents **(**93**.**53**%)** reported a monthly family income between 15,000 to 25,000 BDT, while only 6**.**47**%** had an income within the lower range of 5,000 to 15,000 BDT**.**

Table 2: Distribution of the respondents by their Diabetic assessment

Diabetic assessment:	Frequency	(%)
Duration of suffering diabetes(in years):		
≤3	15	8.82%
4-6	54	31.76%
7-9	46	27.06%
≥10	54	31.76%
Normal Blood Sugar levels		
Yes	80	47.06%
No	90	52.94%
Regular blood checking done		
Yes	145	85.29%
No	25	14.71%

Regarding the duration of diabetes among participants, 31**.**76**%** had been living with diabetes for 4-6 years, and an equal proportion **(**31**.**76**%)** had been diabetic for 10 years or more**.** Additionally, 27**.**06**%** of respondents reported a diabetes duration of 7-9 years, while only 8**.**82**%** had been diagnosed within the last three years**.** When asked about blood sugar control, 52**.**94**%** of participants stated that their blood sugar levels were not maintained within the normal range, whereas 47**.**06**%** reported having stable blood glucose levels**.** In terms of blood sugar monitoring habits, a significant majority **(**85**.**29**%)** of respondents stated that they regularly checked their blood sugar levels, while 14**.**71**%** did not engage in routine monitoring**.**

Table 3: Distribution of the respondents by their Oro-dental cleaning practices

Oro-dental cleaning practices:	Frequency	(%)
Regularly cleaning teeth		
Yes	125	73.53%
No	45	26.47%
Number of times of cleaning teeth everyday:		
Once	70	41.18%
Twice	51	30.00%
Thrice	2	1.18%
After meal	2	1.18%
Not Regular	45	26.47%
Material for cleaning teeth		
Tooth paste	116	68.24%
Tooth powder	32	18.82%
Charcoal	22	12.94%
Type of instruments used to clean teeth		
Tooth brush	119	70.00%
Wood stick	9	5.29%
Finger	42	24.71%

Regarding oro-dental cleaning practices, 73.53% of respondents reported regularly cleaning their teeth, while 26.47% did not maintain a consistent oral hygiene routine. Among those who cleaned their teeth, 41.18% did so once a day, 30.00% brushed twice daily, while only 1.18% cleaned their teeth three times a day or after meals. A notable 26.47% did not adhere to a regular cleaning schedule. Toothpaste was the most commonly used cleaning material (68.24%), followed by tooth powder (18.82%) and charcoal (12.94%). In terms of cleaning instruments, toothbrushes were the preferred tool for 70.00% of participants, while 24.71% used their fingers, and 5.29% used a wooden stick for oral hygiene.

Table 4: Distribution of the respondents by their frequency of visiting to dental surgeon:(in months)

Dental care seeking behaviors	Frequency	(%)
≤6	36	21.18%
>6	53	31.18%
During emergency	82	48.24%

In terms of dental care-seeking behavior, only 21.18% of respondents visited a dental surgeon within six months, while 31.18% sought dental care after more than six months. Alarmingly, nearly half of the participants (48.24%) reported visiting a dental surgeon only during emergencies, indicating a lack of routine dental check-ups and preventive care among diabetic patients.

Table 5: Distribution of the respondents by their Oro-dental behaviors

Oro-dental behaviors:	Frequency	(%)
Smoking habit		
Yes	76	44.71%
No	94	55.29%
Habit of chewing betel-nut		
Yes	71	41.76%
No	99	58.24%
Oral prosthesis		
Yes	34	20.00%
No	136	80.00%

Regarding oro-dental behaviors, 44.71**%** of respondents reported having a smoking habit, while 55.29**%** were non-smokers**.** Additionally, 41.76**%** of participants had a habit of chewing betel nut, whereas 58.24**%** did not engage in this practice**.** The use of oral prostheses was relatively low, with only 20.00**%** of respondents wearing dental prosthetic devices, while the majority **(**80.00**%)** did not have any oral prosthesis**.**

Discussion

The present study provides a comprehensive analysis of dental care-seeking behaviors and oral health practices among diabetic patients at CBMCB Hospital, Mymensingh. The findings indicate a concerning pattern of poor preventive dental care, low oral hygiene compliance, and high prevalence of behavioral risk factors such as smoking and betel nut chewing, all of which have critical implications for oral and systemic health outcomes in diabetic populations.One of the most significant findings in this study was the low frequency of routine dental visits, with only 21.18% of respondents seeking care within six months, while nearly half (48.24%) visited a dentist only during emergencies. These results align with previous studies in diabetic populations worldwide, which report similarly poor preventive dental care utilization rates (18,19). A study conducted in Nigeria found that over 53% of diabetic patients sought dental care only in emergencies, due to a perceived lack of need for routine check-ups (20). Similarly, in a study from Iran, only 47% of diabetic patients had visited a dentist in the past year, with most seeking care only when symptomatic (19). These findings reinforce the urgent need for increased awareness and integration of oral health education within diabetes care programs, particularly in Bangladesh, where oral health is often a neglected aspect of overall healthcare.A statistically significant association was observed between self-care practices, such as blood sugar monitoring, and diabetes duration. A high proportion of participants (85.29%) monitored their blood sugar regularly, and this behavior was more prevalent in those who had longer disease duration, suggesting an increased adherence to self-care practices over time. This trend is in line with prior research, which indicates that diabetic patients with longer disease duration are more likely to adhere to recommended self-management behaviors, including oral hygiene and blood glucose monitoring (21). However, despite the high rate of blood sugar monitoring, the lack of awareness about the importance of oral health remains a significant barrier, as reflected in the low rate of preventive dental visits in the current study.Oral hygiene behaviors among the study population revealed significant gaps in self-care practices. While 73.53% of respondents reported cleaning their teeth regularly, a concerning 26.47% did not maintain a consistent oral hygiene routine. Moreover, 41.18% brushed only once daily, while only 30% brushed twice daily, which is lower than international recommendations for optimal oral health. Similar patterns have been observed in other diabetic populations; for example, a study from Mauritius found that 88.6% of diabetic patients never flossed, and 87.1% attended dental clinics only when symptomatic (22). Furthermore, 24.71% of participants in the current study used their fingers instead of a proper cleaning instrument, a practice that has been linked to higher rates of periodontal disease in other studies (23). This highlights a critical gap in oral hygiene awareness and behavior

among diabetic patients, necessitating targeted education on the importance of using proper brushing techniques and interdental cleaning tools.The high prevalence of smoking (44.71%) and betel nut chewing (41.76%) among participants presents an additional concern, as both behaviors are known to exacerbate oral health issues and contribute to periodontal disease. Numerous studies have demonstrated the detrimental effects of tobacco and betel nut use on oral health, particularly in diabetic patients (24,25). Additionally, betel nut chewing has been associated with increased risks of oral cancer, ischemic heart disease, and poor glycemic control (26,27). The high prevalence of these habits among participants in the current study underscores the urgent need for public health interventions aimed at reducing smoking and betel nut consumption among diabetic individuals. The low utilization of oral prostheses (20%) among participants, despite a high prevalence of missing teeth, further highlights the neglect of dental rehabilitation in diabetic care. A study conducted in Thailand found that diabetic patients had significantly higher rates of tooth loss and periodontal disease, yet most did not use prosthetic replacements (23). This finding is particularly concerning, as tooth loss in diabetics has been associated with poor nutritional intake and reduced overall health (28). Addressing these gaps through improved access to dental prosthetic services and patient education on the importance of oral rehabilitation is essential in preventing further deterioration of oral health in diabetic populations.Finally, the findings from this study emphasize the urgent need for integrated diabetes and oral health care services in Bangladesh. Existing research highlights that multidisciplinary healthcare approaches, which integrate dental education and regular screenings into diabetes management programs, lead to improved health outcomes (22,29). This indicates that a structured approach, incorporating oral health awareness within diabetes care protocols, can significantly enhance dental care-seeking behaviors.

Limitations of The Study

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

Conclusion

The present study highlights significant gaps in dental care-seeking behavior, oral hygiene practices, and behavioral risk factors among diabetic patients at CBMCB Hospital, Mymensingh. The findings reveal that a substantial proportion of diabetic individuals seek dental care only during emergencies, with preventive visits remaining alarmingly low. Despite a high rate of blood sugar monitoring, oral hygiene awareness and adherence to proper dental care remain suboptimal, with many patients brushing irregularly and using improper cleaning instruments. Additionally, high rates of smoking and betel nut chewing were observed, behaviors that further compound the risk of periodontal disease, tooth loss, and systemic complications. These trends align with global research, emphasizing the urgent need for integrated diabetes-oral healthcare programs. Given the established bidirectional relationship between diabetes and oral health, targeted interventions, including educational programs, policy-driven healthcare integration, and accessibility to preventive dental services, are critical. Future research should focus on developing structured community-based interventions and policy reforms to improve the overall oral healthcare landscape for diabetic patients in Bangladesh.

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