

# KNOWLEDGE AND SELF-CARE AMONG DIABETICS IN PRIMARY HEALTH CARE

CONHECIMENTOS E AUTOCUIDADO DE DIABÉTICOS NA ATENÇÃO PRIMÁRIA À SAÚDE

CONOCIMIENTOS Y AUTOCUIDADO DE LOS DIABÉTICOS EN LA ATENCIÓN PRIMARIA DE SALUD

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## ABSTRACT

**Objective:** To understand the knowledge and self-care practices of people with type 2 diabetes mellitus attending Primary Health Care. **Methods:** A qualitative, exploratory, and descriptive study conducted using the focus group technique. Data collection occurred in April 2025, and the analysis was based on the Discourse of the Collective Subject (DCS), differentiating collective discourse from individual statements. The study was approved by the Research Ethics Committee (Opinion No. 7,440,662). **Results:** Ten patients participated, with a mean age of  $60.6 \pm 13.85$  years, the majority female, with diabetes for at least six months. Participants reported dietary changes and medication adherence but faced financial difficulties, low education levels, and lack of motivation for physical activity. Educational groups were highlighted as an important support for self-care. **Conclusions:** Strengthening educational actions and overcoming structural barriers are essential strategies to promote self-care and effective management of type 2 diabetes.

**Keywords:** Type 2 Diabetes Mellitus; Self-Care; Primary Health Care.

## RESUMO

**Objetivo:** Compreender conhecimentos e práticas de autocuidado de pessoas com diabetes mellitus tipo 2 atendidas na Atenção Primária à Saúde. **Métodos:** Pesquisa qualitativa, exploratória e descritiva, realizada por meio da técnica de grupo focal. A coleta ocorreu em abril de 2025 e a análise foi baseada no Discurso do Sujeito Coletivo, diferenciando o discurso coletivo das falas individuais. Estudo aprovado pelo Comitê de Ética em Pesquisa Parecer nº 7.440.662. **Resultados:** Participaram 10 pacientes com idade média de  $60,6 \pm 13,85$  anos, a maioria do sexo feminino, com diabetes há pelo menos seis meses. Adotaram mudanças alimentares e uso de medicação, mas enfrentam dificuldades financeiras, baixa escolaridade e desmotivação para atividades físicas. Grupos educativos foram destacados como apoio importante ao autocuidado. **Considerações finais:** O fortalecimento das ações educativas e a superação de barreiras estruturais são estratégias essenciais para promover o autocuidado e controle eficaz do diabetes tipo 2.

**Descritores:** Diabetes Mellitus Tipo 2; Autocuidado; Atenção Primária à Saúde.

## RESUMEN

**Objetivo:** Comprender los conocimientos y las prácticas de autocuidado de personas con diabetes mellitus tipo 2 atendidas en Atención Primaria de Salud. **Métodos:** Estudio cualitativo, exploratorio y descriptivo, realizado mediante la técnica de grupo focal. La recolección de datos se realizó en abril de 2025, y el análisis se basó en el Discurso del Sujeto Colectivo (DSC), diferenciando el discurso colectivo de las intervenciones individuales. El estudio fue aprobado por el Comité de Ética en Investigación (Dictamen nº 7.440.662). **Resultados:** Participaron 10 pacientes con edad media de  $60,6 \pm 13,85$  años, mayoritariamente mujeres, con diabetes desde hace al menos seis meses. Adoptaron cambios alimentarios y adherencia a la medicación, pero enfrentan dificultades económicas, bajo nivel educativo y falta de motivación para la actividad física. Se destacaron los grupos educativos como un apoyo importante para el autocuidado. **Conclusiones:** Fortalecer las acciones educativas y superar las barreras estructurales son estrategias esenciales para promover el autocuidado y el control eficaz de la diabetes tipo 2.

**Descritores:** Diabetes Mellitus Tipo 2; Autocuidado; Atención Primaria de Salud.

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## INTRODUCTION

Diabetes mellitus (DM) is a chronic disease and one of the main public health problems worldwide. In 2021, approximately 537 million adults were living with diabetes, a number that could reach 783 million by 2045<sup>1</sup>. In Brazil, the scenario is also alarming: with approximately 15.7 million cases in 2021, the country ranks sixth in the world in the number of diabetics<sup>2</sup>, registering an average of 29.5 deaths per 100,000 inhabitants between 2000 and 2021<sup>3</sup>.

The Brazilian Diabetes Society (SBD) classifies diabetes mellitus (DM) based on its etiopathogenesis: type 1 (DM1), generally autoimmune; type 2 (DM2), related to insulin resistance and insufficient production; gestational diabetes (GDM); and other rarer types, such as monogenic diabetes mellitus (MODY) and mitochondrial diabetes<sup>4</sup>. There is also latent autoimmune diabetes mellitus (LADA), which progresses slowly and is often diagnosed late<sup>5</sup>.

In the state of Ceará, between 2000 and 2020, mortality from diabetes mellitus (DM) increased by 6.3%. In 2020, a total of 2,483 deaths were reported, 21 of which occurred in the municipality of Barbalha, corresponding to a rate of 34.3 per 100,000 inhabitants<sup>6</sup>. In the same year, an increase in Potential Years of Life Lost (PYLL) due to DM was observed, rising from 5.4% in 2019 to 7.1% in 2020, which may be associated with the strain placed on the healthcare system during the pandemic<sup>6</sup>.

Diabetes mellitus (DM), characterized by a deficiency in insulin production or action, leads to chronic hyperglycemia<sup>7</sup>. Insulin, secreted by the pancreas, is essential for glucose metabolism, which should be maintained between 70 and 110 mg/dL in healthy individuals<sup>8</sup>. Without proper treatment, DM can cause serious complications such as cardiovascular disease, retinopathy, nephropathy, neuropathies, sexual dysfunction, and gestational complications<sup>8</sup>.

Primary Health Care (PHC) is strategic for the control of type 2 diabetes mellitus (DM2), as it allows for continuous and integrated patient monitoring, in addition to promoting educational actions for the prevention of complications<sup>9,10</sup>. However, challenges within PHC are numerous, as shown by a study conducted in Itajaí, which identified difficulties in glycemic control related to misinformation about diet, misconceptions about the disease, sedentary behavior, and lack of connection with the health team<sup>11</sup>.

An integrative review that aimed to identify the reasons for non-adherence to non-pharmacological treatment in patients with type 2 diabetes mellitus (DM2) in eight Brazilian studies highlighted the following barriers: low education level, income, psychological factors, and difficulties in incorporating healthy habits into daily routines<sup>12</sup>. Therefore, the implementation of educational interventions, encouragement of a balanced diet, and regular attendance at consultations are fundamental for the effective control of DM2.

The relevance of this research lies in understanding the level of knowledge and self-care practices among patients with type 2 diabetes mellitus (DM2) managed by a primary health care team in Barbalha, Ceará. This can reveal gaps that hinder glycemic

control and contribute to the development of more effective health education strategies and the prevention of complications.

From a personal perspective, this research is motivated by the author's own experience, having personally witnessed the impacts of type 2 diabetes. Her father, diagnosed at age 38, faced serious complications that culminated in an acute myocardial infarction (AMI), chronic kidney disease, and death at age 61 after years on dialysis. Furthermore, her son was diagnosed with type 1 diabetes at age nine, which reinforced her commitment to promoting self-care and health education.

Professionally, these experiences reinforce the importance of understanding the challenges faced by patients in their daily lives and enable the researcher to propose patient-centered strategies aligned with local needs. Scientifically, the study contributes to the production of knowledge about type 2 diabetes in specific regional contexts, such as the Cariri region of Ceará, and to the enhancement of public health practices.

Given the facts presented, the following question arises: What knowledge and self-care practices do patients with type 2 diabetes, assisted by a primary health care unit in an urban neighborhood of Barbalha, possess to ensure adequate control of their condition?

Hence, the general objective of this study was to understand the knowledge and self-care practices of patients with type 2 diabetes mellitus receiving care from a Primary Health Care Team in the municipality of Barbalha, Ceará.

## METHODS

This is an exploratory and descriptive study with a qualitative approach, based on the Collective Subject Discourse (CSD) technique, which relies on three main elements: key expressions (KE), central ideas (CI), and anchorages – the implicit values present in the discourses<sup>13</sup>.

Participants were intentionally selected from patients with type 2 diabetes (DM2) registered at the Vila Santo Antônio II Primary Health Care Unit (UBS) in the municipality of Barbalha, Ceará. This UBS was chosen because it had the highest number of DM2 patients in the municipality ( $n = 254$ ) and carried out ongoing educational activities. Invitations were distributed by Community Health Agents (ACS) in April 2025.

The initial meeting was held at the Santo Antônio Social Assistance Reference Center (CRAS), located next to the Primary Health Care Unit (UBS), and included ten participants. Eligible participants were patients diagnosed with type 2 diabetes for at least six months, aged 18 years or older, with an active registration at the UBS, who signed the Informed Consent Form (ICF) and the authorization form for audio recording.

Data collection was conducted using the focus group technique, which enables collective discussion on a common theme<sup>14,15</sup>. The session was facilitated by the researcher, with the support of a physical education professional, and held in a private room at the Santo Antônio Social Assistance Reference Center (CRAS) on April 8, 2025. An icebreaker activity (“My Relationship with Diabetes”) was used to foster a welcoming atmosphere. The focus group lasted 55 minutes and concluded upon reach-

ing data saturation. The semi-structured guide included 15 guiding questions addressing knowledge about the disease, self-care practices, and challenges faced, in addition to a sociodemographic questionnaire.

It is important to highlight that the methodology involved a single focus group meeting, which constitutes a significant limitation, as it may restrict thematic saturation and the depth of discussions. In qualitative research, multiple sessions are recommended to promote triangulation and a more comprehensive understanding of the phenomenon under study. This limitation is acknowledged and discussed in the Discussion section of this article.

The data were audio and video recorded and subsequently transcribed in full. The process of constructing the Collective Subject Discourses (CSD) followed the steps proposed by Lefèvre and Lefèvre<sup>16</sup> and was operationalized as follows, in order to explicitly differentiate the CSD from the mere transcription of individual statements: (1) a floating reading of the transcripts was performed independently by two researchers to become familiar with the material; (2) initial identification and coding of key expressions (KE) – literal excerpts representative of the content – were carried out using coding sheets; (3) synthesis of these KEs into central ideas (CI) through consensus meetings among the researchers; (4) identification of anchorages (values and beliefs) when present; (5) integration of the CIs into synthesis discourses (CSD) written in the first person singular, reflecting the collective voice constructed from multiple individual accounts; (6) an internal audit session with a third researcher to verify consistency among KE, CI, and CSD; and (7) maintenance of a research diary and an archive of analytical decisions (audit trail) to ensure traceability and transparency throughout the analytical process. The analysis also considered nonverbal observations and notes on participants' reactions.

The study was approved by the Research Ethics Committee of the Ceará School of Public Health (approval n° 7.440.662; CAAE n° 86186125.8.0000.5037), in accordance with Resolutions n° 466/12 and n° 510/16<sup>17,18</sup>. Participant anonymity was ensured through the collective presentation of the discourses, in line with the principles of the CSD technique.

## RESULTS

The results of this study are organized into two sections: the sociodemographic profile of the participants and the analysis of their discourses, grouped into three thematic categories according to the Collective Subject Discourse (CSD) technique: representations of type 2 diabetes, self-care practices, and barriers to treatment.

### *SOCIODEMOGRAPHIC PROFILE OF THE PARTICIPANTS*

Ten patients with type 2 diabetes participated in the study, aged between 29 and 78 years, with a mean age of  $60.6 \pm 13.85$  years. Most participants were women (9),

self-identified as mixed race (9), had low educational attainment (incomplete primary education), and a monthly income of up to one minimum wage; all reported having a religious affiliation. The majority were retired, and the duration of diagnosis ranged from 1 to 40 years. Three participants reported occasional alcohol consumption, and none were smokers.

### REPRESENTATIONS OF TYPE 2 DIABETES MELLITUS

Participants understand type 2 diabetes (T2D) as a chronic, dangerous, and silent disease associated with genetics and diet. They reported symptoms such as excessive thirst, dizziness, weakness, increased urinary frequency, blurred vision, and malaise, which were key factors in seeking a diagnosis. Glycemic variations were described in detail, associated with specific sensations such as tremors, fainting, fatigue, and uncontrolled hunger, and they recognized the importance of laboratory tests. The following is a CSD (Collective Subject Discourse) summarizing the participants' perceptions (Table 1):

**Table 1** – CSD: Representations of Type 2 Diabetes Mellitus, focus group, Barbalha UBS, Ceará, April 2025

*"Diabetes is a silent, treacherous disease; a person slowly deteriorates without even noticing. [...] It's dangerous, it can cause blindness, deformities, kidney and heart problems, and even death if we don't take care of ourselves. I felt very thirsty, dizzy, a burning sensation in my body, a constant need to urinate, and unexplained fatigue. Sometimes my blood sugar is high, and I feel sluggish, with headaches and no patience. When it's low, I get tremors, weakness, feel like fainting, and want to eat everything. Sometimes I even go temporarily blind. I think diabetes can come from family, diet, or even other illnesses, like COVID. We learn to live with it because there's no cure, only control. It's about diet, exercise, medication, and faith. I get blood tests, glucose tests, sometimes eye exams, and I know it's important to do these tests to make sure everything is okay. You always have to be vigilant".*

**Source:** Survey Data (2025)

The representations reveal how individuals construct their understanding of type 2 diabetes, often influenced by popular knowledge, personal experiences, and partial medical guidance. This highlights the need for more systematic educational interventions in primary health care to promote patient empowerment and self-care based on consistent and accessible information.

### SELF-CARE PRACTICES AND HABITS

Healthy eating, regular use of medications, and laboratory tests are seen as essential for managing type 2 diabetes. Some participants reported making dietary changes and using sweeteners. Although physical activity is valued, adherence is challenging due to physical limitations, lack of time, or low motivation.

Foot care is acknowledged but not always practiced systematically. The educational group at the primary health care unit was mentioned as a positive space for learning, support, and encouragement of self-care (Table 2).

**Table 2 – DSC:** Self-care practices and habits in type 2 Diabetes Mellitus, Focus group conducted at the Vila Santo Antônio II Primary Health Care Unit, Barbalha (CE), April 2025

*“After I found out I have diabetes, I started taking better care of myself. I changed my diet, stopped eating so many sugary foods, and started using sweeteners. I try to eat at regular times, avoid fried foods and white flour. I also take my medication properly, every day, just as the doctor told me. Sometimes I go for walks when I feel more motivated or when someone invites me. But it’s not always easy; some days I feel discouraged or in pain. The doctors talk a lot about taking care of your feet, checking for wounds, and applying cream, and I try to do that. I participate in the health group here at the unit, where we ask questions, learn recipes, and feel more supported. I see that if we don’t take care of ourselves, diabetes takes over, so we have to be disciplined and do our part.”*

**Source:** Survey Data (2025)

In general, participants indicate that self-care requires discipline, guidance, and support, and they perceive that controlling the disease depends mainly on their own engagement. Their statements reflect their efforts to follow treatment and their awareness of the importance of self-care, even in the face of everyday challenges.

### *TREATMENT BARRIERS AND DIFFICULTIES*

Financial difficulties stand out as the main barrier: medication shortages at the primary health care unit, tests that require travel, and the high cost of healthy food. Physical pain, a heavy burden of household chores, low educational levels, and difficulty understanding medical instructions were also mentioned. Limited access to healthcare, particularly delays in scheduling appointments and tests, reinforces feelings of neglect (Table 3).

**Table 3 – DSC:** Barriers and difficulties in type 2 diabetes treatment, Focus group conducted at the Vila Santo Antônio II Primary Health Care Unit, Barbalha (CE), April 2025

*“The biggest difficulty is money. Some medicines you can’t find at the UBS, so you have to buy them, but even then, you can’t always afford them because things are so expensive. And then there’s food. Eating properly is costly; you can’t buy everything you need. Another thing is that I have pain in my*

*legs, I get tired, and I don't feel like walking every day. Sometimes it's also a matter of time – there's so much to do at home. At the clinic, the doctor talks really fast, and we end up with doubts, not understanding everything. Scheduling an appointment is hard, it takes forever, and then you just keep putting it off. Missing exams delays everything. It's tough; we try, but taking care of ourselves isn't easy”.*

**Source:** Survey Data (2025)

These barriers, together with the complexity of treatment, indicate that managing type 2 diabetes depends not solely on the patient's individual motivation, but also on structural and social conditions. This underscores the importance of intersectoral, supportive, and continuous interventions within the primary health care context, with due consideration of social determinants of health and a focus on equity in care.

## DISCUSSION

This study highlighted the representations, practices, and challenges faced by individuals with type 2 diabetes mellitus (T2DM) receiving care from a primary health care team in Barbalha, Ceará. Analysis of their statements revealed a shared understanding of the disease, the self-care strategies they adopt, and the barriers that hinder treatment effectiveness.

Thus, participants recognize type 2 diabetes (T2D) as a chronic, silent, and potentially serious condition associated with complications such as blindness, amputations, kidney and heart problems. This perception is consistent with studies indicating that a lack of knowledge about diabetes contributes to the progression of the disease and its complications<sup>19</sup>.

Despite acknowledging the seriousness of the disease, participants express confidence in their ability to manage it through proper care, including diet, medication, and medical follow-up. This perspective is supported by Pires, Oliveira, and Candido<sup>20</sup>, who emphasize the importance of health education for self-care and effective management of type 2 diabetes.

In addition, the identified self-care practices include adopting a healthier diet, adhering to medication regimens, and undergoing periodic laboratory tests. However, a qualitative study involving both health professionals and the patients they serve, all within primary health care, found that dietary aspects are perceived as the most challenging by the participants. While professionals advocate flexible dietary practices, patients often interpret the guidelines as strict prohibitions<sup>21</sup>.

Nevertheless, regular physical activity and systematic foot care are less frequent, highlighting gaps in self-care. A cross-sectional, descriptive study conducted in the Family Health Units (ESF) of the municipality of São Francisco de Assis, in the interior of the state of Rio Grande do Sul, with 220 people with diabetes, also reported low adherence to physical exercise among patients with type 2 diabetes due to factors such as lack of time, motivation, and physical limitations<sup>22</sup>.

It should also be noted that using only one focus group may have limited the scope and saturation of the data collected, restricting the exploration of deeper aspects of the participants' experiences. This limitation is acknowledged and considered in the interpretation of the findings, and future research is recommended to conduct multiple sessions or complementary methods, such as individual semi-structured interviews and/or additional focus groups, to further explore and triangulate the evidence.

It is worth emphasizing that interventions promoting physical activity, such as supervised walking programs, contribute to glycemic control and quality of life in individuals with type 2 diabetes<sup>23</sup>.

Participation in educational groups has been identified as a facilitator of self-care, promoting learning and reinforcing the connection with healthcare services. This aligns with the supported self-care approach, which emphasizes the importance of healthcare team support in fostering patient empowerment<sup>24</sup>.

In light of the above, the main barriers identified include financial difficulties, physical limitations, low educational attainment, and limited access to healthcare services. These challenges compromise adherence to treatment and the proper management of the disease. The literature indicates that factors such as socioeconomic status, resource availability, and the organization of healthcare services are critical determinants of successful self-care<sup>25</sup>.

Furthermore, communication between healthcare professionals and patients has been identified as a challenge, with reports indicating difficulties in understanding medical instructions due to the technical language employed. Enhancing communication through a more accessible and patient-centered approach is essential to promote understanding and adherence to treatment.

Methodological clarity regarding the process of constructing DSCs, as detailed in the Methods section (identification of EC, formulation of IC, identification of anchors, reconstruction into DSCs, and internal audit), enhances the validity and transparency of the qualitative analysis, clearly distinguishing the collective discourse from a mere transcription of individual statements.

Considering the foregoing, a study conducted to examine multidisciplinary scientific production from 1999 to 2009 on educational practices for individuals with diabetes found that people with lower educational attainment experience greater difficulty in managing self-care and understanding therapeutic recommendations, which negatively affects the control of type 2 diabetes<sup>26</sup>.

Moreover, an integrative literature review encompassing eight studies concluded that patients diagnosed with type 2 diabetes (T2DM) experience a compromised quality of life. A notable finding highlighted by the studies is the disparity between men and women, with women experiencing a particularly pronounced reduction in quality of life. This phenomenon was quantified using the EQ-5D-5L scale. These results underscore the importance of differentiated and personalized approaches for both sexes in the management and support of patients with T2DM<sup>27</sup>.

It is essential to provide healthcare professionals with training in clear and empathetic communication, which facilitates patient understanding and adherence to the instructions received. The integration of supportive technologies,

such as monitoring applications, can also enhance self-care and enable remote patient follow-up.

## FINAL CONSIDERATIONS

This study demonstrates the significance of patient knowledge about type 2 diabetes mellitus (DM2) within primary health care, highlighting the need for continuous educational strategies tailored to local contexts. Identifying and understanding the barriers faced by patients is essential for designing effective interventions that promote self-care and proper disease management.

It is recommended that public health policies prioritize the provision of adequate resources for glycemic monitoring, ensuring the availability of essential medications and the conduct of laboratory tests. Furthermore, investing in the training of healthcare teams is crucial to enable them to provide clear and accessible guidance, taking into account the specific needs of each patient.

The promotion of supportive social environments, such as educational groups, and the inclusion of family in the care process are strategies that can enhance self-care and improve clinical outcomes. Integrating intersectoral actions involving health, social assistance, and education is essential for addressing social inequalities that directly affect the management of type 2 diabetes.

Finally, it is essential that primary health care serve as a privileged space for receiving these perceptions and for implementing dialogical educational strategies that respect individuals' experiences and unique characteristics, while providing consistent, accessible, and contextually relevant information. In this way, self-care can be promoted, and the quality of life of people with diabetes can be improved, particularly in contexts of heightened vulnerability.

## STUDY LIMITATIONS

The small number of participants limits the generalizability of the findings to other populations with type 2 diabetes. The restricted geographic scope – a single primary health care unit in the municipality of Barbalha – reduces the applicability of the results to other regions with differing socioeconomic and cultural contexts. The use of only one focus group session represents a methodological limitation that may have prevented full thematic saturation; future studies are recommended to conduct multiple focus groups or to supplement them with individual interviews to strengthen the analysis. The predominance of female participants may have influenced the discourses and perceptions of self-care, as gender can affect health practices. Additionally, there may be selection bias, given that the focus group was conducted in a setting linked to a

health service, potentially leading participants to report more favorable self-care behaviors.

#### DECLARATION OF CONFLICT OF INTEREST

The authors declare that there are no financial, personal, or institutional conflicts of interest that could have influenced the conduct or the outcomes of this study.

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