Research Article

Exploring the Causes of Nonattendance at Follow-Up Visits in Diabetes Mellitus Cases

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Abstract

Background: Diabetes mellitus is said to be an emerging health epidemic, especially within the developed world, that cannot be treated without lifelong medical supervision through clinical reviews. Failure by patients to observe these appointments greatly hinders the management of diabetes due to a number of socioeconomic, psychological, and systemic factors.

Objective: This paper focuses on identifying factors associated with nonadherence to follow-up visits of diabetes patients attending Basundhara Ad-Din Medical College Hospital in Dhaka, Bangladesh.

Methods: A cross-sectional self-administered questionnaire survey was carried out between January 2023 and January 2024, using a systematic random sampling technique targeting 100 diagnosed diabetes patients. The Questionnaire data collection aimed at socio-demographic and clinical characteristics, history of follow-up appointments attendance, perceived barriers to follow-up medical attendance, and patients' perceptions around the issue. In the study, ethical clearance was sought and obtained while informed consent was received from the participants.

Results: The findings revealed that 80% of participants missed follow-up visits, with key reasons including lack of time (35%), insufficient awareness about follow-up importance (18%), long wait times (15%), and financial constraints (13%). Although 59% felt their concerns were adequately addressed by healthcare providers, only 10% utilized telehealth services, indicating limited access to alternative care options.

Conclusion: This study highlights key gaps in diabetes care in Bangladesh and emphasizes patient-focused solutions. Proposed improvements include better patient education, enhanced healthcare facilities, and expanded telemedicine options. These changes aim to improve diabetes treatment, control, and patient involvement.

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Introduction

Diabetes mellitus is multifaceted and acts as a growing global health issue, which is described by metabolic disorders and long-term health consequences [1]. Diabetes is a long-term metabolic disease that directly impacts millions of people globally, and due to a lack of appropriate medical control, it could land the patient in a critical situation [2]. The

single most critical dimension of diabetes self-management is the medical follow-up visit, in which patients' advancements and reversals are evaluated and new treatment plans and risk prevention procedures are discussed and implemented [3]. Despite the philosophy that patients should attend their doctor's appointment for the maintenance of their health, no-showing has become a major challenge towards effective diabetes care [4]. Such a continuous issue hinders the probability of achieving the best possible management of diseases, ultimately elevating the likelihood of dangerous overall medical consequences. The multiple reasons for the lack of compliance with follow-up appointments include a broad range of economic, psychological, and organizational factors in patient care. The present study therefore aims to explore in detail all the diverse aspects contributing to patient no-shows in follow-up care for diabetes at Basundhara Ad-Din Medical College Hospital, located in Hasnabad, South Keranigonj, Dhaka, Bangladesh. Despite the relevant literature suggesting that patient behavior is the root cause for discontinuity in medical care of diabetes patients, particularly in developing countries, this research endeavors to give a systematic screening of the demographic, clinical, and perceptual frames of diabetes patient behavior [5]. Diabetes is best managed not only through medications but also through other required approaches; follow-up visits are critical in the management [6]. These visits ensure comprehensiveness of disease surveillance, evaluation of ongoing treatment, and identification of possible complications. They also offer chances of fine-tuning the therapy administered based on the patient's condition to orchestrate get the best results. Further, follow-ups are opportunities through which patients are educated on their conditions and empowered to manage their conditions [7]. Thirdly, they provide some type of counseling services dealing with psychological blocks, encouraging patients, and providing them with positivity Since. Diabetes is increasingly becoming a global health issue, and in the developing world, such as Bangladesh, the epidemiological shift is exponential in Bangladesh too [8]. According to the World Health Organization, about 463 million adults have diabetes globally, and this figure projected to increase to 700 million by 2045 [9]. The studies on healthcare engagement also became more crucial in Bangladesh, it is being clearer that percentage of people with diabetes is growing very rapidly. Previous research has found that many factors hindered the continuity of follow-up medical appointments, such as economic challenges that put off the costs of health care, restricted access to health care services, as well as cultural and educational problems that influence the patient's behavior to seek care [10]. Lack of disease knowledge is usually accompanied by weak ability to identify the need for consistent checks; besides, psychological state, including, but not limited to, fear or denial, can hamper one's desire to do so as well [11]. Moreover, such limitations within the traditional institutional framework of delivering health care, including lack of adequate resources or inefficient ones are compounded by systemic challenges, further the aforementioned factors pointing to the increased difficulty of providing consistent follow-up care. This research procedural approach used survey research to gather detailed information from 100 diabetic patients. In analyzing socio-demographic information and clinical and self-reported patient data, our hope is to identify individual characteristics that specify behavior regarding follow-up visits [12]. Beyond resources of academics, it is important to stress the relevance of this study because the definition of the particular obstacles can enhance the healthcare outcomes tremendously. The framework allows identifying the needs for specific interventions and creating more of customized approaches for patients' treatment. Besides, future research results can help identify the necessary improvements in the responsiveness of the health care system, which will make services improved and more available. In doing so, efforts like these can fine-tune diabetes care, thereby lowering downstream metabolic consequences of the disease and enhancing patient well-being and survival [13]. It is significant to comprehend the general practice of patients' behaviors and several barriers regarding the system while creating treatment plans for every nation. Such research indicates an important progress toward enhancing practices for managing diabetes patients that would consequently lead to improved patient status and decreased costs of health care services.

Methods

Study Design and Population

A cross-sectional survey was conducted at Basundhara Ad-Din Medical College Hospital, Dhaka, Bangladesh, from January 2023 to January 2024. The study included 100 diabetes patients selected through systematic random sampling.

Data Collection Instruments

A structured questionnaire was developed to collect:

- Socio-demographic information

- Clinical profile details

- Follow-up visit attendance history

- Barriers to medical follow-up

- Healthcare service perception

Ethical Considerations

The research protocol was approved by the institutional ethics committee. Informed consent was obtained from all participants, ensuring voluntary participation and data confidentiality.

Data Analysis

This study used two methods to analyze the data thoroughly. Desktop calculations, including descriptive statistics, percentages, and frequencies, will summarize and present the data. Analyzing categorical data will help identify patterns and trends, while thematic analysis of qualitative responses will uncover common attitudes, beliefs, and deeper insights.

Results

The study revealed a diverse patient population with notable demographic characteristics. The majority of patients (34%) were aged between 46 and 60 years, and there was a slight female predominance (55%) compared to males (45%). In terms of employment, housewives constituted the largest group (47%), followed by employed individuals (32%). Educational attainment varied, with most patients having completed secondary education (SSC, 37%), while 20% had no formal education. Household income was predominantly concentrated in the range between 25,000 and 50,000 BDT, encompassing 43% of the participants. These demographics provide valuable context for understanding the study population.

The clinical profile of the study participants highlighted key characteristics relevant to diabetes management. The majority (87%) were diagnosed with Type-2 diabetes, reflecting its prevalence among the group. The duration of diagnosis varied, with 30% having been diagnosed for 1-5 years and 28% living with the condition for over 10 years. Regarding treatment, an overwhelming majority (95%) relied on insulin injections, underscoring the intensive management required for most patients in the study. These clinical insights provide a deeper understanding of the population's healthcare needs and challenges in table-2.

Table 1: Socio-demographic profile among the study cases (N=100)

Variable	Frequency	Percentage
Age in Years		
Under 18	5	5%
18-30	10	10%
31-45	26	26%
46-60	34	34%
Over 60	25	25%
Gender		
Male	45	45%
Female	55	55%
Employment Status		
Employed	32	32%
House Wife	47	47%
Unemployed	11	11%
Student	7	7%
Other (Business)	3	3%
Education Level		
Illiterate	20	20%
SSC	37	37%
HSC	20	20%
Bachelor's degree	17	17%
Graduate or professional degree	6	6%
Marital Status		
Unmarried	11	11%
Married	89	89%
Household Income		
Less than 25000	37	37%
25000-50000	43	43%
50001-75000	12	12%
75001-100000	4	4%
Over 100000	4	4%

Table 2: Clinical profile among the study cases (N=100)

Variable	Frequency	Percentage
Type of Diabetes		
Type-1	11	11%
Type-2	87	87%
Gestational	2	2%
Duration of Diabetes Diagnosis		
Less than 1 year	18	18%
1-5 years	30	30%
6-10 years	24	24%
More than 10 years	28	28%
Current Diabetes Management		
Insulin injection	95	95%
Oral Medication	44	44%
Diet and Exercise	10	10%
Other	1	1%
Missed Follow-up		
Yes	80	80%
No	20	20%
Missed Follow-up visit/ year		
Never	24	24%
Once	25	25%
2-3 times	38	38%
4 or more times	12	12%

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In table 2, 80% of patients reported missing follow-up visits, with 38% missing 2-3 appointments annually. Key factors contributing to nonattendance included lack of time (35%), lack of awareness about the importance of follow-ups (18%), long wait times (15%), and financial constraints (13%) shows in table 3. These findings highlight critical barriers to consistent diabetes care engagement.

Table 3: Factors to the nonattendance at follow-up visits among the study cases (N=100)

Variable	Frequency	Percentage
Lack of time	35	35%
Long wait times for appointments	15	15%
Transport Issues	11	11%
Language or culture barriers	1	1%
Financial Constraints	13	13%
Lack of perceived benefit from follow up visits	2	2%
Limited Availability of diabetes education program	2	2%
Lack of awareness about importance of follow up visits	18	18%
Other	3	3%

The study learned about several perceptions regarding healthcare facilities among the participants. While 59% felt that healthcare providers adequately addressed their concerns and 56% were comfortable discussing diabetes management, 59% faced challenges in scheduling appointments. Telehealth services were underutilized, with only 10% of patients using them. Additionally, 76% reported missing visits due to concerns related to COVID-19. These findings underscore the significant barriers to effective diabetes follow-up care.

Discussion

In this study done at Basundhara Ad-Din Medical College Hospital, some important findings identified certain critical patterns of follow-up care of diabetes patients that are consistent with those reported in the literature as well as the ones that are different. The missed appointment rate recorded in this study is 80%, which is higher than other research done on similar studies in other developing countries. Piyasena et al. (2019) [14] have reported that 35% of patients missed diabetes follow-up visits due to time constraints. In terms of age and gender distribution, the patients included in this study seem to have the typical distribution with slightly more female patients (55%) and patients aged 46-60 years. Although the relatively young age of the patients, 36 years on average, and the relationship to the main employer, 'Glo-Bal Company,' may have no significant effect on follow-up, the distribution of the patients by employment status shows a high proportion of housewives (47%), which may affect the follow-up rates. The results of this research raise the question of further practice-based interventions for this group due to its definite temporal obligations and social roles. The mentioned barriers to follow-up care show both global and contextual issues. A shortage of time is also one of the most frequently identified obstacles by the patients—namely, 35% of them pointed at this issue. However, the debacle observed in the effect of COVID-19 on follow-up attendance (76% missed visits due to pandemic concerns) features a modern-day issue recent studies have likewise documented globally. A cross-sectional study by Bancks et al. (2022) [15] also reported disruption in diabetes care during the pandemic period similar to the results of the present study. A particularly low percentage of first-time use of telehealth services (10%) can be discouraging and is in contrast to other developed countries in the same period. Research from countries in the United

Table 4: Perception regarding health care facilities among the study cases (N=100)

Variable	Frequency	Percentage
Do you feel that your healthcare provider adequately addresses your concerns during follow-up visits?		
Yes	59	59%
No	28	28%
Not Sure	13	13%
How comfortable do you feel discussing your diabetes management with your healthcare provider during follow-up visits?		
Very Comfortable	8	8%
Comfortable	48	48%
Neutral	31	31%
Uncomfortable	10	10%
Very uncomfortable	2	2%
How satisfied are you with the information provided during your previous follow-up visits?		
Very dissatisfied	4	4%
Dissatisfied	12	12%
Neutral	42	42%

Satisfied	37	37%
Very satisfied	5	5%
Have you experienced any difficulties or barriers in scheduling follow up appointments?		
Yes	59	59%
No	41	41%
Are you currently utilizing any telehealth or remote monitoring services for managing your diabetes?		
Yes	10	10%
No	90	90%
How would you rate your level of understanding regarding the importance of follow up visits for managing diabetes?		
Very High	11	11%
High	22	22%
Moderate	52	52%
Low	10	10%
Very low	4	4%
Have you missed a follow up visit due to concerns about covid19 or other health related reasons?		
Yes	76	76%
No	24	24%
Are you familiar with potential complications associated with diabetes? (CVD,		
Nephropathy, Neuropathy, Retinopathy, foot problem, etc.)		
Yes	75	75%
No	25	25%
On a Scale of 1 to 5, how important do you feel follow up visits are for managing your diabetes?		
Not important at all (1)	0	0%
Less important (2)	7	7%
Moderately important (3)	26	26%
Important (4)	44	44%
Extremely important (5)	23	23%

States and Europe indicates that telehealth implementation has been at 60-70% during the pandemic period (Busso et al., 2022) [16]. Such a disparity underscores the issues to do with connectivity and infrastructure that currently define healthcare in developing nations. This percent of insulin dependence (95%) is higher than the global rates, typical for Type 2 diabetes, which range from 30 to 40 percent (World Health Organization, 2024) [17]. Unfortunately, this finding could be pointing to an early selection bias resulting from patients with severe symptoms or a possibility that there has been a variation in treatment management in the local healthcare setting. Awareness crops up again in follow-up adherence, and 18% said lack of awareness on follow-up is a barrier. This finding may not be unbefitting from research studies conducted in other developing countries, though the percentage is lower compared to research from Pakistan (28%); it may imply rather elevated baseline knowledge regarding COVID-19 within the study populace (Kumar et al., 2022) [18]. Understanding patient perceptions about the healthcare facilities presents an interesting picture as demonstrated by the studies under analysis. Although

patients' satisfaction regarding provider communication equals the global rates (59%), the difficulties in arranging an appointment (59% of people) are even higher compared to similar environments. This can only point towards more systemic changes to the current health care systems (Ginenus Fekadu et al., 2021) [19].

It is clear from these results that more complex approaches are needed to improve follow-up care, interventions that also focus on patient-level and system-level factors. Ultimately, diabetes care requires a holistic, patient-centered approach that integrates medical, social, and psychological considerations to overcome barriers and improve healthcare engagement outcomes. Further, initiatives that could support the implementation of telehealth might act as a solution towards addressing care disparities, especially when there is an emergence of unlikely events such as the outbreak of COVID-19.

Conclusion

The findings highlight the potential of socio-economic,

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psychological, and health system factors requiring a comprehensive, client-centered approach to follow-up care for patients with diabetes in Bangladesh. The need for better organization of health appointments, waiting lists, and communication is evident; hence, this needs to be embraced. The elements of education about diabetes and the follow-up measures can contribute to the improvement of the number of patients' visits. Winning strategies must include integrating more and better telemedicine, creating remote clinical and patient-controlled monitoring, and enhancing easy-to-use digital patient portals. The future work should be directed by endeavors to eliminate healthcare inequalities, enhance patient engagement, and improve health outcomes of persons with diabetes, including further research and improvement of the approaches to the delivery of diabetes care.

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