Original Article

Perceptions and Experiences of Foot Care among People with Type 2 Diabetes Mellitus: A Qualitative Study

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ABSTRACT

OBJECTIVE: To explore the experiences of Type 2 Diabetes Mellitus patients in long-term foot care management.

METHODOLOGY: This qualitative approach study was based on phenomenology at Meuraxa Hospital in Banda Aceh, Indonesia. Data was collected from August - September, 2025. Semi-structured interviews with seven patients were conducted. This design of foot care management was based on their direct experiences in managing foot care while living with Type 2 Diabetes Mellitus (T2DM). The data were analyzed using inductive content analysis and cross-checking across different sources.

RESULTS: The results of this study produced three themes related to the experiences of people with diabetes in performing foot care at home, namely lack of foot examination, foot activity (walking), and lack of understanding of foot wound complications.

CONCLUSION: Based on these findings, the development of an effective foot care model in this study emphasizes a comprehensive approach to adequate foot care management to help people with diabetes prevent diabetic foot ulcers.

KEYWORDS: Type 2 Diabetes Mellitus, Foot Care Management, Phenomenology, Patient Experience, Education, Quality of Life

INTRODUCTION

Type 2 diabetes mellitus (DM) is a global health problem with a prevalence rate that continues to increase every year, according to the International Diabetes Federation (IDF)[1]. The number of DM patients worldwide is expected to continue to grow, with the majority of cases originating in developing countries. Indonesia ranks high among Southeast Asian countries of the number of DM patients. One of the most feared chronic complications in type 2 DM patients is diabetic foot ulcers, which can lead to amputation and significantly reduce the patient's quality of life[2].

DMT2 is also a chronic disease, often referred to as a lifelong disease, which can cause serious complications that can be dangerous and lead to death. Long-term complications of DMT2 can cause increased morbidity, blindness, kidney failure, and an overall decline in quality of life in individuals with diabetes. Therefore, control efforts by DMT2 patients are essential[3].

Worldwide, the number of people with type 2 diabetes mellitus (T2DM) is expected to increase to 415 million by 2035. By then, T2DM can lead to serious long-term health problems, such as heart disease, kidney problems, and foot ulcers. Globally, approximately 6.4% of people with diabetes develop foot ulcers, and approximately 1% ultimately require lower-limb amputation. In Indonesia, the impact of foot ulcers is quite severe.[4]

The World Health Organization says that taking care of yourself is key to detecting diabetes early and avoiding serious complications. The International Working Group on the Diabetic Foot says it's really important for people at high risk to wear the right kind of shoes to help prevent wounds. The WHO's global guidelines on diabetes also stress the need to teach people about proper footwear and to regularly check their feet for signs of nerve damage, poor blood flow, and skin issues. Foot care is an important aspect of self-management for people with diabetes, as simple preventive measures such as maintaining hygiene, regularly checking the condition of the feet, and wearing appropriate footwear have been shown to reduce the risk of wounds. However, in practice, many patients still do not pay sufficient attention to foot care, either due to limited knowledge, a lack of concern, or social and cultural barriers[5].

Right now, people aren't doing enough to take care of their feet on their own. This includes regularly checking their feet, walking without shoes, and wearing shoes that support foot health. There are still many difficulties in following these foot care steps, especially in choosing shoes that work well to prevent injuries from the start. A qualitative study examining special shoes to prevent recurrent foot injuries shows how important it is to protect the feet from pressure,

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especially when people are very active. The study focused primarily on educational interventions or medical evaluations aimed of preventing diabetic foot complications. In contrast, studies on patients' perceptions and subjective experiences during foot care remain limited[6,7].

A qualitative research approach is relevant for exploring in greater depth the perceptions, meanings, and life experiences of type 2 DM patients regarding foot care[8]. The results of this study are expected to provide a basis for the development of educational strategies, nursing interventions, and technology-based innovations that are more suited to patients' needs. This study aims to explore the experiences and perceptions of T2DM patients regarding foot care that has been carried out without foot complications[9].

METHODOLOGY

Study Design

This study is qualitative in nature, with a descriptive-phenomenological design that draws on qualitative research principles at Meuraxa Hospital in Banda Aceh. This design was chosen to explore the experiences and perspectives of people with T2DM regarding foot care management, based on their direct experiences managing foot care while living with T2DM[10]. This study aims to explore the experiences of T2DM patients in managing themselves and preventing complications. Data collection techniques used semi-structured interviews with 7 patients. Data were analyzed using inductive content analysis and triangulation of informant triangulation.

Population and Sample

Participant selection for this study used purposive sampling with the following sample criteria: (1) Type II diabetes mellitus patients without gangrene complications, (2) Able to communicate verbally well, (3) Aged between 40-60 years, (4) Patients undergoing routine treatment at the Endocrine Polyclinic, Meuraxa Regional Hospital, Banda Aceh City, (5) Had understood this study and provided written consent from the participant or informed consent. Interviews were conducted face-to-face for 30 to 45 minutes and recorded using a voice recorder or audio recorder, and field notes were taken to record events that occurred during the interview process, such as the atmosphere of the room, expressions, and facial expressions of the participants[10]

Eligible patients were those who met these conditions: (i) they had type 2 diabetes but did not have complications from diabetic ulcers, (ii) they could communicate clearly, and (iii) they were willing to take part in the study. People with other health problems or those who had been hospitalized were not allowed to participate in the study[11]. The interviews were conducted in a comfortable, easy-to-talk-in place. Before starting the interviews, the research team explained the study and what would happen. Each interview was recorded and then written down exactly as it was said. While conducting the interviews, the researchers listened carefully and used the interview questions flexibly. They stayed objective and neutral, and they paid attention to the patients' body language, like their facial expressions and how they moved their eyes[10]

Instrument

The research tool in this study used an interview guide developed from a literature review of the foot care standards of the International Working Group on the Diabetic Foot. The researchers conducted in-depth interviews in the form of semi-structured interviews on the theme of foot care, focusing on knowledge of foot care, foot examinations, physical activity and foot exercises, and foot care and cleaning at home, to obtain further information[12]. Details and notes of the interview activities are recorded using a voice or audio recorder, and necessary information is recorded using writing instruments, also known as field notes[13].

This study used a direct semi-structured interview method. Guided by "Foot Care Management," the initial interview framework was developed based on the research objectives and literature review. The first author conducted pre-interviews with two patients who met the inclusion criteria. After discussing the issues that arose during the pre-interviews, two clinical nursing experts helped revise the interview framework[14].

All participants were interviewed in person by the first researcher at the Endocrine Clinic of Meuraxa General Hospital. First, the first author explained to the participants the purpose of the study, the principle of confidentiality, and the requirement to record the interview. Participants signed a written consent form that included demographic information and details about their illness. After a brief exchange of greetings, the first author began the conversation with the participant, following the interview outline. Important details and nonverbal communication during the interview were recorded in field notes. We transcribed the audio recordings within 24 hours after each interview.

Data Analysis

Data were transcribed and double-checked within 24 hours after each interview. Researchers used Colaizzi's data analysis method[11]. The interviews were conducted in Indonesian and Acehnese. However, for reporting purposes, the research team translated quotes and excerpts from the transcripts into Indonesian. The translations were then double-checked to ensure accuracy in line with the original meaning. During the analysis, in accordance with the principle of triangulation, the researchers independently organized and analyzed the data. Data coding was done manually without using qualitative analysis software. The first author performed the initial coding, then two other researchers with experience in qualitative Research conducted an independent review of the codes, the meanings formulated, and the theme clusters. Disagreements were discussed within the team until consensus was reached, thereby

increasing the reliability and credibility of the findings.

Ethical Statement

Research ethics must be taken into account by an ethical reviewer of the Research Ethics Committee of Meuraxa Regional Hospital, Banda Aceh City, with Information on Research Ethics Eligibility ("Ethical Clearance") code No.070/046/Etik-Penelitian/2025.

RESULTS

Based on the results of interviews conducted by researchers at the Endocrinology Clinic of Meuraxa Regional General Hospital in Banda Aceh, Indonesia, from August – September, 2025, with patients with Type II Diabetes Mellitus. Interview results with Type II DM patients. This study involved 7 patients with type 2 diabetes (DMT2), consisting of 2 men and 5 women (**Table I**). To maintain participant privacy, participants were assigned codes P1-P7. Participants in this study were aged 40-60 years. The duration of the interviews ranged from 30 to 45 minutes. This study identified three themes, namely foot examination, foot care and cleaning, and foot exercises. These themes and their sub-themes together form a framework for foot care management in DMT2 patients.

Table I: Characteristics of respondents (n=82)

Characteristics	f	%
Age	35-45 years old	3(42.8)
	45-55 years old	3(42.8)
	55-65 years old	1(14.4)
Gender	Male	3(57.5)
	Female	4(42.5)
Last Education	Junior high school	1(14.2)
	Senior high school	1(14.2)
	College	5(71.6)
Insulin	Yes	2(28.5)
	No	5(71.5)
Longtime Suffering From DM (years)	1 - 5 years	1(14.5)
	6 - 10 years	4(57.4)
	11 - 15 years	2(28.1)

The results show that the steps for analyzing patients' perceptions of foot care management are classified into three main themes: 1) Foot examination, 2) Foot cleaning and care, and 3) Foot exercises.

Theme 1: Foot Examination as an Early Detection Effort

Most participants recognized the importance of regularly checking the condition of their feet, but this practice was not consistently followed. Foot checks were generally performed only when patients experienced symptoms such as pain, wounds, or tingling. Some participants admitted they did not know that foot checks needed to be done every day[15].

"I check them when they hurt or are sore, otherwise I rarely look at them because they seem fine" (P3).

Factors that influence foot examination behavior include limited knowledge, lack of education from health workers, and lack of concern for elderly patients. Some patients also rely on family members to help examine their feet, especially those who are obese or have limited mobility.

"In my case, my child usually helps me check my feet, because I don't really care," (P6).

These findings indicate that "foot examination has not become a daily habit," even though patients understand the risks. More intensive education and family support are important factors in improving compliance with foot examinations[4].

Theme 2: Foot Cleaning and Care as a Self-Care Ritual

Some patients view foot cleaning and care as part of personal hygiene, not as a medical measure to prevent complications. Patients usually wash their feet when bathing or after going outside, but do not pay attention to details such as drying between the toes or checking the skin after washing[16].

"I usually just wash my feet with regular soap. But I didn't know that I had to dry them thoroughly or use lotion," (P1).

A small number of participants already practice the correct method, such as using warm water, mild soap, and checking for wounds after washing. However, some use water that is too hot or scrub too hard because they consider it part of maintaining hygiene[17].

"I like to use slightly hot water to clean my feet, but sometimes my skin becomes dry," (P4).

In addition, "nail care" and "footwear selection" are also important. Many patients still cut their nails too short or use unsterilized scissors. The use of thin sandals or going barefoot at home is also still common, mainly due to personal habits or comfort. These findings indicate the need for education and specific SOPs on "proper foot cleaning methods," including drying, skin care, nail cutting, and safe footwear selection[18].

Theme 3: Foot Exercises as a Form of Preventive Activity

Some participants recognize diabetic foot exercises as beneficial for improving blood circulation and preventing tingling, but this practice is still rarely done regularly. Some patients admit that they were taught foot exercises during hospital or health centre education, but did not continue them at home because they forgot the movements, felt lazy, or had no one to accompany them[19].

"I was taught foot exercises during a check-up at the health centre, but I forgot how to do them. So now I never do them anymore," (P2).

Others believe that daily activities such as walking around the house or working are sufficient to replace foot exercises. However, foot exercises have specific purposes that differ from general activities[20].

"I think that walking in the morning is already considered foot exercises, so there is no need for

anything else," (P7).

The main supporting factors for foot exercises are "personal motivation," "family support," and "assistance from health workers." Patients who receive regular supervision or encouragement from their families tend to be more consistent in doing the exercises. These findings confirm that the success of foot exercises depends heavily on "knowledge, motivation, and social support" and needs to be backed up by interesting and accessible educational media[21].

DISCUSSION

This study examines how type 2 diabetes patients perceive and experience caring of their feet at the Endocrine Clinic at Meuraxa Regional Hospital in Banda Aceh. It aims to understand how these patients manage foot care to prevent serious complications related to diabetes. Using a phenomenological approach, the study identified three main areas in which patients care of their feet: checking and monitoring their feet, cleaning and caring for them, and engaging in exercises or physical activities for their feet. These areas are connected and show how much patients know, are aware of, and take part in their own foot care[22].

The first theme shows that although some patients recognize the importance of foot examinations, the practice remains incidental, performed only when complaints arise. This finding aligns with previous studies indicating that people with T2DM often do not make foot examinations a routine part of their preventive care. Foot examinations are not yet performed systematically and consistently. Some patients observe their feet only when they experience discomfort or specific complaints, while daily routine examinations have not become a habit[23].

These findings indicate a gap between general knowledge about diabetic foot risk and the implementation of proper foot examination practices. This condition may be influenced by low risk perception, limited specific education on foot examination techniques, and sensory disturbances due to peripheral neuropathy, which make patients less sensitive to changes in their feet[24]. The second theme explains that many patients view foot cleaning as part of daily hygiene rather than a step to prevent diabetes complications[25]. This results in many people not paying attention to the proper way to clean their feet, such as drying the spaces between their toes, checking for wounds after washing, or choosing safe shoes[13]. This situation indicates a misperception about the importance of foot care. Some patients also use very hot water or scrub too hard, which can increase the risk of injury due to peripheral neuropathy. This phenomenon shows patients' limited understanding of the dangers of diabetic feet[26].

For individuals with DM, maintaining foot health is crucial because foot problems are the most common issue faced and can lead to treatment, amputation, or lifelong disability in patients[27]. Foot care is one of the non-pharmacological management strategies for patients with diabetes mellitus. Foot care involves simple measures such as examining the feet, maintaining foot hygiene, applying moisturizer, trimming toenails, and preventing foot injuries. The latter of which can be achieved by performing foot exercises in one movement and repeating them 10 times. The benefits of providing foot care to patients include: improving comfort and relaxation, reducing stress levels, preventing contractures, strengthening muscles, and improving blood circulation, thereby making blood flow to the heart and throughout the body more efficient, especially in the feet[28]. This is where the pumping action of the foot muscles counteracts the pressure of blood flow from the base to the tip. The goal of this treatment is to reduce mortality and morbidity rates[29].

Foot care and maintenance for people with DM2 are very important to prevent foot injuries. The following is detailed foot care education for all people with ulcers, peripheral neuropathy, and peripheral arterial disease (PAD)[24]. Do not walk barefoot, including on sand and in water, Check your feet every day and report any peeling, redness, or wounds to your doctor, Check your footwear for foreign objects before wearing it, Always keep your feet clean and dry, and apply moisturizing cream to dry skin, Trim your nails regularly, Dry your feet and between your toes regularly after bathing, Wear cotton socks that do not cause creases at the tips of your toes, If there are calluses or corns, trim them regularly. If there are foot deformities, use specially made footwear; shoes should not be too tight or too loose, and high heels should not be worn[30].

The third theme shows that foot exercises for people with diabetes are considered beneficial, but are rarely done regularly. Patients who have been trained at health facilities often do not continue the exercises because they forget the movements or feel they do not have time. Low motivation and a lack of support are the main reasons why foot exercises are not continued at home[31].

Foot exercises also have an important psychological aspect. There are many benefits to this activity, one of which is increased foot sensitivity and comfort[19]. Foot exercises for diabetes are a simple type of exercise that can be done by people with diabetes who experience reduced sensitivity in their feet. This activity helps improve blood flow to the feet.

CONCLUSION

This phenomenological study provides an in-depth understanding of the perceptions and experiences of Type 2 DM patients regarding foot care, identified through three main themes: foot examination and observation, independent foot care and cleaning, and exercise or physical activity for the feet. Overall, these three themes show that the foot care experience for people with type 2 diabetes is still incomplete and

poorly connected. Foot checks, cleaning, and exercises are usually done on their own, without a clear understanding of why they're important or how they help. Because of this, nurses play an important role in helping patients take better care of themselves. They can do this by providing ongoing education, guiding patients in their care, and encouraging them to stay motivated.

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AUTHOR CONTRIBUTION

Mulfianda R: conceptualized the study, collected and analyzed the data, and drafted the manuscript.
Marlina: contributed to methodology, supervision, and critical revision.
Abidin TF: supported validation, and analyzed the data.
Shuanda R: Conceptualization the study, Validation, and Supervision. All authors reviewed and approved the final manuscript.

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