

ORIGINAL ARTICLE

Exploring Patient Experiences and Challenges to Diabetes Self-Management among Diabetic Patients in the North Shoa ZoneAkine Eshete¹, Zenebe Abebe¹, Lemma Getacher¹, Abera Lambebo¹, Tilahun Deresse²

OPEN ACCESS

Citation: Akine Eshete, Zenebe Abebe, Lemma Getacher, *et al.* Exploring Patient Experiences and Challenges to Diabetes Self-Management among Diabetic Patients in the North Shoa Zone. Asrat J of Health Sci. 2026; 1(1):9-25.

Received: December 2025

Accepted: May, 2026

Published: August, 2026

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Funding: Nil

Competing Interests: The authors declare that this manuscript was approved by all authors with no competing interest.

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Vol. 1 No. 1

ABSTRACT

Background: Despite ongoing care and interventions, many patients with diabetes still struggle with poor self-care and limited knowledge. Understanding patient experiences, challenges, and barriers to self-care is essential to help manage and control diabetic health conditions. This current study aimed to explore patient experiences and challenges to diabetes self-care.

Methods: A descriptive qualitative study was conducted from July 1-30, 2024 in the North Shoa Zone of the Amhara region. The study included a total of 25 participants who were selected with the maximum variation sampling method. Data were collected using an interview guide, then recorded, transcribed and analyzed using ATLAS.ti V25. Key codes, subthemes and main themes related to diabetes self-care and its challenges and barriers were identified using a thematic framework.

Results: Self-management of diabetes was often inadequate. Self-monitoring of blood sugar, dietary practices, regular physical activity, and foot care were the main challenges for almost all participants. The challenges and barriers related to self-management included limited knowledge about self-care, socioeconomic constraints, inadequate guidance, psychological factors such as low motivation and stress, limited social support, cultural influences, and poor access to essential resources.

Conclusion: The patients' experience of self-management behavior was insufficient due to multiple challenges and barriers. Integrated behavioral change interventions are essential to address barriers at all levels. This includes culturally tailored education on recommended behaviors, as well as mental health support and guidance at the community and family level.

Keywords: Patient experience in self-management behavior, Barrier to self-management behavior, North Shoa zone



INTRODUCTION

Diabetes mellitus is a common chronic disease and a major global health threat in the world community [1]. In Ethiopia, diabetes increased from 1% in 2000 to 3% in 2022, affecting 1.92 million adults. It is expected to reach 2.74 million by 2030 and 4.76 million by 2045 [1, 2]. Diabetes care in Ethiopia remains inadequate, with much lower rates of prevention and treatment than other health issues [3-5]. Diabetes requires lifestyle changes, self-care, and healthy habits for effective blood sugar control and overall health [6-9]. Effective diabetes management requires sustained behavioral changes for successful self-care [10].

Self-management of diabetes involves actions by individuals to independently control their condition independently [9]. Self-management of diabetes includes adequate nutrition, exercise, glucose level tests, timely intake of medications, and making some changes in one's lifestyle, which are based on knowledge and skills, lifestyle changes, and psychological support [11, 12].

Although self-care practices are essential, there are various barriers that limit patients with diabetes at the individual, community, and healthcare system level [9, 13], and also psychological and behavioral factors hinder self-management practice [14]. A sample of studies supported different barriers that affected self-management behaviors among patients [13-15]. Therefore, this highlights the need for detailed evidence on patient experiences and barriers that contribute to poor self-care [14, 16].

In Ethiopia, there is a lack of information on patient experiences, barriers, and problems leading to poor self-management practices [17-19]. In addition to that, limited research studies

have revealed various barriers and problems that influence patient self-management practices of patients [13, 20-23]. Due to the complexities involved in diabetes self-management, comprehensive evidence is needed on patients' experiences, challenges, and barriers [9].

In Ethiopia, there is more emphasis on quantitative research than qualitative research, which limits understanding of patient experiences and barriers to self-management. Therefore, this study employed a qualitative descriptive study design in an attempt to examine patient experiences, challenges, and barriers to self-management. Additionally, it is important to understand patient experiences, challenges and barriers to self-management to be able to overcome such challenges.

MATERIALS AND METHODS

Study Design and Population: This qualitative exploratory study was conducted in the north Shoa Zone of the Amhara Region from July 1 to 30 of 2024. The study included a total of 20 diabetic patients and five key informants. The number of interviews is limited by the principle of data saturation [24, 25]. Illegible samples of both patients and health care providers were selected from four districts within the zone. A diverse group of participants was selected using a maximum variation sampling approach. This approach was used to capture a variety of points of view on patient self-management and challenges.

Data collection methods: Data collectors who had been trained performed the interviews using a structured questionnaire and the entire interviews were recorded. The interview guide was formulated after reviewing relevant literature [26]. The interview guide was developed in English, translated into Amharic

language and validated by experts. The validity and relevance of the interview guide were confirmed prior to actual data collection.

The questions in the interview guide were formulated in such a way that they were meant to investigate the challenges and barriers faced in self-management practices. Informed consent was sought from each participant prior to the actual interview process. The data collector arranged and scheduled the interviews for 30-40 minutes per session.

Data Analysis Method and Process: The data analysis process was conducted after transcribing the interview data verbatim in Microsoft Word and analyzing it using the ATLAS.ti v25 software program. A thematic framework approach was used to generate key codes and themes and to systematically explore participants’ perspectives [27, 28].

The data analysis process included the process of generating codes, sub-themes, and themes in relation to the research questions. First, several times reading of the transcripts was done to familiarize oneself with the data and summarize its major concepts and impressions. Then, reviewing the raw data and coding the significant pieces of the participant experience was done. Furthermore, the generated codes were placed in subthemes that corresponded to broader categories. The subthemes that were related to each other were placed in broader themes that reflected the essential aspects of self-care, difficulties, and barriers.

RESULTS

Sociodemographic characteristics of the patients: In total, 20 diabetic patients participated in the in-depth interviews. Of these, 60% were male patients and mostly middle aged

(60%). Most of these patients (60%) lived in urban areas and 45% of them did not know about their particular type of diabetes (Table 1).

Table 1: Sociodemographic characteristics of study participants in the north Shoa zone, Amhara Region, Ethiopia, 2024

Variables	Frequency n (%)
Sex of the respondent	
Male	12 (60%)
Female	8 (40%)
Age of the respondent	
Young age (25-44)	6 (30%)
Middle age (44-60)	12 (60%)
Elderly age (>60)	2 (10%)
Pace of residence	
Urban	8 (40%)
Rural	12 (60%)
Employment status of the respondents	
Government employee	6 (30%)
Private / merchant	1 (5%)
Farmer	3 (15%)
House wife	5 (25%)
Daily worker and self-worker	5 (25%)
Type of diabetes	
Type one diabetes	4 (20%)
Type two diabetes	7 (35%)
I don’t know the type of diabetes	9 (45%)

Sociodemographic characteristics of the health care providers: This study involved five health care providers in key informant interviews. Three were males and most of them were between 25 and 44 years old. These health care professionals include a physician and a nurse. All health workers work in chronic follow-

up clinics and have 2.2 years of experience (Table 2).

Table 2: Sociodemographic characteristics of health care providers in the North Shoa Zone, Amhara Region, Ethiopia, 2024

Variables	Frequency n (%)
Sex of the respondent	
Male	3 (60%)
Female	2 (40%)
Age of the respondent	
Mean age of the respondent	30.5±6.2
Young age (25-44)	3 (60%)
Middle age (44-60)	2 (40%)
Profession of the respondents	
Physician	4 (80%)
Nurse	1 (20%)
Working experience of the respondents	
Mean working experience	2.2±1.32
Less than two year	2 (40)
Greater than two year	3 (60)

Diabetic Self-Management Behaviours: In this study, various self-management behaviors were categorized into one common category, adhering to the recommended self-care practices. Categories of diet practices, physical activity, taking medications on time, monitoring blood glucose level, and foot care were classified as subthemes. The results showed that self-management of diabetes continues to be a major problem faced by almost all participants. Most participants reported neglecting self-care due to busy work schedules. However, the health care provider reported that many participants did not practice the recommended behaviors.

"...Life is hard now. What kind of self-care practices are there? I leave it day to day." (78-year-old man T1D)

"... Adherence to self-management is inadequate, especially in diet, exercise, foot care, and glucose monitoring. Patients often eat what is available and have limited access to exercise facilities." (Male, Medical Doctor)

Regular physical exercise: Most of the respondents did not exercise on a regular basis. Although many of them used to walk as their only form of physical exercise, they did not perform any other form of exercise. This was because they did not know what forms of exercises were recommended for them.

"Some days I walk, but I do not perform any physical activity apart from walking....." (60-year-old housewife, p#17 and 55-year-old man T2D, p#12)

'I couldn't perform a regular moderate-intensity exercise because I was unaware of how I should perform the exercise.' (52-year-old man T2D, p#13; and 23-year-old woman T1D, p#16)

'... Even though I participate in farming activity regularly, I do not participate in any recommended exercise for patients with diabetes.' (32-year-old farmer, p#2; and 28-year-old farmer, p#2)

Adherence to recommended dietary practice: Of all the interviewees, very few followed their diet, yet even those who did not have a weekly menu to follow. Majority of the participants did not have any good plan to eat a healthy diet, but tended to eat whatever food was available to them. They were unaware of any meal plans related to diabetes.

'I do not eat foods that increase my sugar level but strictly with regard to vegetables, fruits, and other advisable foods.' (A 50-year-old man with type 1 diabetes, p. 18)

'... My sugar level keeps increasing because I eat whatever food is there. I eat milk, meat, butter, sugar-containing foods, and many other foods.' (A 60-year-old female, p#9)

'While I did not eat sweet and fatty foods, I could not take advisable foods regularly due to lack of availability.' (A 54-year-old male, T2D, p#14).

Almost all of the participants mentioned that Injera is a food item that is consumed daily without focusing much on appropriate foods. Many patients stated that, just like other family members, they follow routine meal patterns that other nondiabetics usually do, and they find it difficult to have special meals prepared for themselves and they eat many Ethiopian foods that contain salt and unhealthy fats.

"...Life is not what I was expecting. I eat what is around me rather than eating a particular diet." (70-year-old man T2D, p#8 and 54-year-old man T2D, p#14)

Regularly taking medication: Most respondents stated that they took their medications regularly. However, some respondents said that they could not take their injections while fasting, or due to drug shortages caused by local instability.

Regular self-blood glucose monitoring: The majority of the participants said that they did not monitor their blood glucose levels, as they believed that this was taken care of by health facilities during follow-ups. Furthermore, most participants said they did not have access to the glucometers.

"I should test my glucose level when I feel sick, but I did not have a glucometer, and I did not know how to use it." (45-year-old woman with T2D, p#20)

Foot care practice: Only a small number of participants were found to wash and examine their feet regularly, while most had walked without practicing foot care. Although they did not practice foot care daily, they still sometimes washed and checked their feet.

'I didn't know it was good to wash and examine my feet regularly. I don't know how to do it.' (55-year-old man with T2D, p. 6) *'I didn't know it was good to wash and examine my feet regularly. I don't know how to do it.'* (55-year-old man with T2D, p. 6)

Barriers to diabetic self-management behaviors: Barriers to self-management for patients with diabetes were classified as individual, interpersonal, or community-level barriers. Accordingly, eight subthemes emerged including lack of self-management knowledge, psychological barriers, and socioeconomic barriers, lack of support, provider-related barriers, cultural barriers, and limited access to resources.

Knowledge-related barrier: The lack of knowledge about self-management practices was identified as the most common barrier to effective management of diabetes. Similarly, healthcare professionals observed that patients lack knowledge about self-practices. The lack of knowledge was considered as the main barrier to healthy food consumption by both patients and healthcare professionals. Participants reported limited knowledge and guidance on appropriate physical exercise and diabetes-friendly diets, including the type, intensity, content, and

frequency of these self-care practices. Most participants were unaware of the importance of proper foot care and tended to neglect it. Blood sugar levels were monitored mainly during follow-up sessions.

'I am unfamiliar with other types of physical exercise other than what my doctors recommend for walking.' I need more guidance in regards to the type of exercises recommended''. (45-year-old woman, T2D, p#20; 32-year-old farmer, p#2 and 54-year-old man T2D, p#14)

'I didn't know the importance of checking my feet and foot care measures.' (28-year-old farmer, p#15)

Psychologically related factors: Motivation, sadness, stress, and anger were the barriers that were most commonly identified. Healthcare professionals mentioned the lack of knowledge about the importance of self-management that negatively affects patient motivation. Patients found it difficult to follow the self-management recommendations and are disappointed in them. Furthermore, all participants expressed that their motivation for self-management depended on the level of pain and severity of the condition.

Most participants said that stress and hopelessness prevent them from taking care of themselves properly. They said that high blood glucose levels despite adherence to a healthy diet and physical activities caused frustration and stress.

'...when I feel hopeless and stressed, it is hard to maintain self-care and often end up eating whatever is available.' (60-year-old housewife, p 9)

Socioeconomic-related factors: Participants reported that low income and economic

constraints had made it difficult for them to engage in the recommended behaviors.—They mainly talked about financial constraints associated with low income and economic background as the major hindrance to self-care.

'...With my low income status, it is difficult to get healthy foods and a glucometer. How can I manage my self-care under these constraints? (57-year-old farmer, p#7; 60-year-old woman, p#17)

Family support-related factors: Family support was listed as one of the important factors in healthy eating, cooking, taking medications, and other self-care practices. While some had supportive families, most stated lack of support as one of the greatest obstacles to practicing proper self-care. Both medical professionals and patients believed that the main problem when it comes to eating well is the difficulty in preparing separate meals for oneself and family members.

'I didn't receive any family support and managed everything in terms of my diabetes care by myself.' (41-year-old male, p#11)

'While I know that a proper diet is necessary, I have to eat what is cooked at home, as cooking separately for myself and my family is difficult.' (56-year-old woman, p #19, and 54-year-old man T2D, p#14)

Barriers related to community support: Peer pressure and social events have been observed to facilitate unhealthy self-care behavior, especially unhealthy eating. It was due to the influence of friends, peers, and relatives in particular on social occasions such as weddings, holidays, and religious festivals. Some participants reported that community members avoided medication because of the belief that starting treatment

meant a lifelong and incurable disease, reflecting misconceptions about the irreversible nature of diabetes.

"...Some diabetes patients end up eating forbidden foods at festivals and social events due to the absence of healthy alternatives." (Medical doctor, male)

'... At weddings, holidays and religious ceremonies, there are no healthy options for diabetics, so I end up eating whatever is available.' (60-year-old housewife, p#9; 54-year-old man, T2D, p#14))

'... I feared that starting the medication early would mean accepting diabetes as a lifelong condition. I stopped taking it, which led to complications and leg ulcers. '(28-year-old man, p#15)

Most of the participants said their community lacks diabetes support groups, which are needed for education on nutrition, exercise, and self-care.

'... Education and support are crucial, as patients lack a basic understanding of recommended self-care practices. '(36-year-old nurse)

Health care provider-related barriers: Most of the participants reported insufficient and inconsistent guidance on self-care practices, leading to confusion in managing their condition. Patients and healthcare providers agreed that due to the heavy workload on patients, there was not enough counseling, thus insufficient guidance. Patients also disregard the advice of doctors.

'Even when I go to the hospital for serious health issues, providers focus on case management and I don't receive enough support or advice on how

to manage my condition in the future or at home.' (55-year-old man with T2D, p#6)

Some participants noted that physicians often focus on blood sugar levels and neglect patient emotional well-being, offering insufficient support when patients are stressed and lose interest in their medication.

"The doctor doesn't listen to my concerns, even when the injection site is injured. I doubt the effectiveness of the medication because my blood sugar has remained at 250 mg/dL for a long time. "(41-year-old man, p#11)

Culturally related barriers: Some diabetic participants and service providers reported that social gatherings, such as weddings, holidays, and religious events, contribute to unhealthy eating habits. They mentioned that healthy food was often not available and there is peer pressure to eat unhealthy options.

"... Some diabetes patients end up eating forbidden foods at festivals and social events due to the lack of healthy alternatives. "(Medical doctor, male)

"... At weddings, holidays, and religious ceremonies, suitable food for diabetics is often lacking, so I end up eating what is available." (60-year-old housewife, p#9; 54-year-old man, T2D, p#14)

Although less widely reported, some believed that diabetes is a disease of the rich. Those who considered themselves poor neglected self-care practices such as diet, exercise, and glucose monitoring, thinking that they could not afford or follow them.

Resources availability and accessibility-related barrier: The lack of availability of

healthy food, medications, glucometers, and physical exercise facilities is a serious hindrance to managing diabetes. Both participants and healthcare providers expressed that lack of availability, high cost, and environment were the key barriers. Some participants noted that they lived in a distant place where resources such as healthy food and exercise facilities are not available.

'I often lack high-fiber and sugar-free foods at home, and the distance from the market and the high cost of food make it difficult to maintain a healthy diet.' (50-year-old housewife, p#8; 54-year-old man, T2D, p#12).

DISCUSSION

In this study, diabetic self-management behaviors was a major challenge for many patients, particularly with self-monitoring blood sugar, adhering to dietary practice, maintaining regular exercise and practicing foot care. These issues are consistent with the findings of previous large studies in Ethiopia and other countries [29-33]. A phenomenological study in northeastern Ethiopia found that foot care, diet practice, exercise, and self-monitoring of blood sugar were neglected [23]. A systematic review in high-income Western countries found low adherence to diabetes self-management, especially in glucose monitoring, medication, diet, and physical activity [34]. This highlights the need to integrate self-care practices into busy schedules by addressing the specific challenges faced by individual patients.

Despite the well-documented benefits of regular physical activity for the management of diabetes, most of the study participants do not exercise regularly. Nearly all participants reported a lack of regular exercise. This issue is observed in

Ethiopian studies, where similar challenges in integrating exercise into daily practices have been reported [21, 33, 35-38]. This highlights a critical gap in integrating physical activity into diabetes management [39, 40].

In this study, some participants mistakenly believed that household work could substitute for exercise, which hindered their physical activity. This is consistent with findings from Pakistan [41]. Additionally, some participants believed that exercise combined with medication was ineffective in lowering blood sugar, leading them to stop exercising. This misunderstanding hinders the management of diabetes, despite evidence supporting the benefits of exercise [42]. Similar misconceptions result in lower adherence to physical activity among diabetes patients [43].

Maintaining a healthy diet is challenging for many participants, who often lack a meal plan and make unhealthy food choices. Studies in Ethiopia indicate that inadequate meal planning and unhealthy eating habits are widespread among people with diabetes [21, 33, 44-46]. Addressing these dietary challenges is crucial to better diabetes management, as supported by studies [47, 48].

In this study, participants who eat whatever food is available experience increased blood sugar levels. This is consistent with previous research, which indicates that inadequate meal planning and unhealthy eating negatively impact diabetes management, leading to worse outcomes [49]. Another study in Ethiopia found that inadequate management leads to elevated blood sugar levels and persistent symptoms [50]. Improved diet guidance and access to healthy food are essential for better diabetes management [47, 48].

In this study, most participants regularly took their anti-diabetic medication, consistent with the findings from Ethiopia, where patients generally demonstrate better adherence [21]. The study found that some participants had difficulties fasting and experienced medication shortages due to instability. These issues, previously documented, highlight the need for clear guidelines for managing diabetes during fasting and improved medication access [39].

In this study, most of the respondents recognize the importance of blood glucose testing but rarely practice it. This finding is consistent with studies in Ethiopia and other countries, where self-monitoring is often neglected due to limited access to the glucometer and insufficient education [30, 51, 52]. A phenomenological study in northeastern Ethiopia found that most patients checked their blood sugar levels only during follow-up visits [23].

In this study, foot care was significantly neglected and few participants practiced daily washing and inspection. This problem is commonly reported in Ethiopia, where foot care is one of the least recognized self-care practices [21, 53-56]. A study in northeastern Ethiopia found that most patients neglected foot care due to perceptions that it was unnecessary, as well as lack of knowledge, assistance, and general negligence [23]. A study in India found that foot inspection, specialized shoes, moisturizing, and nail care are frequently neglected [57].

The study found that the most common barrier to effective diabetes self-management was a lack of knowledge about the essential practices that affected patients' adherence to recommended self-care. Previous studies also highlight inadequate self-care knowledge as a major barrier to effective diabetes management [15, 58-

62]. A systematic review in high-income Western countries found that lack of knowledge is the most common reason for poor self-management of diabetes self-management [34]. In Ethiopia, many people with diabetes lack a basic understanding of the recommended self-care practices, which hinders their ability to follow them effectively [20, 33].

This study found that lack of motivation, sadness, stress, and anger were major psychological barriers to self-care for diabetes. Many respondents struggled with personal motivation, which is consistent with previous research that highlights challenges in maintaining physical activity, dietary changes, foot care, and other self-care practices [15, 58, 60, 63]. An umbrella review highlights psychological factors as the main barrier to adhering to self-management behaviors [14]. The finding highlights the crucial need to improve motivation and correct misconceptions to strengthen self-care practices for diabetes. Access to mental health services, motivational strategies, and support groups is vital to address psychological barriers in the self-care of diabetes.

In this study, participants noted that hopelessness and pain hindered their self-care practices. Many diabetic patients are also frustrated with self-management advice and maintaining effective self-care. This aligns with a study in Ghana in which patients' hopes and fears about diabetes negatively influence their self-management practices [64]. Another study in Pakistan found that diabetic patients often feel frustrated with self-management advice and care plans [65]. Emphasizing a patient's sense of responsibility is crucial to effective self-management of diabetes. A study in Nepal found that patients with a strong sense of responsibility were more likely to take

the appropriate actions to manage their diabetes [58].

Socioeconomic status plays a crucial role in accessing high-quality and timely healthcare. In this study, financial constraints were commonly identified by participants as a significant barrier to implementing dietary changes, engaging in physical activity, monitoring glucose levels, and adhering to other self-care practices. Previous research highlights that limited income and affordability issues significantly impede dietary adjustments, glucose monitoring and regular exercise [41, 62, 66, 67]. A recent review indicates that low-income earners are more likely to practice unhealthy dietary habits [68]. The study calls for expanding access to low-cost services, supporting community programs, advocating supportive policies, and providing financial counseling to address financial barriers.

Family support significantly influences diabetic self-management behavior, either by facilitating or hindering it. In this study, the lack of family support was identified as a significant barrier to following recommended self-care practices. This finding is consistent with a studies done in Nepal [58], in Mumbai [63], and in Ethiopia [21, 22], where most patients reported a lack of support from family members. The study suggests implementing family-focused education programs and encouraging open communication to enhance family support in the management of diabetes. Evidence shows that supportive family behavior effectively promotes dietary adjustments, blood glucose management, and overall self-care [69].

This study found that peer pressure and social events contribute to inadequate self-care practices. Published evidence confirms that inadequate social support is directly associated

with poor self-care practices [39]. Many studies in Ethiopia found that patients with infrequent social support had poor self-care practices [22, 33]. The study suggests promoting healthy social events and helping people set and achieve personal health goals. Previous evidence shows that such interventions improve social support in diabetes self-care, improving psychological well-being and self-care practices [70, 71]. A study in Ethiopia found that community members help patients follow recommended meal practices [50].

This study found that the misconception of the community about medication is a significant barrier, and participants resist treatment due to the belief that starting early means a lifetime commitment. This problem affects both community members and patients [72]. A systematic review supports that lack of support from significant others contributes to poor medication adherence [73].

In this study, participants noted that guidance and counseling on self-care practices are inadequate and inconsistent, leading to patients lacking a clear self-care plan. This finding is consistent with a study from Nepal, in which patients received inadequate information and insufficient support due to a lack of counseling at each visit [58]. But evidence shows that strong patient-provider relationships and effective communication are the key to promoting healthy behaviors [74, 75]. Furthermore, healthcare providers must identify patient self-care challenges and actively seek their input during consultations to improve adherence [15].

In this study, participants felt that physicians focus more on blood sugar levels than emotional well-being during stressful times. They also noted that self-care practices, particularly self-

blood glucose monitoring and foot care, are poorly understood and implemented due to inadequate information, guidance, and training. Similarly, a study in southwest Ethiopia found that insufficient information, guidance and training resulted in poor self-care practices among patients [76].

This study found that social gatherings and events lead to ineffective self-care, particularly unhealthy eating, due to limited healthy options and peer pressure. This is similar to studies in Pakistan [41] and Ethiopia [21], where social gatherings and cultural food standards frequently lead to unhealthy food choices for people with diabetes. Offering healthier food options at social gatherings, increasing awareness of diabetes-friendly meals, and fostering peer support can encourage better choices.

Limited access to essential self-care resources, including healthy food, medications, glucometers, educational materials, and exercise facilities, significantly affects the self-management of diabetes. Both patients and healthcare providers identified these shortages as major barriers, highlighting that environmental constraints restrict access to these vital resources. Previous studies similarly highlight that limited access to nutritious diets and exercise facilities in the home is one of the major obstacles to self-care [77]. In countries limited by resources, the inadequacy of essential self-care resources within the community often impedes effective self-management of diabetes self-management [62]

CONCLUSIONS

In the study, diabetic self-management behaviors were ineffective among the participants, because they found it difficult to incorporate the

suggested self-care routines into their daily lives. While most of the patients took their anti-diabetic drugs, many of them experienced difficulties with blood glucose testing, their daily diet, routine exercise, and proper foot care. The study identifies the main challenges in the self-management of diabetics due to barriers at the individual, interpersonal, and community levels, classified into eight subthemes. Key challenges and barriers include inadequate self-care knowledge, socioeconomic constraints, insufficient guidance and support, psychological factors such as low motivation and stress, limited social support, cultural influences, and limited access to resources.

Implications for practice: The study reveals that inadequate diabetes self-management is the result of barriers at the individual, interpersonal, and community levels. To improve self-management, implement culturally tailored education programs, integrate mental health support and stress management, develop motivational strategies, create support groups for psychological barriers, and train healthcare providers to address these issues effectively. The health care provider should listen to patients, encourage clear communication, educate the community about integrated self-care, raise awareness that diabetes affects all socioeconomic groups, and ensure accessible support services.

The study calls for expanding access to low-cost services, strengthening community support through partnerships and local initiatives, advocating for supportive policies, and providing financial counseling to overcome financial barriers to diabetes self-management. It also recommends supporting community programs and advocating for policies to ensure equitable access to essential resources, including healthy

food, medications, glucometers, educational materials, and exercise facilities.

The study suggests implementing family-focused education programs and promoting open communication to enhance family support in the management of diabetes. It also recommends encouraging family meal planning that meets diabetic needs and educating families about balanced and diabetes-friendly meals. Additionally, building support networks, promoting healthy social events, raising awareness of diabetes-friendly meals, and fostering peer support can help improve choices at social gatherings. Finally, helping individuals set and achieve personal health goals can better manage social influences on self-care.

REFERENCES

1. IDF.: IDF Diabetes Atlas 10th Edition, Brussels, Belgium: International Diabetes Federation, 2021 Reports;Online www.diabetesatlas.org. 2021.
2. Koye DN, Melaku YA, Gelaw YA, Zeleke BM, Adane AA, Tegegn HG, Gebreyohannes EA, Erku DA, Tesfay FH, Gesesew HA *et al*: Mapping national, regional and local prevalence of hypertension and diabetes in Ethiopia using geospatial analysis. *BMJ Open* 2022, 12(12):e065318. doi: 065310.061136/bmjopen-062022-065318.
3. FDREMoH: National Strategic Plan for the Prevention And Control Of Major Non-Communicable Diseases, 2013-2017(2020/21-2024/25), Addis Ababa Ethiopia; July 2020. 2020.
4. MoH.: Realizing Universal Health Coverage through Primary Health Care: A Roadmap for Optimizing the Ethiopian Health Extension Program 2020 – 2035. Addis Ababa, Ethiopia: Ministry of Health, 2020. 2020.
5. Tesema AG, Peiris D, Abimbola S, Ajisegiri WS, Narasimhan P, Mulugeta A *et al*: Community health extension workers' training and supervision in Ethiopia: Exploring impact and implementation challenges for non-communicable disease service delivery. *PLOS Glob Public Health* 2022; 2(11): e0001160 <https://doi.org/10.1371/journal.pgph.0001160> 2022.
6. American Diabetes Association: 2. Classification and diagnosis of diabetes: Standards of Medical Care in Diabetes, 2021. *Diabetes Care* 2021, 44(Suppl.1):S152-S133. <https://doi.org/10.2337/dc2321-S2002>.
7. Yang D, Li Y, Han R: Physical Exercise as Therapy for Type 2 Diabetes Mellitus: From Mechanism to Orientation. *Ann Nutr Metab* 2019, 4(4):313-321. doi: 310.1159/000500110.
8. Kumah E, Otchere G, Ankomah SE, Fusheini A, Kokuro C, Aduo AK: Diabetes self-management education interventions in the WHO African Region: A scoping review. *PloS one* 2021, 16(8):e0256123.
9. Ahmad F, Joshi SH: Self-Care Practices and Their Role in the Control of Diabetes: A Narrative Review. *Cureus* 2023, 15(7):e41409.
10. ADA: 2. Classification and Diagnosis of Diabetes: Standards of Medical Care in Diabetes. *Diabetes Care* 2019 ;42(Suppl 1):S13-S28 doi: 10.2337/dc19-S002 2019.
11. Karthik RC, Radhakrishnan A, Vikram A, Arumugam B, Jagadeesh S: Self-care practices among type II diabetics in rural area of Kancheepuram district, Tamil Nadu. *Journal of family medicine and primary care* 2020, 9(6):2912-2918.
12. Maina PM, Pienaar M, Reid M: Self-management practices for preventing complications of type II diabetes mellitus in low and middle-income countries: A scoping

- review. *International journal of nursing studies advances* 2023, 5:100136.
13. Bekele H, Asefa A, Getachew B, Belete AM: Barriers and Strategies to Lifestyle and Dietary Pattern Interventions for Prevention and Management of TYPE-2 Diabetes in Africa, Systematic Review. *J Diabetes Res* 2020, 2020:7948712.doi: 7948710.7941155/7942020/7948712.
 14. Alexandre K, Campbell J, Bugnon M, Henry C, Schaub C, Serex M, Elmers J, Desrichard O, Peytremann-Bridevaux I: Factors influencing diabetes self-management in adults: an umbrella review of systematic reviews. *JBIM Evidence Synthesis* 2021, 19(5):1003-1118.
 15. Sachkouskaya A, Sharshakova T, Kovalevsky D, Rusalenko M, Savasteeva I, Goto A, Yokokawa H, Kumagai A, Takahashi J: Barriers to Prevention and Treatment of Type 2 Diabetes Mellitus Among Outpatients in Belarus. *Frontiers in clinical diabetes and healthcare* 2021, 2:797857.
 16. GBD 2021 Diabetes Collaborators: Global, regional, and national burden of diabetes from 1990 to 2021, with projections of prevalence to 2050: a systematic analysis for the Global Burden of Disease Study 2021. *Lancet* 2023:https://doi.org/10.1016/S0140-6736(1023)01301-01306.
 17. Berhe KK, Mselle LT, Gebru PHB: Barriers to Self-Care Management among Type 2 diabetes Patients in Tigray, Ethiopia: A qualitative Study. . *Research Square*; 2022 DOI: 10.21203/rs3rs-1745404/v1 2022.
 18. Letta S, Aga F, Yadeta TA, B. G, Y D: Barriers to Diabetes Patients' Self-Care Practices in Eastern Ethiopia: A Qualitative Study from the Health Care Providers Perspective. *Diabetes, metabolic syndrome and obesity : targets and therapy* 2021, 14:4335-4349.https://doi.org/4310.2147/DMSO.S335731.
 19. Tewahido D, Berhane Y: Self-Care Practices among Diabetes Patients in Addis Ababa: A Qualitative Study. *PloS one* 2017, 12(1):e0169062.doi:0169010.0161371/journal.pone.0169062.
 20. Letta S, Aga F, Yadeta TA, Geda B, Dessie Y: Barriers to Diabetes Patients' Self-Care Practices in Eastern Ethiopia: A Qualitative Study from the Health Care Providers Perspective. *Diabetes Metab Syndr Obes* 2021, 14:4335-4349.doi: 4310.2147/DMSO.S335731.
 21. Tewahido D, Berhane Y: Self-Care Practices among Diabetes Patients in Addis Ababa: A Qualitative Study. *PloS one* 2017, 12(1):e0169062.
 22. Zewdie S, Moges G, Andargie A, BM. H: Self-Care Practice and Associated Factors Among Patients with Type 2 Diabetes Mellitus at a Referral Hospital in Northern Ethiopia - A Mixed Methods Study. *Diabetes, metabolic syndrome and obesity : targets and therapy* 2022, 15:3081-3091.doi: 3010.2147/DMSO.S373449.
 23. Bogale EK, Wondie H, Debela Y, Fentabil Anagaw T, Worku L, Kebede N: Self-care practice, lived experience of type 1 diabetes mellitus patients at Kemisse General Hospital, North Eastern Ethiopia: Phenomenological study. *SAGE Open Med* 2022, 10:20503121221126862. doi: 20503121221126810.20503121221121177/20503121221126862.
 24. Braun V, Clarke V: Using thematic analysis in psychology. *Qualitative Research in Psychology* 2006, 3(2):77-101.https://doi.org/110.1191/1478088706qp1478088063oa.
 25. CRESWELL JW: Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. 3rd ed. p. cm. ISBN

- 978-1-4129-6556-9 (cloth). ISBN 978-1-4129-6557-. 2014.
26. Chowdhury HA, Joham AE, Kabir A, Rahman A, Ali L, Harrison CL, Billah B: Exploring type 2 diabetes self-management practices in rural Bangladesh: facilitators, barriers and expectations-a qualitative study protocol. *BMJ Open* 2024, 14(5):e081385.
 27. Braun V, Clarke V: Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health* 2019, 11(4):589-597. <https://doi.org/510.1080/2159676X.2152019.1628806>.
 28. Nowell LS, Norris JM, White DE, Moules NJ: Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods* 2017, 16(1):1609406917733847. <https://doi.org/1609406917733810.1609406917731177/1609406917733847>.
 29. Asefa A, Belete AM, Talarge F, Molla D: Self-care practice and its barriers among diabetes patients in North East Ethiopia: A facility-based cross-sectional study. *PLOS Glob Public Health* 2024, 4(2):e0002036.
 30. Ketema DB, Leshargie CT, Kibret GD, Assemie MA, Alamneh AA, Kassa GM, A. A: Level of self-care practice among diabetic patients in Ethiopia: a systematic review and meta-analysis. *BMC public health* 2020, 20(1):309.
 31. Dagnew B, Debalkie DG, Abebaw AD: Systematic Review and Meta-Analysis of Good Self-Care Practice among People Living with Type 2 Diabetes Mellitus in Ethiopia: A National Call to Bolster Lifestyle Changes. *Evid Based Complement Alternat Med* 2021, 2021:8896896. doi: 8896810.8891155/8892021/8896896. .
 32. Letta S, Aga F, Assebe YT, Geda B, Y. D: Self-care practices and correlates among patients with type 2 diabetes in Eastern Ethiopia: A hospital-based cross-sectional study. *SAGE Open Med* 2022, 10:20503121221107337.
 33. Bekele NT, Habtewold EM, Deybasso HA, Mekuria NY: Poor self-care practices and contributing factors among adults with type 2 diabetes in Adama, Ethiopia. *Scientific Reports* 2024, 14(1):13660. doi: 13610.11038/s41598-13024-63524-13668. .
 34. Althubyani AN, Gupta S, Tang CY, Batra M, Puvvada RK, Higgs P, Joisa M, Thomas J: Barriers and Enablers of Diabetes Self-Management Strategies Among Arabic-Speaking Immigrants Living with Type 2 Diabetes in High-Income Western countries- A Systematic Review. *Journal of immigrant and minority health* 2024, 26(4):761-774.
 35. Enyew A, Nigussie K, Mihrete T, Jemal M, kedir S, Alemu E, Mohammed B: Prevalence and associated factors of physical inactivity among adult diabetes mellitus patients in Felege Hiwot Referral Hospital, Bahir Dar, Northwest Ethiopia. *Scientific Reports* 2023, 13(1):118.
 36. Edmealem A, Ademe S, Tegegne B: Level of Physical Activity and Its Associated Factors Among Type II Diabetes Patients in Dessie Referral Hospital, Northeast Ethiopia. *Diabetes Metab Syndr Obes* 2020, 13:4067-4075. doi: 4010.2147/DMSO.S279772.
 37. Ketema DB, Leshargie CT, Kibret GD, Assemie MA, Alamneh AA, Kassa GM, Alebel A: Level of self-care practice among diabetic patients in Ethiopia: a systematic review and meta-analysis. *BMC public health* 2020, 20(1):309.
 38. Tekalegn Y, Solomon D, Sahiledengle B, Beressa G, Desta F, Tolcha F, Rogers HL, Petrucka PP, Mwanri L: Level of physical activity and its associated factors among adults in southeast Ethiopia: a community-based cross-sectional study. *BMJ Open* 2022, 12(11):e063333.
 39. ElSayed NA, Aleppo G, Aroda VR, Bannuru RR, Brown FM, Bruemmer D, Collins BS,

- Hilliard ME, Isaacs D, Johnson EL *et al*: on behalf of the American Diabetes Association 2. Classification and Diagnosis of Diabetes: Standards of Care in Diabetes-2023. *Diabetes care* 2023, 46(Suppl 1):S19-s40.
40. Kanaley JA, Colberg SR, Corcoran MH, Malin SK, Rodriguez NR, Crespo CJ, Kirwan JP, Zierath JR: Exercise/Physical Activity in Individuals with Type 2 Diabetes: A Consensus Statement from the American College of Sports Medicine. *Medicine and science in sports and exercise* 2022, 54(2):353-368.
 41. Bukhsh A, Goh BH, Zimbudzi E, Lo C, Zoungas S, Chan KG, Khan TM: Type 2 Diabetes Patients' Perspectives, Experiences, and Barriers Toward Diabetes-Related Self-Care: A Qualitative Study From Pakistan. *Front Endocrinol (Lausanne)* 2020, 11:534873.
 42. Parada Flores B, Luna-Villouta P, Martínez Salazar C, Flández Valderrama J, Valenzuela Contreras L, Flores-Rivera C, Vargas-Vitoria R: Physical Exercise Methods and Their Effects on Glycemic Control and Body Composition in Adults with Type 2 Diabetes Mellitus (T2DM): A Systematic Review. *European journal of investigation in health, psychology and education* 2023, 13(11):2529-2545.
 43. Shahar J, Hamdy O: Medication and exercise interactions: considering and managing hypoglycemia risk. *Diabetes spectrum : a publication of the American Diabetes Association* 2015, 28(1):64-67.
 44. Gebeyehu AF, Berhane F, Yimer RM: Dietary knowledge and practice and its associated factors among type 2 diabetes patients on follow-up at public hospitals of Dire Dawa, Eastern Ethiopia. 2022, 10:20503121221107478.
 45. Ambaw ML, Gete YK, Abebe SM, Teshome DF, Gonete KA: Recommended dietary practice and associated factors among patients with diabetes at Debre Tabor General Hospital, northwest Ethiopia: institutional-based cross-sectional study design. *BMJ Open* 2021, 11(5):e038668.
 46. Tirfessa D, Abebe M, Darega J, M. A: Dietary practice and associated factors among type 2 diabetic patients attending chronic follow-up in public hospitals, central Ethiopia, 2022. *BMC Health Serv Res* 2023, 23(1):1273.doi: 1210.1186/s12913-12023-10293-12911.
 47. Tan YQ, Tan ZE, Tan YL, How CH: Dietary advice in diabetes mellitus. *Singapore medical journal* 2023, 64(5):326-329.
 48. Jing T, Zhang S, Bai M, Chen Z, Gao S, Li S, Zhang J: Effect of Dietary Approaches on Glycemic Control in Patients with Type 2 Diabetes: A Systematic Review with Network Meta-Analysis of Randomized Trials. 2023, 15(14).
 49. Abate TW, Tareke M, Abate S, Tegenaw A, Birhanu M, Yirga A, Tirfie M, Genanew A, Gedamu H, Ayalew E: Level of dietary adherence and determinants among type 2 diabetes population in Ethiopian: A systemic review with meta-analysis. *PloS one* 2022, 17(10):e0271378.0271310.0271371/journal.pone.0271378.
 50. Simegn W, Mohammed SA, G. M: Adherence to Self - Care Practice Among Type 2 Diabetes Mellitus Patients Using the Theory of Planned Behavior and Health Belief Model at Comprehensive Specialized Hospitals of Amhara Region, Ethiopia: Mixed Method. *Patient Prefer Adherence* 2023, 17:3367-3389.doi: 3310.2147/PPA.S428533.
 51. Bitew ZW, Alemu A, Jember DA, Tadesse E, Getaneh FB, Seid A, Weldeyannes M: Prevalence of Glycemic Control and Factors Associated With Poor Glycemic Control: A Systematic Review and Meta-analysis. *INQUIRY: The Journal of Health Care*

- Organization, Provision, and Financing* 2023, 60:00469580231155716.
52. Anene-Okeke CG, Mosanya AU, Osakwe O: Knowledge, Practice, and Barriers Regarding Self-monitoring of Blood Glucose Among Patients with Type 2 Diabetes Mellitus in Enugu State, Nigeria. *Journal of Diabetology* 2021, 12(3):310-318.
 53. Letta S, Goshu AT, Sertsu A, Nigussie K, Negash A, Yadeta TA, Bulti FA, Geda B, Dessie Y: Diabetes knowledge and foot care practices among type 2 diabetes patients attending the chronic ambulatory care unit of a public health hospital in eastern Ethiopia: a cross-sectional study. *BMJ Open* 2023, 13(11):e070023.
 54. Bekele F, Berhanu D, Sefera B, Babu Y: Diabetic foot self-care practices and its predictors among chronic diabetic mellitus patients of southwestern Ethiopia hospitals: A cross sectional study. *International Journal of Africa Nursing Sciences* 2022, 17:100489.
 55. Sertsu A, Nigussie K, Lami M, Bekele Dechasa D, Abdisa L, Eyeberu A, Dereje J, Mohammed A, Kassa Taffese O, Bete T *et al*: Adherence to diabetic foot care recommendations and associated factors among people with diabetes in Eastern Ethiopia: a multicentre cross-sectional study. *BMJ Open* 2023, 13(10):e074360.074310.071136/bmjopen-072023-074360.
 56. Mekonen EG, Gebeyehu Demssie T: Preventive foot self-care practice and associated factors among diabetic patients attending the university of Gondar comprehensive specialized referral hospital, Northwest Ethiopia, 2021. *BMC Endocr Disord* 2022, 22(1):124.
 57. Durai V, Samya V, Akila G, Shriraam V, Jasmine A, Muthuthandavan AR, Gayathri T, Mahadevan S: Self-care practices and factors influencing self-care among type 2 diabetes mellitus patients in a rural health center in South India. *Journal of education and health promotion* 2021, 10(1):151.
 58. Adhikari M, Devkota HR, Cesuroglu T: Barriers to and facilitators of diabetes self-management practices in Rupandehi, Nepal-multiple stakeholders' perspective. *BMC public health* 2021, 21(1):1269. doi: 1210.1186/s12889-12021-11308-12884.
 59. Mogre V, Johnson NA, Tzelepis F, Hall A, C. P: Barriers to self-care and their association with poor adherence to self-care behaviours in people with type 2 diabetes in Ghana: A cross sectional study. *Obesity Medicine* 2020, 18:100222.
 60. Pamungkas RA, Chamroonsawasdi K, Vatanasomboon P, Charupoonphol P: Barriers to Effective Diabetes Mellitus Self-Management (DMSM) Practice for Glycemic Uncontrolled Type 2 Diabetes Mellitus (T2DM): A Socio Cultural Context of Indonesian Communities in West Sulawesi. *Eur J Investig Health Psychol Educ* 2019, 10(1):250-261.doi: 210.3390/ejihpe10010020.
 61. Oluchina S, Karanja S: Barriers to diabetes self-management in primary care settings – Patient perspectives: Phenomenological design. *International Journal of Africa Nursing Sciences* 2022, 17:100465.
 62. Tuobeniyere J, Mensah GP, Korsah KA: Patient perspective on barriers in type 2 diabetes self-management: A qualitative study. *Nurs Open* 2023, 10(10):7003-7013.doi: 7010.1002/nop7002.1956.
 63. Shah AK, Mishra SA, Ravichandran P: Exploration of barriers to self-care practices among diabetic patients attending chronic disease clinic in an urban slum. *International Journal of Noncommunicable Diseases* 2021, 6(4):193-198.doi: 110.4103/jncd.jncd_4140_4121.
 64. M. H: Exploring the barriers and facilitators of dietary self-care for type 2 diabetes: a

- qualitative study in Ghana. *Health Promotion Perspectives* 2019, 9:223 - 232.
65. Ansari RM, Harris M, Hosseinzadeh H, Zwar N: Healthcare Professionals' Perspectives of Patients' Experiences of the Self-Management of Type 2 Diabetes in the Rural Areas of Pakistan: A Qualitative Analysis. *Int J Environ Res Public Health* 2021, 18(18):9869. doi: 9810.3390/ijerph18189869.
 66. Woodward A, Walters K, Davies N, Nimmons D, Protheroe J, Chew-Graham CA, Stevenson F, Armstrong M: Barriers and facilitators of self-management of diabetes amongst people experiencing socioeconomic deprivation: A systematic review and qualitative synthesis. *Health Expect* 2024, 27(3):e14070. doi: 14010.11111/hex.14070.
 67. Gupta SK, Lakshmi PVM, Chakrapani V, Rastogi A, M K: Understanding the diabetes self-care behaviour in rural areas: Perspective of patients with type 2 diabetes mellitus and healthcare professionals. *PLoS One* 2024, 19(2):e0297132. doi: 0297110.0291371/journal.pone.0297132.
 68. Eseadi C, Amedu AN, Ilechukwu LC, Ngwu MO, Ossai OV: Accessibility and utilization of healthcare services among diabetic patients: Is diabetes a poor man's ailment? *World journal of diabetes* 2023, 14(10):1493-1501.
 69. Atun R, Davies JI, Gale EAM, Bärnighausen T, Beran D, Kengne AP, Levitt NS, Mangugu FW, Nyirenda MJ, Ogle GD *et al*: Diabetes in sub-Saharan Africa: from clinical care to health policy. *The lancet Diabetes & endocrinology* 2017, 5(8):622-667.
 70. Al-Dwaikat TN, Ali AM, Khatatbeh H: Self-Management Social Support in Type 2 Diabetes Mellitus: A Concept Analysis. *Nursing Forum* 2023, 2023(1):1753982. <https://doi.org/1753910.1751155/1752023/1753982>.
 71. Hasan AA, Ismail A, H. N: The Influence of Social Support on Self-Care Behavior among T2DM Patients. *SAGE open nursing* 2024, 10:23779608231219137.
 72. Arshad I, Mohsin S, Iftikhar S, Kazmi T, Nagi LF: Barriers to the early initiation of Insulin therapy among diabetic patients coming to diabetic clinics of tertiary care hospitals. *Pakistan journal of medical sciences* 2019, 35(1):39-44.
 73. Kvarnström K, Westerholm A, Airaksinen M, Liira H: Factors Contributing to Medication Adherence in Patients with a Chronic Condition: A Scoping Review of Qualitative Research. *Pharmaceutics* 2021, 13(7):1100. doi: 1110.3390/pharmaceutics13071100.
 74. Świątoniowska-Lonc N, Polański J, Tański W, Jankowska-Polańska B: Impact of satisfaction with physician–patient communication on self-care and adherence in patients with hypertension: cross-sectional study. *BMC health services research* 2020, 20(1):1046.
 75. Rashidi A, Whitehead L, Kaistha P: Nurses' perceptions of factors influencing treatment engagement among patients with cardiovascular diseases: a systematic review. *BMC nursing* 2021, 20(1):251.
 76. Emire MS, Zewudie BT, Tarekegn TT, GebreEyesus FA, Amlak BT, Mengist ST, Terefe TF, Mewahegn AA: Self-care practice and its associated factors among diabetic patients attending public hospitals in Gurage zone southwest, Ethiopia. *PloS one* 2022, 17(9):e0271680.
 77. Liu Y, Jiang J, You W, Gong D, Ma X, Wu M, F. L: Exploring facilitators and barriers to self-management engagement of Chinese people with type 2 diabetes mellitus and poor blood glucose control: a descriptive qualitative study. *BMC Endocrine Disorders* 2022, 22(1):294. doi: 210.1186/s12902-12022-01214-12900.