BARRIER TO SELF-MANAGEMENT OF TYPE- 2 DIABETES PATIENT: A QUALITATIVE STUDY

BY

Mir Erona Hossain

ID: 191-34-908

Submitted to the Department of Nutrition and Food Engineering in the partial fulfillment of B.Sc. in Nutrition and Food Engineering

Supervised By

Md. Shamsur Rahman

Senior Lecturer

Department of NFE

FACULTY OF ALLIED HEALTH SCIENCE (FAHS)

DAFFODIL INTERNATIONAL UNIVERSITY

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APPROVAL

This Project titled "**Barrier to Self-Management of Type- 2 Diabetes Patient: A Qualitative Study**", submitted by **Mir Erona Hossain** to the Department of Nutrition and Food Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Nutrition and Food Engineering and approved as to its style and contents. The presentation has been held on October, 2023.

<u>**EXAMINING COMMITTEE**</u>

_____

Member
Department of NFE
Faculty of Allied Health Science
Daffodil International University

_____

Dr. Nizam Uddin
Associate Professor and Head
Faculty of Allied Health Science
Daffodil International University

DECLARATION

I hereby declare that this project has been done by me under the supervision of **Md. Shamsur Rahman, Senior Lecturer**, Department of NFE, Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Supervised by:

Shamsur

_____

Md. Shamsur Rahman
Senior Lecturer
Department of Nutrition and Food Engineering
Daffodil International University

Submitted by:

Erona

_____

Mir Erona Hossain
ID: 191-34-908
Department of Nutrition and Food Engineering
Daffodil International University

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ABSTRACT

This qualitative study delves into the barriers faced by individuals managing Type-2 Diabetes through in-depth, face-to-face interviews conducted in Mirpur, Dhaka. Thirteen patients diagnosed with Type 2 Diabetes for at least two years participated. The research aims to comprehensively understand the challenges hindering effective self-management. Structured as descriptive conversations, the interviews capture the qualitative richness of participants' experiences and perspectives. The dynamic exchange of questions and answers fosters candid sharing of personal insights, revealing fresh perspectives and previously unexplored aspects of their experiences. The study identifies five main themes of barriers to diabetes self-management: inadequate knowledge, non-adherence to dietary control and neglect of physical activity, negligence in blood glucose monitoring and health check-ups, limited access to medical services, and psychological barriers. These themes shed light on the complexities individuals face in managing Type-2 Diabetes, highlighting the need for tailored interventions and support systems. The study's findings provide a valuable platform for in-depth analysis of the interplay between demographics, socio-economic factors, and the challenges encountered in the realm of self-management. Further exploration of this data holds the potential to yield critical insights for developing tailored interventions and support systems for individuals with diabetes in this context, ultimately contributing to improved outcomes and quality of life for those affected by Type-2 Diabetes in Mirpur, Dhaka.

Keywords: Type-2 Diabetes, Self-Management, Barriers, Qualitative Study.

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CHAPTER 1

Introduction

1. 1 Background

Diabetes mellitus is one non-communicable illness that affects people and families all over the world and is a complex lifelong medical condition (Arena et al., 2017; Mitchell-Brown, 2014). It was one of the top 10 causes of mortality for adults over 20 years old in 2017 and claimed the lives of over 4 million people globally (International Diabetes Federation, 2019). The number of afflicted adults has more than quadrupled in the last 20 years (International Diabetes Federation, 2019). Type 1, Type 2, and gestational diabetes are the three primary forms, with Type 2 diabetes making up nearly 90% of all cases of diabetes worldwide (Saeedi et al., 2019; Zheng et al., 2018). According to the International Diabetes Federation's estimates for 2019, 463 million adults (20–70 years) globally have diabetes. Diabetes prevalence has also been growing quickly in low- and middle-income nations throughout the world, and it appears that women are more likely than men to get the disease (Mirzaei et al., 2020). Bangladesh, a country in South Asia with a large population, is not an exception to this pattern. The prevalence of T2DM has increased dramatically in Bangladesh, creating considerable issues for both the healthcare system and those who are affected. Effective self-management is essential for reducing T2DM problems and enhancing patients' quality of life. However, there are several obstacles on the way to effective self-management, many of which are specific to the Bangladeshi setting.

Diabetes is seen as a growing health problem in Bangladesh. A high prevalence of 7 and 8%, respectively, of those who are "at risk" for diabetes have impaired fasting or impaired glucose tolerance. Proper treatment can reduce the risk of diabetes-related comorbidities and complications, which has an impact on the overall quality of life as well as the financial and psychological toll of the condition. To enhance the chance of maintaining adequate blood glucose, cholesterol levels, and insulin sensitivity, self-care behaviors are crucial. However, many T2DM patients have self-management difficulties despite the availability of therapeutic alternatives and instructional materials. The objectives of the present studies were to evaluate difficulties that T2DM patients in Bangladesh face in successfully controlling their disease, as well as its effects and potential solutions, are examined in this research.

1.2 Objectives of the Study

1. **Identifying hurdles:** To completely identify and classify the hurdles that prevent Type-2 diabetes patients from managing their condition on their own.
2. **Identifying obstacles:** To fully list and categorize the barriers that Type-2 diabetes patients face while trying to manage their illness on their own.
3. **Contributing to Knowledge:** By combining previously conducted research with fresh perspectives, we aim to advance academic understanding of diabetes self-management.

4. **Empowering Patient:** The study ought to be a useful source of information for people with diabetes. This will empower them with knowledge and make them relax

CHAPTER 2

Literature Review

2.1 Literature Review

A chronic metabolic disease called type-2 diabetes affects millions of individuals globally. For people with diabetes to achieve optimal glycemic control, reduce complications, and improve their quality of life, they must effectively manage their disease. However, various obstacles prevent type-2 diabetes patients from successfully managing their condition. In order to shed light on the many obstacles that prevent self-management and adherence to advised diabetes treatment measures, this review of the literature examines and synthesizes the available evidence. The articles that were chosen were those that were pertinent to the subject and had strong supporting arguments. Socioeconomic factors play a pivotal role in diabetes self-management. Individuals with limited access to healthcare services, low income, or inadequate health insurance may face difficulties in obtaining necessary medications, monitoring supplies, and regular healthcare visits. Additionally, food insecurity and a lack of access to nutritious foods can make it challenging to adhere to dietary recommendations. Healthcare policies that aim to reduce healthcare disparities and improve access to care are critical in addressing these barriers. Inadequate support from family and friends was consistently reported as a barrier. Patients who lacked emotional and practical support struggled to adhere to treatment plans and cope with the demands of diabetes management. Cultural beliefs and language barriers played a role in self-management difficulties. Patients from diverse backgrounds faced challenges in adapting their diets and lifestyles to diabetes recommendations. Several studies emphasized the impact of psychosocial factors, such as depression and anxiety, on self-management. These conditions hindered motivation, adherence to dietary recommendations, and engagement in physical activity. Fear of side effects, concerns about medication costs, and difficulty in managing complex medication regimens can deter patients from taking prescribed medications as directed. Challenges in modifying dietary habits, including cultural food preferences, limited access to healthy food options, and emotional eating, can make it difficult for patients to control blood sugar levels.

The findings of this literature review underscore the multifaceted nature of barriers to self-management in type 2 diabetes patients. These barriers encompass individual factors, socioeconomic challenges, psychosocial issues, and healthcare system deficiencies. The lack of understanding and awareness regarding T2DM is one of the main obstacles to self-management. According to a number of studies, those who have poor glycemic control are more likely to have a limited awareness of diabetes, how it progresses, and how important self-management is (Huizinga et al., 2005). This barrier is a result of low health literacy and a lack of understanding of the effects of uncontrolled diabetes (Schillinger et al., 2002). The numerous obstacles to self-management that T2DM patients in Bangladesh experience are highlighted by this review of the literature. Designing culturally sensitive and context-specific treatments to promote self-management behaviors and health outcomes requires an understanding of these difficulties. In order to help T2DM patients properly manage

their illness and lessen the burden of diabetes in Bangladesh, it will be necessary for healthcare professionals, policymakers, and the community to work together to address these hurdles. The usefulness of personalized therapies in this particular situation has to be further investigated.

CHAPTER 3

Materials and Methods

3.1 Research Design

This qualitative study titled; "**Barrier to Self-Management of Type-2 Diabetes Patients**: employs in-person interviews to comprehensively understand the challenges faced by individuals managing Type-2 Diabetes. The research focuses on gaining detailed insights into the obstacles hindering effective self-management. The interviews are structured as descriptive conversations, aiming to capture the qualitative richness of the participants' experiences and perspectives. Direct engagement between the researcher and participants facilitates a dynamic exchange of questions and answers, encouraging candid sharing of personal insights. This approach proves valuable in uncovering fresh perspectives and previously unexplored aspects of their experiences. Overall, this research design enables a deeper understanding of the barriers faced by Type-2 Diabetes patients in their efforts toward self-management.

3.2 Data Collection and Analysis

Data were collected at in-depth face-to-face interviews between January and June in 2023. The interviews lasted 11-15 minutes and were recorded with a voice recorder. The data were collected through questionnaire in Bangla to make them understand. Later on, it was translated in English for research purpose.

3.3 Study Population

This is a qualitative study, was conducted in Mirpur, Dhaka and the sample included 13 patients diagnosed as type II diabetes at least for 2 years.

3.4 Ethical Consideration

All patients with diabetes who satisfied the study's inclusion criteria were properly informed about the study and its goals in order to obtain their consent for the study. The researcher also requested permission to visit the study participants at the facility. Before any data was collected, each participant signed the informed consent forms.

CHAPTER 4

Results and Discussions

4.1 Results

4.1.1 Demographic Characteristics

Table 1 provides a comprehensive snapshot of individuals participating in a qualitative study focused on understanding the barriers to effective self-management of diabetes. These participants are primarily based in Dhaka, reflecting a concentrated urban demographic. Among the participants, a majority are female, indicating a potential gender imbalance in the sample. Their ages range from 33 to 75 years, reflecting a diverse spread of life stages and experiences. Educational backgrounds vary considerably, with some individuals having completed only primary school, while others have achieved higher levels of education, such as high school or even graduation. This spectrum of education levels suggests potential disparities in access to information and resources regarding diabetes management. Marital status predominantly leans towards being married, indicating that many of the participants may have familial responsibilities and support networks. The majority of participants identify as housewives, which may have implications for their available time, resources, and the extent to which they engage in self-management practices. However, it's important to note the presence of other occupations, such as service holders and muajjims, which introduces diversity in employment status and responsibilities. The duration of living with diabetes varies from as little as 2 years to as long as 21 years, showcasing a wide range of experiences. This discrepancy in disease duration may influence the participants' level of familiarity with diabetes self-management strategies and their coping mechanisms. The length of interviews, ranging from around 11 to 15 hours, indicates a significant commitment from both the participants and the researchers. This suggests that the data collected is likely to be detailed and rich in insights. This dataset offers a platform for in-depth analysis of the interplay between demographics, socio-economic factors, and the challenges encountered in the realm of self-management. Further exploration of this data could yield critical insights for developing tailored interventions and support systems for individuals with diabetes in this context.

Table 4.1: Demographic Characteristic of Participants

Patient No	Location	Gender	Age	Education	Marital Status	Occupation	Disease Duration (Years)	Length of Interview
P1	Dhaka	Female	45	High School	Married	Housewife	6	11:31
P2	Dhaka	Female	52	High School	Married	Housewife	21	15:09
P3	Dhaka	Female	70	No Formal Education	Married	Housewife	4	12:00
P4	Dhaka	Female	52	No formal education	Married	Housewife	7	13:48
P5	Dhaka	Female	52	Secondary school	Married	Housewife	5	14:11

P6	Dhaka	Male	58	Dakhil	Married	Muajjim	3	13:38
P7	Dhaka	Female	33	Secondary school	Married	Housewife	12	13:23
P8	Dhaka	Female	45	Secondary school	Married	Housewife	8	14:11
P9	Dhaka	Female	42	Primary school	Married	Housewife	2	14:16
P10	Dhaka	Female	45	Secondary school	Married	Housewife	4	13:23
P11	Dhaka	Female	55	No formal education	Married	Housewife	6	13:38
P12	Dhaka	Male	49	Graduation	Married	Service holder	13	14:05
P13	Dhaka	Female	75	Primary school	Married	Housewife	20	14:00

4.2 Discussions

4.2.1 Barriers to Diabetes Self-Management

Patients with Type 2 Diabetes faced various barriers, which may be categorized into five main themes: Inadequate knowledge, non-adherence to dietary control and neglect of physical activity, lack of blood monitoring, limited access to medical services, and fear.

4.2.2 Inadequate Knowledge

Participants' understanding of diabetic management varies widely within the group. This is evident in the diverse range of responses provided. Some individuals demonstrate a basic grasp of how to manage their diabetes, which may involve practices such as monitoring blood glucose levels or making dietary adjustments. They may be aware of the need to take precautions, but their knowledge may not extend to more advanced or nuanced aspects of diabetes management.

Conversely, there are participants who appear to have a more limited understanding of how to effectively manage their condition. Their responses suggest that they may benefit from further education or guidance in this area. This could include information on lifestyle modifications, foot care, and the importance of regular monitoring.

A noteworthy observation is that some participants express a belief that they have no significant issues or complications related to their diabetes. This perception may stem from a lack of awareness regarding potential long-term consequences of unmanaged diabetes. They may not see an immediate need for extensive management efforts, which could potentially lead to complacency in their approach to their condition.

The finding highlights the variability in participants' knowledge levels, ranging from basic to more advanced understanding of diabetic management. Tailoring education and support to meet individuals where they are in terms of their knowledge and awareness could be crucial in improving their overall management of diabetes.

Participant 1: "I Did a diabetic test, I do not take special care of my feet. I think I have no Problem."

Participant 11: "I do not take care of feet even my body."

4.2.3 Non adherence to diet and exercise

The qualitative data illuminates the pivotal role of dietary modification in the management of diabetes. Participants across the spectrum acknowledge the importance of altering their dietary habits to exert better control over their blood sugar levels. Nevertheless, the degree of adherence to these modifications displays a considerable variance among the respondents, indicative of a wide array of approaches and challenges in implementing dietary changes.

While some participants exhibit a conscientious effort in adjusting their diet, including the restriction of sweet foods and the preference for healthier options, others grapple with incorporating these alterations. This incongruity may find its roots in diverse factors, encompassing individual predilections, cultural influences, and distinct coping mechanisms employed in navigating dietary shifts within the context of diabetes.

Among the participants, various barriers to achieving effective dietary modification come to light. Firstly, some individuals cite a paucity of time as a significant obstacle in engaging in regular physical activity. This temporal constraint may impede their ability to complement dietary adjustments with exercise, a critical component in the holistic management of diabetes. Furthermore, for certain participants, evading sweets proves to be a formidable challenge. This difficulty may be traced back to personal inclinations or a deep-seated attachment to particular types of foods, making it more arduous to wholeheartedly commit to dietary alterations. Additionally, participants express struggles in restricting specific food items, signifying that particular dietary adjustments may pose greater difficulties for them to embrace. These challenges could emanate from an array of factors, including cultural or social influences, persistent cravings, or an unfamiliarity with suitable substitutes.

Theme 2 underscores the paramount importance of recognizing the diverse approaches and hurdles individuals face when endeavoring to modify their diet and lifestyle for diabetes management. It underscores the imperative for tailored strategies that directly address specific barriers, such as time constraints and the challenges associated with avoiding certain foods. By acknowledging and adeptly addressing these hurdles, healthcare providers and educators can collaborate with individuals to formulate pragmatic and sustainable dietary plans that harmonize with their unique circumstances and preferences.

Participant 6: "Restricted fruits like mango, and jackfruit but eat sometimes small amounts. Cannot walk due to knee pain."

Participant 2: "I avoid sweet food and meat from my menu. I don't feel any problem with dietary modification. I don't do physical exercise. I don't get time to do."

4.2.4 Negligence in blood glucose monitoring and health check up

The study reveals a notable divergence in the frequency of blood glucose monitoring among the participants, highlighting distinct approaches to managing diabetes. While some individuals demonstrate a diligent commitment to regular testing, others engage in this practice sporadically or with less frequency. This variance suggests that there exists a wide spectrum of engagement levels in monitoring blood glucose, reflecting differing levels of attention and dedication to managing their condition.

Furthermore, participants employ various means to conduct these blood glucose tests. Some possess testing machines in the convenience of their own homes, affording them the autonomy and accessibility to monitor their levels whenever necessary. This autonomy can foster a greater sense of control over their diabetes management. Conversely, a subset of participants relies on local pharmacies or medical practitioners for their blood glucose testing needs. This reliance may imply a preference for professional oversight or may be indicative of limited access to personal testing equipment.

This theme underscores the individualized nature of blood glucose monitoring practices and the significance of accessibility in determining how frequently individuals engage in this crucial aspect of diabetic management. By recognizing this variability, healthcare providers can offer tailored guidance and support to empower individuals in making informed decisions about the frequency and method of blood glucose monitoring that best suits their lifestyle and needs.

Participant 5: "I do not check blood glucose regularly. Monitor every 2/3 months."

Participant 10: "I don't go to hospital to check blood glucose but check from local pharmacy store."

4.2.5 Psychological Barrier

The participants' psychological state in relation to their diabetes management is marked by a spectrum of emotions and attitudes. This theme reveals that individuals experience varying levels of fear or concern associated with their condition. For some, these emotions may be prominent and shape their approach to managing diabetes.

Specifically, a notable subset of participants expresses specific fears regarding insulin. This apprehension may arise from a lack of familiarity or understanding about the role of insulin in diabetes management. These individuals may harbor concerns about the administration process, potential side effects, or the perceived impact on their daily lives.

Conversely, there are participants who have successfully navigated through initial fears related to their diabetes. This suggests a capacity for adaptation and resilience. These individuals have likely gained a deeper understanding of their condition over time, potentially through education, experience, or support networks. Their ability to transcend initial apprehensions indicates a potential for empowerment and a more constructive psychological approach to diabetes management.

Theme 5 underscores the significant influence of psychological factors on individuals' diabetes management journey. The presence of fear and concern, particularly regarding insulin, highlights the importance of providing comprehensive education and support to address these specific anxieties. Additionally, recognizing and celebrating the resilience of those who have overcome initial fears can serve as a source of inspiration for others, fostering a sense of agency and confidence in managing their condition. By acknowledging and addressing these psychological dimensions, healthcare providers can contribute to a more holistic and supportive approach to diabetes management.

Participant 11: "I had fear in the first stage as I saw my mother suffering from diabetes. I thought I would not live much longer, and that I might lose my feet due to diabetes. However, I have since overcome that fear."

Participant 2: "I feel fear. I don't take insulin."

CHAPTER 5

Conclusion

5.1 Conclusion

This qualitative study provides a comprehensive understanding of the barriers faced by individuals managing Type-2 Diabetes. Conducted through in-depth, face-to-face interviews, the research captures the qualitative richness of participants' experiences and perspectives. The study population, comprising 13 patients diagnosed with Type 2 Diabetes for at least 2 years in Mirpur, Dhaka, offers diverse demographic representation. The participants, primarily based in Dhaka, range in age from 33 to 75 years, reflecting a broad spectrum of life stages and experiences. Educational backgrounds vary, indicating potential disparities in access to diabetes management resources. The study identifies five main themes of barriers to diabetes self-management: inadequate knowledge, non-adherence to dietary control and neglect of physical activity, negligence in blood glucose monitoring and health check-ups, limited access to medical services, and psychological barriers. These themes shed light on the complexities individuals face in managing Type-2 Diabetes, emphasizing the need for tailored interventions and support systems. Overall, this dataset provides a valuable platform for analyzing the interplay between demographics, socio-economic factors, and the challenges encountered in self-management. Further exploration holds the potential to yield critical insights for developing interventions and support systems, ultimately improving outcomes for individuals affected by Type-2 Diabetes in Mirpur, Dhaka.

5.2 Future Recommendations

- **Tailored Education:** Develop personalized educational programs to address knowledge gaps in Type-2 Diabetes management.
- **Promote Physical Activity:** Encourage regular exercise through accessible programs and resources.
- **Improve Monitoring Access:** Ensure easy access to blood glucose monitoring tools and supplies.
- **Provide Psychological Support:** Offer counseling and resources to address fears and concerns, especially related to insulin.
- **Multidisciplinary Care:** Foster collaborative healthcare teams to create comprehensive care plans.

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