JURNAL MEDIKA CENDIKIA
Volume 11 Number 02 Year 2024
ISSN Print: 2355-827X / Online ISSN: 2442-4412
STIKes Karsa Husada Garut

Family Healthcare Functions in Caring for Diabetic Ulcer Patients

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Abstract

Diabetic ulcers are the most common complication in type 2 diabetes mellitus. Diabetic ulcers are full-thickness wounds that frequently occur in specific parts of the body, particularly in the lower extremities. These wounds are a significant concern because they can lead to severe complications, including infections, amputations, and even reduced quality of life if not managed properly. Patients with diabetic ulcers require not only medical attention but also substantial support from their families in daily care and management. The family plays a crucial role in providing therapeutic health care to members suffering from diabetic ulcers. This includes ensuring proper wound care, helping patients adhere to prescribed treatment regimens, monitoring blood glucose levels, and supporting lifestyle changes such as a balanced diet and regular physical activity. However, the extent to which families can perform these roles effectively depends on their knowledge and caregiving abilities. The purpose of this study is to assess the knowledge and abilities of families in caring for family members with diabetic ulcers. This research is a quantitative descriptive study conducted with a sample of 37 respondents, selected using a total sampling technique. The study utilized a questionnaire that had been rigorously tested for validity and reliability to ensure the accuracy of the findings. The results of this study indicate that while the majority of families (59.5%) possess good knowledge about diabetic ulcers and their care, a significant proportion (64.9%) lack the ability to effectively care for family members with this condition. These findings highlight the need for targeted education and training programs to enhance the caregiving skills of families, enabling them to provide better support and improve outcomes for patients with diabetic ulcers.

Keywords: Family caregiving function, diabetic ulcers, wound care, diabetes management

INTRODUCTION

Chronic complications frequently associated with type 2 diabetes mellitus (DM) include cardiovascular disease (CVD), nerve damage (neuropathy), lower limb amputations, eye diseases, and diabetic foot ulcers (DFU) (IDF, 2021). Diabetic Foot Ulcer (DFU) is among the most common complications in type 2 diabetes mellitus patients (Coffey et al., 2019). DFU is a full-thickness wound that often occurs in specific parts of the body, particularly in the lower extremities (Sari et al., 2022).

The prevalence of DFU in Indonesia is notably high, with an incidence rate of

12% in hospitals and 24% in community settings (Sari et al., 2020). Moreover, DFU frequently leads to disability and mortality (Projo Angkasa et al., 2017). DFU affects 15-25% of diabetic patients, with an amputation rate of 30%, a mortality rate of 32%, and 80% of DFU patients requiring hospitalization (Sukartini et al., 2020). If DFU is not promptly treated, it can result in rapidly spreading infections, necessitating amputations. These amputations are closely related to body image issues, ultimately impacting a patient's physical and psychological self-image, reducing social support, and increasing the risk of depression and stress disorders (Made Dyah Ayu et al., 2022; Maya Santi & Rachmad Nur, 2018).

To mitigate these impacts, prevention is essential. Preventing DFU involves health behaviors aimed at managing DM and averting further complications (Oktorina et al., 2019). Families play a critical role in caring for DFU patients, acting as monitors for blood sugar management and providing essential support (Taufandas et al., 2023). Families can also monitor acute or chronic conditions, recognize early warning signs such as medication side effects, respond appropriately to complaints, and perform care procedures like wound dressing (Hagedoorn et al., 2017). Family involvement is vital in ensuring the physiological and psychological recovery of patients (Gandes et al., 2022). However, limited knowledge and skills in DFU care at home often prevent optimal family-provided care (Ratnasari et al., 2022).

Family healthcare functions are the most effective in maintaining the health of DFU patients (Wahyuni et al., 2021). These functions include identifying, deciding, and providing proper care (Friedman, 2010). According to Ratnasari et al. (2022), limited knowledge and skills in DFU care at home hinder the implementation of family healthcare functions. Apart from family healthcare functions, knowledge and skills are vital for ensuring effective care for DFU patients. Adequate knowledge and skills enable families to assist in managing DFU (Musya'adah, 2022).

Limited caregiving abilities and resources can lead to increased stress (Maheshwari & Mahal, 2016). Family caregivers often face crises, economic strains, and the need for conducive care for prolonged periods, creating significant burdens. These include dietary and activity adjustments, wound care, and high levels of patience in dealing with patients. Without optimal intervention, such situations may lead families into psychological crises (Lu et al., 2019).

Research by Nurhayati (2020) showed that effective family healthcare functions improve compliance among DM

patients in managing activities, diet, therapy, health monitoring, and routine health checks. Similarly, Iksan et al. (2020) demonstrated that effective family functions enhance the success of medical treatment. Despite this, many families fail to carry out these functions effectively. Saraswati et al. (2023) found that 63.6% of respondents failed to perform family functions effectively, while only 36.4% managed to provide adequate family healthcare.

RUMAT Garut, a diabetic wound care center, was established out of concern for the high number of diabetes patients requiring amputations. A preliminary study conducted in 2023 revealed 105 DFU patients. Interviews with five patient families showed that four families had limited knowledge and skills in DFU care. Despite general awareness of diabetes, many families lacked a deep understanding of risk factors, symptoms, blood sugar management, and DFU complications. Before receiving treatment at RUMAT Garut, families managed wounds in various ways, such as cleaning with saline, applying doctor-prescribed ointments, using honey, or simply covering them with gauze.

RESEARCH METHOD

This study employed a quantitative research design with a total sampling method. The population consisted of Diabetic Foot Ulcer (DFU) patients at RUMAT Garut, a specialized diabetes wound care center, totaling 37 respondents. By using total sampling, all 37 individuals with Diabetes Mellitus were included as respondents in this study. The research instrument was a questionnaire develoved by researcher. Data analysis was performed using univariate and bivariate analysis with the Chi-square test.

Study Variables, family healthcare functions is measured by Knowledge and the family's ability to perform these roles consistently and competently, contributing to the patient's recovery and preventing complications. Applying knowledge about diabetes management and diabetic ulcer care gained from health professionals, training programs, or other reliable sources.

Abilities, providing hands-on care, such as cleaning wounds, dressing changes, and assisting with mobility or daily activities.

RESEARCH RESULT AND DISCUSSION

RESULT

1. Characteristics of Respondents

Table 1. Characteristics of Respondents (n = 37)

No	Characteristic	F	%
1.	**Gender**		
-	Male	12	32,4 %
-	Female	25	67,6 %
2.	**Age**		
-	21-30 years	14	37,8
-	31-40 years	12	32,4
-	41-48 Yearsa	11	29,8

3.	**Pendidikan**		
-	Elementary School	9	24,3
-	Junior High School	1	2,7
-	Senior High School	19	51,4
-	Bachelor's Degree/Diploma	8	21,6
4.	**Occupation**		
-	Housewife (Homemaker)	17	46
-	Teacher	3	8,1
-	Entrepreneur (Self-employed)	7	18,9
-	Laborer	4	10,8
-	Student/Unemployed	6	16,2
5.	**Relationship to the Patient**		
-	Spouse (Husband/Wife)	19	51,4
-	Biological Child	8	21,6
-	Sibling	10	27,0
6.	**Duration of Caregiving**		
-	Less than 1 year	21	56,8
-	1-2 years	7	18,9
-	More than 2 years	9	24,3

2. Family Knowledge

Based on the data, most families (22 individuals, 59.5%) with members suffering from diabetic ulcers have good knowledge levels. Ten families (27.0%) exhibit moderate knowledge, while five families (13.5%) demonstrate poor knowledge.

Table 2. Family Knowledge (n = 37)

Knowledge Level	Frequency (n)	%
Good	22	59,5 %
Moderate	10	27,0 %
Poor	5	13,5 %

3. Family Abilities

The data indicates that the majority of families (24 individuals, 64.9%) are unable to provide adequate care, while 13 families (35.1%) are capable of caring for family members with diabetic ulcers.

Table 3. Family Abilities

Ability Level	Frequency (n)	%
Capable	13	35,1%
inCapable	24	64,9%

DISCUSSION

Family Knowledge in Caring for Members with Diabetic Ulcers
The research findings indicate that most families (22 individuals, 59.5%) have good knowledge regarding diabetic ulcer care. This demonstrates that more than half of the families understand the issues associated with diabetic ulcers. This aligns with Anggraini (2020), who found that 51.8% of families had good knowledge about preventing diabetic ulcers in a study at Bulili Community Health Center, with 29 out of 44 respondents showing good understanding.

Knowledge is the outcome of sensory perception, occurring through the human senses such as sight, hearing, and touch (Notoatmodjo, 2010). Factors influencing knowledge include education, age, access to information, socioeconomic conditions, cultural factors, and personal experience (Tatang, 2019). Knowledge can be sourced from websites, health applications, or consultations with medical professionals such as doctors or nurses (Handayani & Wirawan, 2020). Education is another significant contributor to knowledge, as

higher education levels improve comprehension and exposure to information (Nugroho & Wulandari, 2023). Additionally, age affects knowledge acquisition; older individuals often develop better cognitive abilities and understanding (Subekti & Harahap, 2022).

This study revealed that the good knowledge level among families is due to effective information and education provided by RUMAT Garut nurses and the internet. Nurses consistently offer updates about patients and educate families and patients about proper care. Families also utilize online health applications as a resource. These findings are supported by Handayani et al. (2021), who reported that 80% of respondents improved their knowledge after receiving health education. Ramadhan (2021) similarly demonstrated that internet use enhanced health knowledge for 65% of families.

Educational background also contributes, as most families (19 individuals, 51.4%) had completed senior high school. This aligns with Masuneneng et al. (2018), who found that 44% of families with diabetic ulcer patients had a high school education. Additionally, most family members (37.8%) are aged 21–30 years, which falls within the adult age range, further supporting findings by Wardani et al. (2021) on diabetic ulcer prevention knowledge.

Family Ability in Caring for Members with Diabetic Ulcers, the findings show that most families (24 individuals, 64.9%) are unable to care for diabetic ulcer patients adequately. This aligns with Ratnasari et al. (2022), who reported that 80% of families lacked caregiving ability before receiving training.

Caregiving ability involves practical skills, knowledge, experience, and caregiving duration (Rahmawati, 2020). The inability of families to care effectively is primarily due to lack of experience and short caregiving duration. Most families (21 individuals, 56.8%) have cared for patients for less than a year, a duration categorized as short-term care (Iversen et al., 2020). This duration limits their ability to develop caregiving skills.

Despite good knowledge, there is a gap between knowing and being able to apply that knowledge. According to the "know, able, and willing" theory, successful actions require knowledge, ability, and motivation. Families may lack confidence due to limited practical skills or fear of mistakes (Maya Santi & Rachmad Nur, 2018). Motivation may also be hindered by mental or physical fatigue, particularly for families providing long-term care without sufficient support (Gandes et al., 2022).

Training and emotional support are essential to bridge this gap. Friedman emphasizes the importance of family

support in improving caregiving skills and motivation. Providing routine training and guidance for families can empower them to take on a more effective caregiving role.

CONCLUSION

This study on "Family Healthcare Functions in Caring for Diabetic Ulcer Patients at RUMAT Garut" concludes that while most families have good knowledge, most are not capable of adequately caring for diabetic ulcer patients.

RECOMMENDATION

Nurses should offer regular training for families focusing on infection signs, wound care techniques, dressing changes, and environmental modifications to improve their caregiving skills. Families are encouraged to participate in health education programs provided by healthcare facilities. These programs can enhance their medical knowledge, practical skills, and diabetes management, enabling them to provide better care.

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