

RELATIONSHIP BETWEEN FAMILY SUPPORT AND PATIENT COMPLIANCE LEVEL IN CARE FOR DIABETES MELLITUS WOUNDS IN A DIABETES MELLITUS SPECIALIST WOUND CARE HOME IN MALANG CITY

Windy Tiara Ramadhanti ¹, Supono ^{2(CA)}, Anggun Setyarini ³, Maria Diah Ciptaning Tyas ⁴

^{1,2,3,4} Polytechnic of Health Ministry of Health Malang

*Corresponding author's email (CA): supono_skep@poltekkes-malang.ac.id

Abstract

Non-compliance in caring for diabetic wounds can affect the length of the wound healing process in diabetic patients, lack of family support is thought to be the cause of patient non-compliance in carrying out diabetes mellitus wound care. The purpose of this study was to analyze the relationship between family support and the level of patient compliance in caring for diabetes mellitus wounds at RUMAT Malang City. This research design uses a correlation method with a cross-sectional research design. The population in this study were patients with diabetes mellitus wounds and were undergoing treatment at RUMAT Malang City with a total of 74 patients in the last 3 months. The sampling technique used purposive sampling technique with a sample of 42 people. Statistical test using Spearman test. The results of this study showed that 32 respondents (76.25) had good family support, and 27 respondents (64.3%) were compliant in caring for DM wounds. The results of the spearman test obtained a p-value of 0.000 which means that there is a relationship between family support and the level of patient compliance in caring for diabetes mellitus wounds at RUMAT Malang City. The patient's family is expected to realize the importance of family support in ensuring patient compliance with wound care. This study is expected to be the basis for developing further research using factors that affect patient compliance in treating diabetes mellitus wounds .

Keywords: Family Support, Compliance, Diabetes Mellitus Wound Care

Abstract

Non-compliance in treating diabetic wounds can affect the length of the wound healing process in diabetic patients, lack of family support is suspected to be the cause of patient non-compliance in treating diabetic wounds. The purpose of this study was to analyze the relationship between family support and the level of patient compliance in treating diabetic wounds at RUMAT Malang City. The design of this study used a correlation method with a *cross-sectional research design*. The population in this study were patients with diabetic wounds and were undergoing treatment at RUMAT Malang City with a total of 74 patients in the last 3 months. The sampling technique used a *purposive sampling technique* with a sample of 42 people . Statistical tests used the Spearman test. The results of this study showed that 32 respondents (76.25) had good family support, and 27 respondents (64.3%) were compliant in treating DM wounds. The results of the Spearman test obtained a *p-value* of 0.000, which means that there is a relationship between family support and the level of patient compliance in treating diabetic wounds at RUMAT Malang City. The patient's family is expected to realize the importance of family support in ensuring patient compliance with wound care. This study is expected

to be a basis for developing further research using factors that influence patient compliance in treating diabetes mellitus wounds .

Keywords: Family Support; Compliance; Diabetes Mellitus Wound Care

INTRODUCTION

Diabetes mellitus wounds are one of the common health problems today. If DM wound care is not handled properly, it will affect the length of the wound healing process. One of the factors causing the length of the wound healing process is patient non-compliance in carrying out DM wound care. This can arise due to low family support factors, so that DM wound sufferers are at risk of experiencing a decrease in quality of life (Suwanti et al., 2021) .

This can be seen from the results of a preliminary study conducted by researchers that some patients do not routinely check their DM wounds. Therefore, in addition to physical problems, psychological problems of sufferers are also important to consider, one of which is the supporting component of other families. Family support is an important component that needs to be considered because it acts as a reinforcement, which has an impact on patient compliance with daily diabetes wound care. If this DM condition is not treated properly and quickly, it can cause complications, both acute and chronic. One of the chronic complications is long-lasting DM that DM patients may face are diabetic wounds or diabetic ulcers (Yunartha, 2020) .

The World Health Organization in 2023 reported that 422 million people in the world have diabetes mellitus (WHO, 2023) . In 2018, the Basic Health Research (Riskesdas) stated that Indonesia had 1.01 million people with diabetes mellitus (Ministry of Health of the Republic of Indonesia, 2018) . According to *the International Diabetes Federation (IDF)* report , diabetic wounds in Indonesia are around 15%, with 30% amputations, and 32% deaths. and diabetic wounds are the main cause of hospitalization (almost 80%) (Aschner et al., 2022) .

According to the results of a study conducted by Yunartha (2020) , it was found that some respondents in this study reported a lack of family support and poor diabetic wound prevention behavior. The results of another study conducted by Yusra, (2011) showed that there was a positive correlation between the value of family support and the value of the respondents' quality of life.

Diabetic patients are at significant risk for health problems, both acute and chronic. Blood vessel problems can arise as a result of continuously elevated blood sugar levels, including retinopathy, nephropathy, neuropathy, and diabetic ulcers (Cahyaningrum, 2020) .

DM wounds are also known as diabetic ulcers, are a type of chronic complication of diabetes that forms open wounds on the surface of the skin which are often accompanied by necrosis or neuropathic wounds. Chronic diseases such as diabetic wounds require treatment compliance, independent wound care and self-monitoring. Family support and the level of patient compliance are determinants of the success of diabetes mellitus management (Ledy Ervita, Nora Gracesara, Nufi Alabshar, 2022) .

Management that can be done on diabetes mellitus patients according to the 5 pillars that have been grouped, namely health education, diet, exercise or physical activity, medication, and blood sugar checks. In cases of DM that have experienced chronic complications such as the emergence of diabetic wounds or commonly called diabetic ulcers, wound care and routine checks must be given. In wound care, there are four aspects that affect patients: understanding instructions, quality of interaction, family support, and understanding the character and perspective of the client (Yunartha, 2020) . Family support is one of the four most important aspects that can affect patient compliance in treating diabetes mellitus wounds. According to a study by Yunartha, (2020) , family support is a social resource that can help sufferers deal with stressful situations. Efforts to strengthen family support for patients in the prevention and care of diabetic wounds include involving families in the diabetes mellitus management process, such as routine patient check-ups, so that not only patients, but also their families, are always present in every patient management process. Families and loved ones can also learn about diabetes mellitus and its complications such as diabetic wounds. In addition, families who are involved in routine health check-ups of diabetic wound patients can provide an overview of the steps that families must take to keep diabetic patients healthy and free from complications (Yunartha, 2020) .

According to Riyadi & Khoiroh Muflihatin (2021), one form of incentive given by the family is their support. which can encourage patients to carry out proper self-care, therefore with sufficient family assistance it will provide a good influence and encouragement for patients to comply with diabetic wound care.

Based on the background above, the researcher intends to conduct a study entitled "The Relationship Between Family Support and Patient Compliance in Treating Diabetes Mellitus Wounds at the Diabetes Mellitus Specialist Wound Care Home in Malang City."

RESEARCH METHODS

This study is a quantitative study with a Cross Sectional research design, which is a research method that looks at the relationship between exposure or risk variables (independent) and outcomes or impacts (dependent) (Masturoh & T, 2018) . In this study, researchers used a *non-probability sampling technique* with *purposive sampling* , which is the selection of subjects for samples based on certain characteristics or traits that are thought to be related to previously known population characteristics or traits (Masturoh & T, 2018) .

The population in this study were patients with diabetes mellitus wounds and were undergoing examination at the Diabetes Mellitus Wound Care Home in Malang City, East Java. The sample of this study consisted of patients suffering from diabetes mellitus wounds calculated using the Slovin formula, 42 respondents met the inclusion criteria . Data collection in this study used the HDFSS (*Hensarling Diabetes Family Support Scale*) *questionnaire* for the family support variable and patient compliance observation sheets for the patient compliance variable in treating diabetes mellitus wounds.

This study was conducted at the Diabetes Mellitus Specialist Wound Care Home in Malanf City on March 27 - May 17, 2024. After going through data processing including coding, scoring, tabulating, data entry, cleaning, the data was then analyzed univariately for each variable, while bivariate analysis was carried out using the Sperman Rank statistical test using SPSS, the researcher used this statistical test because in this study the data scale used was interval and ordinal where the requirements for using the Spearman rank test were variables with numeric and ordinal data scales (Dahlan, 2017) .

RESEARCH RESULTS AND DISCUSSION

1. Respondent Characteristics

Table 1. Respondent Characteristics

Characteristics	<i>f</i>	%
Age		
31-50 years	6	14.3
51-70 years	30	71.4
71-90 years	6	14.3
Gender		
Man	17	40.5
Woman	25	59.5
Last education		
SD	10	23.8
JUNIOR HIGH SCHOOL	6	14.3
SENIOR HIGH SCHOOL	20	47.6
College	6	14.3
Work		
Doesn't work	20	47.6
Self-employed	3	7.1
civil servant	4	9.5
Etc	15	35.7
Long Suffering DM		
<1 year	4	9.5
1-5 years	19	45.2
6-10 years	14	33.3
>10 years	5	11.9
DM Grade		
Grade 1	15	35.7
Grade 2	7	16.7
Grade 3	13	31.0
Grade 4	7	16.7
Grade 5	0	0.0
Living in the Same House With		
Husband	19	45.2
Wife	13	31.0
Child	10	23.8
Cost of treatment		

Characteristics	<i>f</i>	%
BPJS Mandiri	0	0.0
Government BPJS	0	0.0
Independent	42	100.0
Other Insurance	0	0.0
Family Income		
< 3 Million	6	14.3
>3 Million	36	85.7
total	42	100

It is known that based on the data above, the age obtained was 30 respondents (71.4%) aged 51-70 years, 25 respondents (59.5%) were female, and had a high school education of 20 respondents (47.6%), 20 respondents were unemployed (47.6%), and 19 respondents (45.2%) had suffered from DM for 1-5 years, 15 respondents (35.7%) had Grade 1 DM, 19 respondents (45.2%) lived with their husbands, and 42 respondents (100.0) had independent medical expenses, and 36 respondents (85.7%) had a family income of >3 million.

2. Family Support

Table 2.1 Frequency Distribution of Family Support

Family Support	Frequency	Percentage (%)
59-116 (good)	36	85.7
0-58 (bad)	6	14.3
Total	42	100.0

Based on table 2.1, it is known that as many as 36 respondents (85.7%) have good family support and as many as 6 respondents (14.3%) have family support in the poor category.

Table 2.2 Frequency distribution of Family Support for Each Type of Family Support

Informational Support	Frequency	Percentage (%)
58-116 (good)	34	81.0
0-58 (bad)	8	19.0
Total	42	100.0
Instrumental Support	Frequency	Percentage (%)
58-116 (good)	27	64.3
0-58 (bad)	15	35.7
Total	42	100.0
Emotional Support	Frequency	Percentage (%)
58-116 (good)	36	85.7
0-58 (bad)	6	14.3
Total	42	100.0

Hope Support	Frequency	Percentage (%)
58-116 (good)	27	64.3
0-58 (bad)	15	35.7
Total	42	100.0

Based on table 2.2, it is known that informational support for family support with a good category was 34 respondents (81.0%), instrumental support with a good category was 27 respondents (64.3%), emotional support with a good category was 36 respondents (85.7%), and hope support with a good category was also 27 respondents (64.3%).

3. Patient Compliance in Treating DM Wounds

Table 3. Frequency Distribution of Patient Compliance in Treating Diabetes Mellitus Wounds

Patient Compliance in Treating DM Wounds	Frequency	Percentage (%)
Obedient	27	64.3
Quite Obedient	5	11.9
Less Compliant	10	23.8
Total	42	100.0

Based on table 3, it is known that as many as 27 respondents (64.3%) had a compliant level of compliance in caring for DM wounds, as many as 5 respondents (11.9%) had a fairly compliant level of patient compliance, and as many as 10 respondents (23.8%) had a less compliant level of patient compliance.

4. Analysis of the Relationship between Family Support and the Level of Patient Compliance in Treating Diabetes Mellitus Wounds

Table 4. Results of the analysis of the relationship between family support and patient compliance levels in caring for diabetes mellitus wounds.

	<i>P - value</i>	<i>r</i>
The Relationship between Family Support and the Level of Patient Compliance in Treating Diabetes Mellitus Wounds at the Diabetes Specialist Wound Care Home in Malang City.	0,000	0.605

Based on the statistical test above, the significance value or sig.(2-tailed) is 0.000. Because the sig.(2-tailed) value of $0.000 < 0.05$, it means that there is a significant relationship between family support and the level of patient compliance in treating diabetes mellitus wounds at RUMAT Malang City. For the value of the correlation strength of the relationship between family support and the level of patient compliance in treating diabetes mellitus wounds at RUMAT Malang City, the result was 0.605 which is included in the category of having a strong correlation or relationship.

DISCUSSION

Family Support for Diabetic Wound Sufferers

In this study, the form of support provided was emotional, informational, instrumental and hope support. Based on table 2.1, it shows that diabetic wound patients at the Diabetes Mellitus Specialist Wound Care Home in Malang City received family support with a good category, namely 36 respondents (85.7%). Table 2.2 shows that informational support for family support with a good category was 34 respondents (81.0%), instrumental support with a good category was 27 respondents (64.3%), emotional support with a good category was 36 respondents (85.7%), and hope support with a good category was also 27 respondents (64.3%).

The results of this study are in line with research conducted by Suwanti et al., (2021) which stated that most respondents in their study had good family support, namely 62 people (72.1%). This good family support is due to the concern of the closest people to diabetic ulcer sufferers who provide comfort and inspiration to pursue healing by accepting their illness. The closest individuals in the family are husband/wife. Several factors that influence family support for diabetic ulcer sufferers are education and economic status.

Education level is related to cognitive capacity that influences a person's thinking style in identifying disease risk factors and using health information for the health of sufferers. A person's economic status, whether high or low, still influences the support provided by the family, but knowledge and self-care management of family members with DM are also very important to overcome the complications of this diabetes mellitus disease. Even though the economic status of the family is low, having good knowledge and self-care management will provide good family support for sick family members (Suwanti et al., 2021).

This is in line with research conducted by Yunartha (2020) which stated that most of the respondents in his research had good family support, as many as 18 respondents out of 30 respondents (60%). Family support is a social resource that can help people cope with traumatic events. Family support is information from others that shows that they are loved and cared for, have value and worth, and are part of a network of reciprocal communication and responsibility.

Family support with these 4 supports is given in a balanced manner, both in terms of support for hope given through families who are willing to care for patients when they are sick and informational support given in terms of information and education such as always reminding patients to avoid forbidden foods and take medicine if the patient forgets, as well as instrumental support given through families who are willing to provide money/funds for patient medical expenses (Yunartha, 2020). This is what causes someone to have good family support.

Based on the explanation above, according to researchers, family support is a very important aspect that must be given or obtained by someone who is experiencing a difficult situation or a health problem, one of which is in patients with diabetes mellitus wounds. Family support can also be influenced by education level and economic status.

This can be seen when researchers conduct research, namely that families with higher levels of education often have a better understanding of the importance of family support, both in terms of emotion and health, and can influence the patient's hopes of recovery.

In terms of economic status, families with higher economic status have more resources to support sufferers, which can be in the form of financial support that helps pay for wound care costs, instrumental support that can always accompany the patient when the patient has a wound care schedule, and emotional support that is always willing to accompany the patient on every wound care schedule.

Patient Compliance in Treating Diabetes Mellitus Wounds

Based on the results obtained, out of 42 respondents, 27 respondents (64.3%) had compliance in treating wounds in the compliant category, 5 respondents (11.9%) were quite compliant in treating diabetes mellitus wounds, and 10 respondents (23.8%) were less compliant in treating diabetes mellitus wounds.

This is in line with the results of research conducted by I Made Mertha, I Made Widastra, (2015) which stated that most of the respondents of his research were compliant in diabetes mellitus care, namely 14 respondents (46.7%). Compliance for diabetic wound sufferers is an activeness, involvement and willingness of sufferers in carrying out wound care actions according to a schedule that has been determined through mutual agreement (agreement between patients and health workers) (I Made Mertha, I Made Widastra, 2015) .

This study is in line with the results of research conducted by Rita et al., (2018) where in their study showed 17 respondents (68.0%) were compliant in the treatment of gangrenous ulcers. Patient compliance with DM treatment can be influenced by environmental factors, one of which includes family support, the support provided can be in the form of attention and active participation of the family in the treatment or care program for the patient being treated (Rita et al., 2018) . This is what causes someone to comply with the management or nurse that has been determined.

Based on the description above, in the opinion of the researcher, the level of patient compliance in treating diabetes mellitus wounds in diabetic wound sufferers is very important, because sufferers who carry out wound care obediently can avoid the emergence of more severe wounds or the risk of amputation. Wound care carried out by diabetic mellitus sufferers can also be influenced by the support of the family that the sufferer has to recover from the disease, thus creating good compliance in sufferers in carrying out diabetic mellitus wound care.

The Relationship between Family Support and the Level of Patient Compliance in Treating Diabetes Mellitus Wounds at the Diabetes Mellitus Specialist Wound Care Home in Malang City

Based on table 4, it can be seen that the results of the analysis of the relationship between family support and patient compliance in treating diabetes mellitus wounds using the *Spearman test* with a *p-value* of 0.000, which means that the two

variables have a relationship between family support and the level of patient compliance in treating diabetes mellitus wounds.

This study shows a relationship between family support and the level of patient compliance in treating diabetic foot wounds. This is in line with research conducted by Ledy Ervita, Nora Gracesara, Nufi Alabshar, (2022) on factors that influence compliance with diabetic foot wound care with a *p-value* of 0.011, which means that there is a relationship between family support factors and compliance with diabetic foot wound care.

Her research shows that diabetic foot ulcer patients with good family support are more likely to comply with diabetes mellitus wound care than diabetic ulcer patients with poor family support. (Ledy Ervita, Nora Gracesara, Nufi Alabshar, 2022) .

This study is also in line with the study conducted by Sitti Fauziah Noer, Daniel Suranta Ginting, (2024) on the relationship between knowledge and family support with patient compliance in gangrene wound care at Bangkinang Regional Hospital which showed that the *p-value* was 0.000. This shows that there is a relationship between family support and compliance with gangrene wound care.

Family support can be given in the form of informative support, such as providing information about *diabetic foot care* for diabetic ulcer patients, emotional support for calmness, then appreciation support and instrumental support can be given in the form of support to do regular exercise every day, accompany during check-ups to health services so that diabetes mellitus patients do not feel alone, and help with regular foot care to prevent diabetic ulcers, and remind patients to always wear closed footwear to avoid direct contact with the floor or ground so that wounds do not occur.

Patients who have very good family support will also have a high level of patient compliance, because this can make patients feel cared for, loved, and very supported by their families if the support provided is consistent, so that from this, patient compliance in treating diabetes mellitus wounds can arise because of very good family support (Sitti Fauziah Noer, Daniel Suranta Ginting, 2024) . Based on the description of the data above, the results of this study indicate that most respondents have a very good level of compliance (compliant), and respondents have family support with a good category. According to the researcher's opinion, good family support can increase compliance in patients to carry out wound care according to the predetermined schedule, because with consistent family assistance it will have a positive influence and increase the patient's enthusiasm in carrying out compliance with diabetes mellitus wound care.

This can also arise due to increased endorphin hormones in the patient's body which can trigger feelings of euphoria or happiness so that the patient can comply with wound care willingly and without coercion.

The results of the identification carried out during the study showed that most patients had their own desires and beliefs in carrying out wound care examinations. However, there are still things that need to be improved from the

lifestyle and types of food that patients have. Family support and beliefs from the patient are very important aspects because they have an impact on patient compliance in carrying out routine wound care.

CONCLUSION

Based on the relationship analysis, the results showed that there was a significant relationship between family support and the level of patient compliance in treating diabetes mellitus wounds, where it can be seen that increasing family support also increases the level of patient compliance in treating diabetes mellitus wounds .

In the research process, data collection on each respondent was carried out at different times, some before the wound care process and some during wound care. This happened because some patients were indicated to experience severe pain during the wound care process, so the data collection process was carried out differently.

It is expected that for further researchers, this study can be used as a basis for developing further research using other studies in the form of factors that can influence patient compliance in treating diabetes mellitus wounds, and it is better for data collection on each respondent to be carried out at the same time, namely before the wound care process.

BIBLIOGRAPHY

- Aschner, P., Basit, A., Fawwad, A., Guariguata, L., James, S., Karuranga, S., Malanda, B., Mbanya, J.C., O'Neill, S., Ogle, G., Ogurtsova, K., Patterson, C., Ramachandran, A., Saeedi, P., Shaw, J., Simmons, D., Wild, S., Williams, R., Yáñez Jiménez, B., ... Webber, S. (2022). IDF Atlas Reports. *International Diabetes Federation* , 102 (2), 147–148.
- Cahyaningrum, N. (2020). The Relationship Between Family Support and Wound Incidence in Diabetes Mellitus Patients in Magelang Regency in 2020 (Issue Mdmc). [http://eprintslib.ummgl.ac.id/2506/1/16.0603.0051_Bab I_BabII_BAB III_BabV_Daftar Pustaka.pdf](http://eprintslib.ummgl.ac.id/2506/1/16.0603.0051_Bab_I_BabII_BAB_III_BabV_Daftar_Pustaka.pdf)
- Dahlan, MS (2017). Statistics for Medicine and Health Descriptive, Bivariate, and Multivariate, Complete with Applications Using SPSS 6th edition (6th ed.). Indonesian Epidemiology.
- I Made Mertha, I Made Widastra, D. (2015). Compliance with Treatment in Type 2 Diabetes Mellitus Patients. *Nursing*, 79 (7–9), 9. <https://www.google.co.id/#q=buku+sejarah+insulin+pdf>
- Ministry of Health of the Republic of Indonesia. (2018). National Report of RKD 2018. In Health Research and Development Agency (p. 674). http://labdata.litbang.kemkes.go.id/images/download/laporan/RKD/2018/Laporan_Nasional_RKD2018_Final.pdf
- Ledy Ervita, Nora Gracesara, Nufi Alabshar, WKB (2022). Factors Influencing Compliance with Diabetic Foot Wound Care. *Journals.Umkt.Ac.Id* , 3 (3), 2022. <https://journals.umkt.ac.id/index.php/bsr/article/view/3155>
- Masturoh, I., & T, NA (2018). Health Research Methodology. 1–307.

<https://www.ptonline.com/articles/how-to-get-better-mfi-results>

- Rita, E., Program, S., Nursing, S., & Nursing, I. (2018). Factors Related to Diabetes Mellitus Patient Compliance in Gangrenous Ulcer Treatment at Bojonggede Health Center, Bogor Regency in 2018. *Journal of UMJ Nursing Study Program*, 500 .
- Riyadi, A., & Khoiroh Muflihatin, S. (2021). The Relationship between Family Support and Self-Management in Type II Diabetes Mellitus Patients in the Palaran Health Center Work Area, Samarinda City. *Borneo Student Research* , 2 (2), 994–1001.
- Sitti Fauziah Noer, Daniel Suranta Ginting, D. (2024). The Relationship between Knowledge and Family Support with Patient Compliance in Gangrene Wound Care. 6 (February), 4–6.
- Suwanti, E., Andarmoyo, S., & Purwanti, LE (2021). Relationship between Family Support and Quality of Life of Type 2 Diabetes Mellitus Patients. *Health Sciences Journal* , 5 (1), 70. <https://doi.org/10.24269/hsj.v5i1.674>
- WHO. (2023). *Diabetes* . https://www.who.int/health-topics/diabetes#tab=tab_1
- Yunartha, M. (2020). The relationship between knowledge and family support with diabetic ulcer prevention behavior in diabetes mellitus patients in the working area of the Kenali Besar Community Health Center in Jambi City in 2020. Adiwangsa University, Jambi.
- Yusra, A. (2011). The Relationship between Family Support and Quality of Life of Type 2 Diabetes Mellitus Patients at the Internal Medicine Polyclinic, Fatmawati Central General Hospital, Jakarta.