



# EXPLORING FAMILY EMPOWERMENT EXPERIENCES IN THE PREVENTION OF DIABETIC FOOT ULCERS: A THEMATIC ANALYSIS STUDY

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## ABSTRACT

**Background:** This study aimed to explore in depth the experiences of families in caring for relatives with Diabetes Mellitus (DM), particularly in preventing Diabetic Foot Ulcers (DFU). Family involvement plays a crucial role in successful diabetes management, especially in developing countries such as Indonesia, where formal healthcare supervision is often limited. However, family empowerment in diabetes care remains largely practical and lacks a structured and comprehensive approach. **Methods:** This study employed a qualitative design using thematic analysis. Data were collected through in-depth interviews with six family caregivers of patients with type 2 diabetes, selected via purposive sampling. The interview guide explored family understanding of DM, caregiving roles, encountered challenges, sources of health information, educational needs, and self-efficacy in preventing complications. Data were analyzed using Braun and Clarke's six-phase thematic analysis framework. **Results:** Six major themes emerged: (1) limited family understanding of DM as merely a "sugar disease"; (2) practical caregiving roles in daily management; (3) major challenges related to patients' low adherence and intra-family disagreements; (4) reliance on community health centers and social media as primary information sources; (5) strong needs for interactive, visual, and digital-based education; and (6) positive family self-efficacy in preventing complications despite requiring sustained professional support. **Conclusion:** Family empowerment in diabetes care remains fragmented and behavior-oriented. A participatory, continuous, and digitally supported health education approach is essential to strengthen family capacity for effective DFU prevention.

**Keywords:** Family Empowerment, Diabetes Mellitus, Diabetic Foot Ulcer, Thematic Analysis, E-learning, Self-efficacy

## BACKGROUND

Diabetes Mellitus (DM) remains one of the major chronic diseases worldwide, with complications such as Diabetic Foot Ulcers (DFU) contributing significantly to morbidity, mortality, and healthcare costs (International Diabetes Federation, 2023). Family involvement has long been recognized as a critical determinant of successful self-management in diabetes care, particularly in low- and middle-income countries where professional monitoring is often limited (World Health Organization, 2022). In Indonesia, however, family empowerment in diabetes care frequently remains confined to practical support, such as reminding medication schedules or preparing meals, without adequate structured knowledge or sustained educational reinforcement.

Previous studies have emphasized that family support enhances glycemic control; however, few have explored the experiential dimensions of family empowerment, particularly in the context of DFU prevention (López-Bastida et al., 2020; Al-Asadi et al., 2021). Understanding these lived experiences is essential for developing culturally appropriate e-learning-based empowerment models aligned with participatory and community-based health promotion principles (Polit & Beck, 2021; Creswell & Poth, 2018).

Therefore, this study aims to explore the experiences, challenges, and needs of families in caring for relatives with DM to prevent DFU complications.

## METHOD

The study employed a qualitative research design using a thematic analysis approach. Data were collected through in-depth interviews with six family caregivers of patients with type 2 diabetes mellitus, selected through purposive sampling. The interview guide encompassed key aspects such as understanding of diabetes, the family's role in patient care, challenges encountered, sources of health information, educational needs, and self-efficacy in preventing complications. Data were

analyzed using the six-phase framework of thematic analysis proposed by Braun and Clarke (2006) to identify meaningful patterns emerging from the participants' lived experiences.

Face-to-face interviews were conducted at participants' homes using a semi-structured interview guide designed to explore their understanding of DM, family caregiving roles, challenges encountered, sources of health information, and beliefs regarding self-efficacy in preventing complications. Each interview lasted approximately 45–60 minutes and was audio-recorded with participants' consent.

All interviews were transcribed verbatim and analyzed using Braun and Clarke's (2006) six-phase framework for thematic analysis: (1) familiarization with the data, (2) generation of initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report. Data trustworthiness was ensured through member checking, peer debriefing, and maintaining an audit trail, as recommended by Lincoln and Guba (1985).

## RESULTS

Through the process of thematic analysis, six major themes emerged that illustrate the dynamics of family experiences in caring for relatives with Diabetes Mellitus (DM). These themes reflect the multidimensional nature of family involvement in diabetes management and prevention of complications (See figure 1).

### Main Themes

#### Understanding of Diabetes Mellitus

Families recognize DM as a condition of "high blood sugar" or "sweet urine," yet their awareness of the risks and complications, particularly Diabetic Foot Ulcers (DFU), remains limited.

#### Family Roles in Daily Care

Family participation primarily involves practical support, including dietary and meal preparation, medication reminders, accompanying patients to medical appointments, and assisting with physical activities.

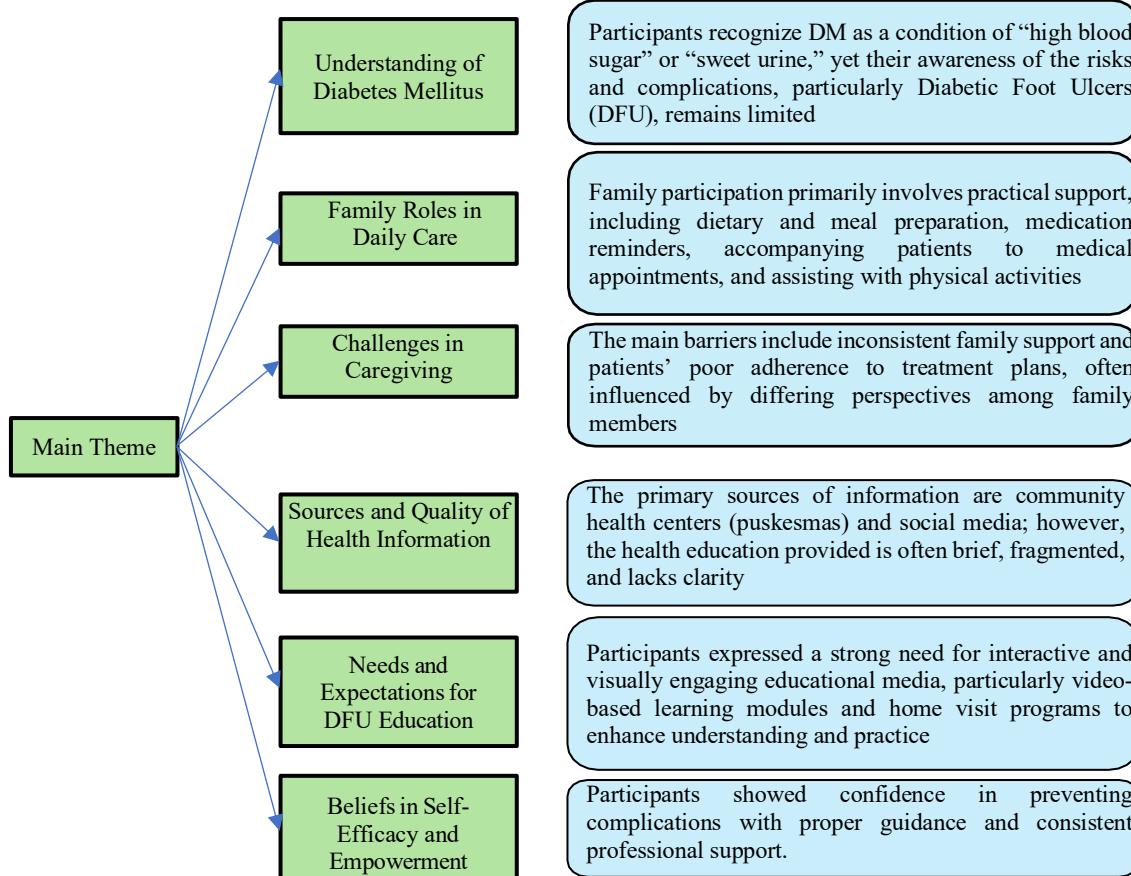


Figure 1. Thematic Map of Family Empowerment Experiences in the Prevention of Diabetic Foot Ulcers

## Challenges in Caregiving

The main barriers include inconsistent family support and patients' poor adherence to treatment plans, often influenced by differing perspectives among family members.

## Sources and Quality of Health Information

The primary sources of information are community health centers (*puskesmas*) and social media; however, the health education provided is often brief, fragmented, and lacks clarity.

## Needs and Expectations for DFU Education

Participants expressed a strong need for interactive and visually engaging educational media, particularly video-based learning modules and home visit programs to enhance understanding and practice.

## Beliefs in Self-Efficacy and Empowerment

Families articulated optimism and confidence in their ability to prevent complications, provided that they receive appropriate guidance and continuous support from healthcare professionals.

These findings indicate that family empowerment remains predominantly practical rather than reflective, highlighting the need for more structured and sustained educational reinforcement.

## DISCUSSION

This study highlights that family empowerment in diabetes care remains fragmented and predominantly behavior-oriented. The thematic findings reflect limited health literacy and an overreliance on informal sources of health information. Practical caregiving must evolve into reflective empowerment through the integration of structured and participatory education (Braun & Clarke, 2006; Creswell & Poth, 2018).

Digital and e-learning-based interventions offer a promising approach to strengthening family empowerment by providing continuous and easily accessible education (Dineen-Griffin et al., 2022; Zhang et al., 2022). This aligns with the Health Belief Model (HBM), which suggests that empowerment can enhance perceived benefits and self-efficacy while reducing perceived barriers (Bandura, 1997). Family education modules that combine psychosocial support, digital literacy, and interactive counseling may help bridge gaps in self-management of diabetes (Saleh et al., 2021; Rahmawati et al., 2023). Therefore, integrating e-learning-based family

empowerment within community-oriented

primary care could contribute to sustainable improvements in DFU prevention and chronic disease management.

The findings of this study indicate that family empowerment in caring for individuals with Diabetes Mellitus (DM) to prevent Diabetic Foot Ulcers (DFU) remains at a practical level, not yet progressing to reflective awareness. This condition can be understood through the interaction of three foundational theories underpinning this research: Self-Efficacy Theory (Bandura, 1997), Self-Care Deficit Nursing Theory (Orem, 2001), and Family Empowerment Theory (Gibson, 1991).

According to Bandura (1997), health behavior is strongly influenced by self-efficacy an individual's belief in their capability to perform the actions required to achieve desired outcomes. The results of this study support this concept, as families demonstrated relatively high levels of confidence in their ability to prevent complications through medication adherence, diet regulation, and compliance with healthcare advice. However, this self-efficacy remains situational rather than stable and reflective, due to limited educational reinforcement and the absence of a continuous learning environment.

Orem's (2001) Self-Care Deficit Nursing Theory emphasizes that self-care is a fundamental human function, and nurses play a vital role in assisting individuals or families toward independence. Within this study's context, families have not yet fully reached the level of *self-care agency* described by Orem. They perform care-related tasks—such as reminding medication intake or managing meals—but lack scientific understanding and awareness of the consequences of their actions. Thus, Orem's theory is only partially supported, as family autonomy in health decision-making remains limited.

Meanwhile, Gibson's (1991) Family Empowerment Theory conceptualizes the family as a dynamic social system capable of growth through enhanced control, competence, and decision-making ability. In this study, the dimensions of *control* and *participation* were evident, yet *competence* and *critical reflection* were underdeveloped. Gibson emphasized that genuine empowerment involves not merely performing tasks but transforming knowledge into conscious, value-driven actions that lead to long-term behavioral change.

These three theories complement one another and can be synthesized into a comprehensive model of family empowerment. Self-efficacy provides the psychological foundation for building family confidence; self-care deficit theory outlines the structural need for

professional support to achieve independence; and family empowerment theory establishes the social framework positioning the family as an active partner in health management. Together, these perspectives form an empowerment process encompassing cognitive (knowledge and understanding), affective (motivation and belief), and social (support and collaboration) dimensions.

Based on this synthesis, the present study proposes the development of an Integrated Family Empowerment Model grounded in Self-Efficacy and Self-Care principles, consisting of three key pillars: **Enhancing self-confidence** through interactive digital training and success stories from families managing DM effectively; **Strengthening self-care capacity** via structured education and continuous professional guidance; and **Transforming reflective awareness** through participatory e-learning modules that help families understand cause-effect relationships and make health decisions based on family values.

This model is expected to bridge the gap between theory and practice while strengthening family health literacy and promoting sustainable behavioral change in chronic disease management.

## CONCLUSION

The families of patients with DM show a strong commitment to providing care, but are still limited by their limited knowledge and lack of structured support. The six themes identified emphasize the need for comprehensive family empowerment strategies that combine digital education and participatory learning. Integrating e-learning tools into health promotion can strengthen family capacity and contribute significantly to the prevention of DFU in the community.

## REFERENCES

Al-Asadi, N., et al. (2021). Family support and diabetic foot care adherence: A qualitative exploration. *BMC Nursing*, 20(1), 112–119.

Alvarado-Martel, D., et al. (2022). Empowerment and self-efficacy in people with diabetes: A qualitative meta-synthesis. *Patient Education and Counseling*, 105(7), 1892–1903.

Aranda-Jan, C. B., et al. (2014). Systematic review on mHealth for diabetes: Challenges and opportunities. *BMC Medical Informatics and Decision Making*, 14(1), 46.

Bandura, A. (1997). *Self-Efficacy: The Exercise of Control*. New York: W.H. Freeman.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.

Creswell, J. W., & Poth, C. N. (2018). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. SAGE.

Dineen-Griffin, S., et al. (2022). Digital interventions to improve diabetes self-management: A scoping review. *Journal of Medical Internet Research*, 24(5), e34210.

Gibson, C. H. (1991). *A concept analysis of empowerment*. *Journal of Advanced Nursing*, 16(3), 354–361. <https://doi.org/10.1111/j.1365-2648.1991.tb01660>.

Green, L. W., & Kreuter, M. W. (2005). *Health Program Planning: An Educational and Ecological Approach*. McGraw-Hill.

Handayani, S., et al. (2021). Community-based digital literacy in diabetes education. *Indonesian Journal of Health Promotion*, 19(2), 145–156.

Henshaw, H., & Carpenter, C. (2020). Reflexivity and rigor in qualitative health research: A practical guide. *Qualitative Health Research*, 30(6), 867–879.

International Diabetes Federation. (2023). *IDF Diabetes Atlas*, 10th Edition.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. SAGE Publications.

López-Bastida, J., et al. (2020). Impact of diabetic foot on quality of life: A qualitative synthesis. *Health and Quality of Life Outcomes*, 18(1), 176–184.

Notoatmodjo, S. (2020). *Promosi Kesehatan dan Ilmu Perilaku*. Jakarta: Rineka Cipta.

Orem, D. E. (2001). *Nursing: Concepts of Practice*. 6th ed. St. Louis: Mosby.

Polit, D. F., & Beck, C. T. (2021). *Nursing Research: Generating and Assessing Evidence for Nursing Practice*. Wolters Kluwer.

Rahmawati, R., et al. (2023). E-learning approaches for family empowerment in chronic disease management. *Asian Journal of Public Health Research*, 15(4), 205–216.

Saleh, F., et al. (2021). Family empowerment model in chronic disease management: Lessons from low-resource countries. *Global Health Action*, 14(1), 1909023.

Shrestha, S., et al. (2021). Barriers and facilitators for diabetic foot care practice: A qualitative study. *PLOS ONE*, 16(10), e0259022.

Sugiyono. (2019). Metode Penelitian R&D. Bandung: Alfabeta.

Suhaimi, N. M., et al. (2020). Family caregivers' understanding of diabetic foot care: A qualitative study in Malaysia. *Primary Care Diabetes*, 14(5), 489–497.

World Health Organization. (2022). Global Report on Diabetes. Geneva: WHO.

Zhang, X., et al. (2022). Digital health literacy and diabetes self-management: Integrative review. *Frontiers in Public Health*, 10, 835210.