







ORIGINAL ARTICLE

PERCEPTION OF DIABETIC USERS ABOUT SELF-CARE FOR THEIR FEET: A QUALITATIVE ANALYSIS

HIGHLIGHTS

1. Health education is essential for self-care of the feet.
2. The bond between professional and user favors effective treatment.
3. Audiovisual aids make it easier to guide users with diabetes.

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ABSTRACT

Objective: To assess the perception of users with type 2 diabetes *mellitus* (DM2) regarding self-care of their feet using educational videos. **Method:** This qualitative study was carried out with users with DM2 treated in primary health care in Amazonas, Brazil. The participants watched two videos on foot care and answered six questions about their perceptions. The data was analyzed using ATLAS.ti 9[®] software. **Results:** Three categories were created: 1) 'previous knowledge' with the subcategories 'fragility in professional guidance' and 'videos as tools for remembering'; category 2) 'assimilation of language and audiovisual format'; and category 3) 'possibilities of impact on self-care'. **Conclusion:** A lack of necessary information on diabetic foot care was observed in remote communities. Audiovisual technologies for health education are essential to inform and promote self-care.

KEYWORDS: Self-Care; Diabetic Foot; Diabetes *Mellitus*, Type 2; Audiovisual Aids; Primary Health Care.

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INTRODUCTION

Diabetic foot complications are a public health challenge, negatively impacting quality of life¹ and increasing morbidity, mortality, and management costs². Education about diabetic foot care can effectively prevent complications from Type 2 Diabetes *Mellitus* (DM2) because it increases the user's knowledge about self-care and preventive measures³⁻⁴. In self-care, the key is a deep understanding of the behaviors that positively affect better management and avoid complications⁵.

Interventions or procedures aimed at continuing education help to form a broader vision of the approach to care and guidance on correct self-care⁶. New approaches, strategies, and resources help professionals and users support each other in improving diabetes management and control⁷. Sound and visual resources for assimilating health habits have shown more benefits than traditional methods, especially when compared to verbal or written guidance^{4,8}.

Video technology helps transmit essential information to users wherever they are, making health education more accessible^{7,9}. Technological tools are of great value as an alternative to disseminating necessary information and improving health promotion in the Unified Health System (SUS). They favor understanding procedures, especially when they are developed, taking into account sociodemographic factors and the context in which the user is inserted, ensuring that the content produced is assimilated best by the target audience^{3,8}.

Assessing users' receptiveness to the technologies used is fundamental to the effectiveness of the action since the level of interest and curiosity aroused by the technology directly influences the user's willingness to correctly reproduce the practices learned¹⁰. By considering the users' point of view, it is possible not only to open doors to adopting new ways of promoting care but also to identify facilitators and barriers to health promotion and management^{2,6}.

The practice of self-care for users with DM2 must be constant, especially in remote/rural communities, where there are still gaps in health care and the reinforcement of basic guidelines. Research focused on users' perceptions opens the door to a more humanized approach that can redirect health management towards the community. This approach could fill the gaps in Primary Health Care (PHC)¹¹⁻¹². Given the above, the study set out to assess the perception of using educational videos for self-care of the feet of users with DM2 in Primary Care in the state of Amazonas.

METHOD

Qualitative research is based on analyzing semi-structured interviews with users with DM2 seen in PHC in the state of Amazonas. This study is part of the Health in Primary Care for the Amazon Population – SAPPA project. The SAPPA study was designed to describe the reality of DM2 care offered by PHC in the interior of Amazonas¹³.

Two videos were produced by students from the Physiotherapy Faculty of the Federal University of Amazonas (UFAM) as a way of giving back to the users who took part in the SAPPA survey. The first video clarified the main doubts about basic diabetic foot care by means of a poll: "True or False?" The second video covered the subject of diabetes and daily foot care in a didactic and understandable way (Figure 1).

Figure 1 - Main screen of the videos. Manaus, AM, Brazil, 2022.



Source: The authors (2022).

Participants were selected for convenience¹⁴. The researchers scheduled the interviews by telephone. The sample consisted of users diagnosed with DM2 who had taken part in the SAPPA data collection.

The study's inclusion criteria were users diagnosed with DM2 for at least six months and assisted by the PHC in Coari, Amazonas. The study's exclusion criteria were cognitive, visual, or hearing impairments that prevented viewing and understanding the videos. Researchers from the team assessed the application of the inclusion and exclusion criteria since they already knew the participating users from previous stages of the study.

One of the five researchers visited the participants in their homes. Data collection took place between February 18 and March 18, 2022. During the interviews, the participants were close to a relative or acquaintance. The questions were structured to understand the users' perception of foot care before (two questions) and after (four questions) watching the videos, as shown in Chart 1.

Chart 1 - Structured questions. Manaus, AM, Brazil, 2022.

Questions before the videos are shown

- 1) Do you know how to prevent foot complications caused by diabetes? If so, what are they?
- 2) Have you received any advice/information about preventing complications with your feet that can be caused by diabetes? Who gave you this information?

Questions after the videos

- 3) Did you already know the guidelines presented in the video? What are the guidelines?
- 4) You found the advice in the video easier to understand than receiving it from a doctor/health professional. Why?
- 5) After watching the video, what new information did you learn about caring for your feet?
- 6) After watching the video, are you confident you can take care of your feet to prevent complications from diabetes? Which ones?

Source: The authors (2022).

To analyze the data, we chose the strategy of categorical thematic analysis in three stages (pre-analysis, exploration of the material, and treatment of the results), carried out with the support of the ATLAS.ti 9[®] software. In the pre-analysis phase, the audio-stored interviews were listened to and transcribed; the files were then imported into ATLAS.ti 9[®] software and prepared for coding. In the material exploration stage, the interviews were read repeatedly, and the excerpts considered most relevant to the study's objective were highlighted and grouped into nuclei of meaning, forming the categories of analysis. In the third and final stage of the analysis, the treatment of the results and the findings highlighted by the researchers were compared with the existing literature. New inferences were made in the discussion of the data. The transcripts were not returned to the participants, as previously mentioned during the reading of the Consent Form.

This study was approved by the Research Ethics Committee of the Universidade Federal do Amazonas (4.994.196). To maintain the participants' anonymity, we chose to describe the results using the combination of the letter "P" followed by the numbering corresponding to each interview.

RESULTS

Twenty users (seven men and 13 women) with DM2 participated in the study. A questionnaire was used to identify each user's sociodemographic characteristics, such as gender, age, color, level of education, work activity, family income, marital status, whether or not they live alone, and the time since they were diagnosed with diabetes (Table 1).

Table 1 - Sociodemographic characteristics of the participants. Manaus, AM, Brazil, 2023.

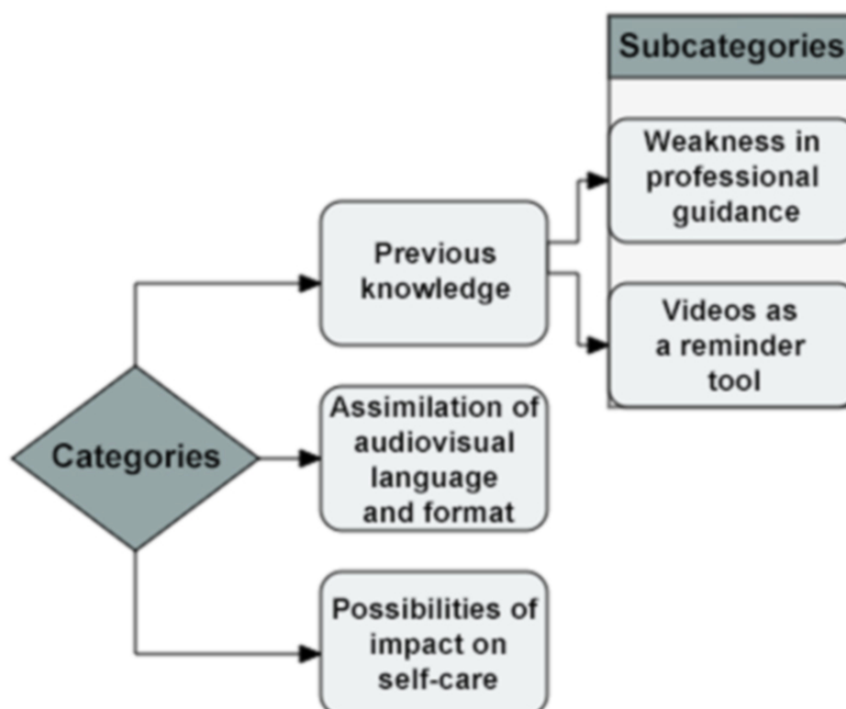
Features	Men n(%)	Women n(%)	Total n(%)
Sex	7(35)	13(65)	20(100)
Age			
50-60 years	-	2(15.38)	2(10)
61-70 years	6(85.71)	6(46.15)	12(60)
71-80 years	1(14.28)	5(38.46)	6(30)
Color			
Brown	6(85.71)	11(84.61)	17(85)
White	1(14.28)	2(15.38)	3(15)
Level of education			
Not literate	1(14.28)	5(38.46)	6(30)
Elementary school incomplete	5(71.42)	4(30.76)	9(45)
Complete elementary school	-	-	-
Secondary school incomplete	1(14.28)	1(7.69)	2(10)
Completed high school		1(7.69)	1(5)
Higher education completed		2(15.38)	2(10)
Work activity			
Unemployed	1(14.28)	1(7.69)	2(10)
Employee	1(14.28)	1(7.69)	2(10)
Retired	4(57.14)	11(84.61)	15(75)

Home provider	1(14.28)		
Monthly family income			
No fixed salary		1(7.69)	1(5)
Below 1 minimum wage	1(14.28)		1(5)
Between 1 and 2 minimum wages	6(85.71)	12(92.30)	18(90)
Marital status			
Married	4(57.14)	8(61.53)	12(60)
Single	2(28.57)	2(15.38)	4(20)
Widowed	1(14.28)	3(23.07)	4(20)
Do you live alone?			
Yes	1(14.28)	2(15.38)	3(15)
No	6(85.71)	11(84.61)	17(85)
Time to diagnosis of diabetes			
2-9 years	4(57.14)	7(53.84)	11(55)
10-20 years	2(28.57)	3(23.07)	5(25)
21-30 years	1(14.28)	3(23.07)	4(20)

Source: The authors (2022).

The findings were grouped by nuclei of meaning, resulting in three categories and two subcategories organized as follows: category 1) 'previous knowledge' with the subcategories 'weakness in professional guidance' and 'videos as a reminder'; category 2) 'assimilation of language and audiovisual format'; and category 3) 'possibilities of impact on self-care' (Figure 2). The first category (prior knowledge) stood out, since of the 132 excerpts coded in all the interviews, 50 were related to "prior knowledge", 46 to "assimilation of the audiovisual language and format" and 26 to "possibilities of impact on self-care".

Figure 2 - Categories and subcategories. Manaus, AM, Brazil, 2022.



Source: The authors (2022).

Prior knowledge

This first category of analysis focused mainly on the findings relating to the first three questions of the data collection script, which dealt with users' experiences with information acquired throughout their health-disease process, regardless of how this knowledge was acquired.

Weakness in professional guidance

The interviews revealed that some of the participants reported having received little or no information on how to prevent complications that can occur to the feet as a result of diabetes. In cases where prior knowledge on the subject had been assimilated, the guidance came from family members or professionals who are not the user's primary healthcare reference, according to the following statements:

They never said anything to me (P4)

If I knew, they wouldn't be numb (P8)

No one ever told me. Sometimes, when I go out, I think I'm going alone; it feels like my legs are shrinking. I want to walk, but I can't. I've already had a crisis. (P14)

Only my daughter's because the doctor around here, the technicians, and the health staff don't give any advice. The nurse doesn't even come here. It was my daughter who gave me the information; she's a public health nutritionist. (P6)

[...] I acquired all this myself; no one passed it on to me. I learned from myself (P8).

Videos as a reminder tool

After watching the videos, some of the interviewees reported having received some of these guidelines previously, which indicates the possibility that the material served as a stimulus to recapture previous knowledge acquired about self-care of the feet:

I received it (...), I'm a bit forgetful about things, this doctor gave it to me, and I've written down what I can and can't eat. (P2)

I've already received advice about medicines, shampoo, creams (P3)

Yes, I got it from the doctor, didn't I? To avoid suffering an accident, a blow, a pain like that, also about food, I can't eat sweets, anything, flour. I had a list so I knew what to eat and what not to eat about diabetes. It's calmed down a bit these days because I've avoided many things. (P19)

Assimilation of audiovisual language and format

In this second analytical category, data emerged about how easy it was to assimilate the content presented in the videos about their language and audiovisual format. We also looked at the interviewees' perceptions of the information received in the videos compared to the traditional format normally received during consultations with health professionals.

I understood everything in the video. (P15)

The video is much better because we can see the whole orientation (P16)

Yes, it's easier to understand; the part I don't know I can see in the video. (P19)

After the presentation of the materials, it was noted that the participants were able to reproduce different pieces of information that they had just seen, defining them as learning as a result of exploring the audiovisual resource:

The way I watched it now was different. Wash your feet as the video says, wipe between your toes, apply cream, and always watch to make sure no sores appear. And do not walk barefoot so as not to hurt your feet, which is something I'm terrified of (P6).

I learned a lot, even the things I was already doing. I wipe well, cut my nails, dry my feet myself, and check between my toes. I do it all (P8).

I learned that you must look at your feet early in the morning to see if they're purple... (P13)

Yes, yes, I've learned to dry well, put on shoes, and look at things in the morning. And it's more difficult in warm water (P13).

Absolutely! That video was wonderful. It opens our minds more, and we can even pass it on to colleagues who have the same illness (P7).

Possible impact on self-care

This category analyzed the participants' perceptions of their willingness to incorporate new foot care measures after watching the videos presented. In addition, the interviewees recognized the importance of self-care in the presence of DM2 and the impacts caused by the disease on their lives and daily tasks:

I certainly be more careful now than I already was. I have to take care of my feet so that I don't get a wound, so that I don't harm myself, because I could even lose my foot if I don't take care of it, of course. I'm taking a risk. God forbid! I'm scared to death! (P6)

Here at home, I don't go down to the backyard. You can ask my mother if something falls in the yard, I don't go down because she's afraid I'll hurt my feet. (P8)

If you cut yourself, right? If there are any wounds, they'll heal badly. You've got to be careful; if you're going to walk through the woods, you've got to wear good boots, that's what I always do when I go to the countryside. (P10)

I already did; now I'll do more. I didn't do it like that, soaking it with lukewarm water because nobody ever told me, did they? Yes, I wouldn't. (P18)

Absolutely! I'll do everything I can for my feet... (P8)

It was great! I love it! The main thing to watch out for is not eating all the things: fat, sugar, or all the types of food we can eat. (P7)

DISCUSSION

Chronic diseases, such as DM2, cause life changes, resulting in the need to adapt and acquire knowledge throughout the health-disease process². The lack of health education on foot care means that the information acquired through “prior knowledge” alone is not enough to guarantee the necessary care in an effective and preventive manner. This highlights the importance of health teams constantly monitoring users living with chronic diseases¹⁵⁻¹⁶.

Health education is essential for developing autonomy in individual and collective care. By building a bond between the professional and the user, actions can be taken to promote and protect health, prevent diseases, and rehabilitate the well-being that characterizes PHC¹⁷⁻¹⁸. However, the subcategory “Weakness in career guidance” presents a barrier to this process. The majority of users reported not having received any instruction on the prevention of diabetic foot complications. When they did receive guidance, it came from personal experience or through a family member or someone close to them.

Participants also reported a lack of visits, professional follow-up, and a lack of professional-user dialog, which discouraged them from seeking care^{5,16}. In perspectives on self-care addressed to users with DM2 in a city in the countryside, the lack of basic guidelines for foot care given by community health agents and the lack of more holistic and humanized medical care² were also weaknesses pointed out. In another qualitative study with users assisted by a multidisciplinary care network focused on health promotion and prevention, the importance of the health team in caring for the user, the family, and the community was highlighted. In addition, the bond and closeness formed between users and professionals had a positive and beneficial effect on the health practices implemented, encouraging attendance and participation in the activities offered to the population¹⁹.

The incorporation of self-care practices occurs mainly through an approach based on welcoming and producing a bond between professional and user in an encounter in which one acts on the other, based on sensitivity in the attitude of stopping to listen²⁰. Care that considers each user’s uniqueness and adapts as much as possible to their needs provides quality care for health professionals and thus satisfactory results^{2,21}.

When professionals allow only science and technical knowledge to guide their conduct, they are prone to being insensitive to important factors beyond the complaint that led the user to seek care. These professionals must consider customs, culture, values, economic situation, and particularities at each meeting²¹. Humanized care, which understands each individual as unique and considers their social and economic conditions, as well as their values and fears, among other factors, allows the user to feel heard and encourages them to include the instructions they have received in their care routine¹⁸.

Even if the instructions seem complex, the team should explain them well in a dialog based on safety, respect, and welcome. This drives the user’s motivation to adhere to new forms of self-care¹⁸, not excluding their empirical knowledge acquired from the experience of adapting to DM2²¹. The health team needs to be sensitive and committed to building a relationship of dialog and health education to provide the right care and prevent the worsening of DM2. When users are well assisted and involved in treating their illness to the point of recognizing their role in producing self-care, they achieve better health results¹⁶.

The second subcategory, “Videos as a reminder tool,” presents reports from users who, after watching the content, remembered some of the information they had already received. However, these instructions are still insufficient and incomplete, and in the speeches highlighted, it is possible to perceive only a mechanized process of transferring information, characteristic of poor health care¹⁷. Health work is increasingly based on a rich relationship of empathy and bonding between professional and user. This relationship facilitates the

construction of well-structured knowledge for proper guidance and, consequently, less need for using “hard” technologies²⁰.

The reports found in the category “Assimilation of language and audiovisual format” showed a good reception and understanding of the content of the videos when compared to receiving the same information through a traditional medical consultation. This result reinforces the idea of the theorists above. It shows that communication failures that weaken the professional-user relationship lead to a greater need to use modern alternatives that facilitate the transmission of basic guidelines, such as audiovisual resources.

The assimilation and learning of the content presented in the videos were remarkable, as all the participants verbally reproduced most of the guidelines. The adoption of technological resources that encourage the practice of self-care and facilitate individual understanding, taking into account the learning pace of each user, makes it increasingly possible to reproduce and improve the care information learned^{7,22}. Digital technologies are increasingly present in people’s lives and potentially support and reinforce the health practices developed by PHC. In addition to educational videos such as those used in this study, there is also the use of apps, among other technologies, where information can be accessible and induce reflection-action, producing effective self-care habits²³.

A qualitative study using an educational video on self-care for users and their families showed positive results regarding education, favoring self-confidence, motivation and learning⁷. In another study involving adults and elderly people with hypertension, the use of a mobile application to help manage the disease was well received. Most participants reported feeling more assisted and informed about their illness, found it easy to use the app, and felt encouraged to monitor their chronic illness²⁴.

The “Possibilities of impact on self-care” are related to the videos’ implications in the participants’ lives, such as recognizing the importance of self-care in DM2 and the role they play in controlling the disease^{18,25}. Given the accessibility and ease of understanding that the audiovisuals provided to the participants, the incorporation of self-care practices became possible. They understood what habits they should adhere to in their routine, what care they should improve, and what practices they should avoid for their quality of life, awakening motivation and a greater commitment to their health⁷.

Limitations of the study: The survey was carried out with users from Coari and did not include users from other municipalities who also participated in the SAPPA survey. The data collection was carried out in a specific region of the country. It cannot, therefore, be considered representative of other users with DM2 treated in PHC services in other regions. However, we would like to point out that as the methodology and interview script were structured, this study can serve as a basis for similar research in other locations.

CONCLUSION

Health education is essential to inform and help prevent foot complications caused by DM2. The user and the community must incorporate health protection, prevention, and promotion actions based on PHC through more humanized care and the establishment of bonds between professional and user, considering each person’s uniqueness, prior knowledge, and perspectives. Users’ perceptions showed that technology and audiovisual methods can facilitate learning and the transmission of correct self-care instructions. This knowledge can benefit users’ lives by improving and transforming how they care for themselves, making them more motivated and committed to their health condition.

The strengths of this study are that it demonstrates the benefits of using audiovisual resources to manage and plan the transmission of guidelines on self-care and health, which can strengthen and transform PHC in the community, and that the audiovisuals offered were well received and were perceived as stimulating changes in attitudes and interest in taking correct care of DM2.

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