

# The Correlation of Patients' Knowledge About Diabetes Wound Care and Interest in Visiting

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## ABSTRACT

Diabetes mellitus is a chronic metabolic disease caused by the body's inability to produce insulin according to the body's needs or due to ineffective use of insulin or both. When asked about their understanding of treating gangrene wounds independently, they said they did not fully understand how to treat gangrene wounds. The study aims to determine the correlation between patients' knowledge about diabetic wound care and interest in visiting the surgical clinic at Cut Nyak Dhien Meulaboh Hospital. This type of research used a cross-sectional, with a total sample of 38 respondents. The results showed that most respondents' knowledge was in the good category, namely 22 respondents (57.9%), and the least was in the less good category, 16 respondents (42.1%). The interest in visiting the majority of respondents was in the high class, namely 27 respondents (71.1%), and the least was in the low category, 11 respondents (28.9%). The correlation between the two variables, namely between the respondent's knowledge and interest in visiting the patient, is related to the results of the bivariate test using the Chi-square test, which is 0.00. It can increase their knowledge about diabetic wound care so that they can increase awareness for treating diabetic wounds and regularly re-control the hospital so that the healing process can run well and not cause complications that end in amputation.

**Keywords:** knowledge, wound care, interest in visiting

## INTRODUCTION

Diabetes mellitus, more called diabetes, is a serious, long-term (or chronic) condition that occurs when there is an increase in glucose levels in a person's blood because their body cannot produce any or enough of the insulin hormone or cannot use the insulin it produces effectively (International et al. [IDF], 2019). Diabetes mellitus can be diagnosed if the patient has classic symptoms of diabetes, such as polyuria, polydipsia, and polyphagia, with a blood glucose level of 200 mg/dl or more and a fasting blood glucose level of 126 mg/dl or higher (Indonesian Endocrinology Society [PERKENI], 2015).

The Ministry of Health's 2018 Basic Health Research Report (Riskesmas) shows that the prevalence of DM has increased to 8.5%. This increase is in line with the rise in obesity, one of the risk factors for diabetes (from 14.8% in Riskesdas data in 2013 to 21.8% in 2018. The data above shows that the number of DM sufferers in Indonesia is the largest, causing a heavy burden that must be handled by specialist, doctors or health workers (Soelistijo, 2021).

Diabetes often causes macrovascular and microvascular complications. Macro-vascular complications are mainly caused by insulin resistance, while microvascular complications are primarily caused by chronic hyperglycemia. This blood vessel damage begins with developing endothelial dysfunction due to the glycosylation process and oxidative stress in endothelial cells (Decroli, 2019).

Study Rif'at et al. (2023) found that most respondents experienced complications from cardiovascular system disorders, namely 39.2%. Study Saputri (2020) gets acute complications of Diabetic Ketoacidosis (DKA) (8.3%) and hypoglycemia (11.1%). Microvascular complications were retinopathy (11.1%), nephropathy (15.3%), and neuropathy (6.9%). Macrovascular complications were cerebrovascular (4.2%), coronary heart disease (11.1%), and ulcers (27.8%).

Diabetic foot ulcers (UKD) are one of the common chronic complications of type 2 DM (Decroli, 2019). Appropriate action must be taken for ulcers; if you do not get proper treatment, it will make the wound worse (Maryunani, 2013). UKD is a diabetic foot disease characterized by sensory neuropathy, motor neuropathy, autonomic neuropathy, and leg blood vessel disease (Decroli, 2019).

The goals of foot wound care are to control infection, improve function and quality of life, maintain health status, reduce costs, and prevent amputation (Maryunani, 2013). A study by Bachri et al. (2022) found a significant relationship between abnormal blood glucose levels, poor exercise, and poor foot care.

Knowledge of diabetes mellitus patients to control complications of diabetic foot ulcers contributes to preventing diabetic ulcers. The results of a preliminary study conducted by researchers at the Cut Nyak Dhien Hospital Meulaboh Surgical Polyclinic showed that in the last 3 months, data on the number of diabetes mellitus patients hospitalized was 78 people, and 7 people visited the surgical Polyclinic. There were 39 DM patients with gangrene, with an average of 13 people every month. In the number of visits to the surgical clinic, most inpatients with necrosis did not return to the clinic to re-check their wound care. The results of interviews with five patients who visited most of them said that the gangrene wounds they experienced could still be treated at home with the help of their families. Others said they experienced problems if they had to go back to the hospital frequently due to costs and not having a companion to take them to the hospital. When asked about their understanding of self-care for gangrene wounds, they said they did not fully understand how to treat wounds. Based on the

background explanation above and the information I received in the field related to patient and family knowledge in wound care, this can influence wound care visits to the surgical clinic.

## **METHODS**

This research uses a correlational or cross-sectional descriptive research design/type by linking patient knowledge variables about diabetic wound care to interest in visiting the surgical clinic. This research was conducted at the Cut Nyak Dhien Meulaboh Regional General Hospital Surgical Polytechnic in January 2023.

The population in this study were all inpatients and outpatients taken in the last three months, totaling 78 respondents. The sample in this study was taken from 38 respondents based on inclusion criteria taken from the average number of patients in the last three months. Moreover, the patient has diabetic ulcers.

The research uses an instrument, namely a questionnaire. Each instrument consists of 20 open and closed question items. Each item has 2 answer choices, yes and no, with their scores. Knowledge was measured using a questionnaire containing the patient's knowledge about diabetic wound care. This questionnaire consists of 20 open and closed questions/statements. Each item consists of 2 answer choices: yes (1) and no (0). Variables of interest can be determined using a questionnaire containing 20 question items. Each item has 2 answer choices: yes (1) and no (0).

Univariate analysis was carried out to get an idea of the frequency distribution of respondents based on age, education, and gender, which is displayed in the frequency distribution table.

Bivariate analysis was carried out to determine the effect of the independent and dependent variables using the chi-square test at a significance level of  $\alpha=0.05$ . Acceptance of the hypothesis is that if the p-value  $<0.05$ , there is a correlation between the independent and dependent variables.

## **RESULTS**

### **Demographic Characteristics**

Based on the research results obtained from respondents, the following results were obtained for the respondent's univariate variables.

**Table 1. Frequency Distribution of Respondents Based on Age**

No	Age	Frequency (f)	Percentage (%)
1	31-40 Years	3	7.9
2	41-50 Years	10	26.3
3	> 51 Years	25	65.8
Amount		38	100.0

Based on Table 1 above, the results show that most respondents are in the age range > 51 years, 25 respondents (65.8%), the least in the age range 31-40 years, three respondents (7.9%).

**Table 2. Frequency Distribution of Respondents Based on Last Education**

No	Last education	Frequency (f)	Percentage (%)
1	Junior High School	10	26.3
2	Senior High School	23	60.5
3	College	5	13.2
Amount		38	100.0

Based on Table 2 above, the results show that most respondents' final education was at the Senior High School level, 23 respondents (60.5%), and the least was at the tertiary education level, five respondents (13.2%).

**Table 3. Frequency Distribution of Respondents Based on Gender**

No	Gender	Frequency (f)	Percentage (%)
1	Male	28	73.7
2	Female	10	26.3
Amount		38	100.0

Based on Table 3 above, the results showed that most respondents were male, 28 respondents (73.7%), and the least were female, 10 respondents (26.3%).

**Table 4. Frequency Distribution of Respondents' Knowledge About Wound Care**

No	Knowledge	Frequency (f)	Percentage (%)
1	Not good	16	42.1
2	Good	22	57.9
Amount		38	100.0

Based on Table 4 above, the results showed that most respondents' knowledge is a good category, 22 respondents (57.9%), and the least is in the not good category, 16 respondents (42.1%).

**Table 5. Frequency Distribution of Respondents' Interest in Visiting**

No	Interest in Visiting	Frequency (f)	Percentage (%)
1	Low	11	28.9
2	High	27	71.1
Amount		38	100.0

Based on Table 5 above, the results showed that most respondents are highly interested in visiting, 27 respondents (71.1%), and the least in a low category, 11 respondents (28.9%).

### Bivariate Analysis

**Table 6. Frequency Distribution of the Relationship between Patient Knowledge about Diabetic Wound Care and Interest in Visiting**

Knowledge		Interest in Visiting		Total	Sig.
		Low	High		
Not good	Count	13	3	16	0.00
	% of Total	34.2	7.9	42.1	
Good	Count	0	22	22	
	% of Total	0.0	57.9	57.9	
Total	Count	13	25	38	
	% of Total	34.2	65.8	100.0	

Based on Table 6 above, the results showed that the relationship between the two variables, namely between respondent knowledge and interest in visiting patients, is interconnected with the results of the bivariate test research using the Chi-square test, which is 0.00.

## DISCUSSION

### Patient Knowledge of Wound Care

The research results showed that most respondents' knowledge was in the good category (57.9%), and the least was in the not good category (42.1%). A person's knowledge about an object contains two aspects: positive and negative. These two aspects will determine a person's attitude. The more positive aspects and objects are known.

Monitoring blood sugar levels is essential for DM sufferers to delay or prevent complications. If no further action is taken, DM can cause and worsen disease or develop microvascular complications such as eye disease, neuropathy, and kidney damage, as well as macrovascular complications such as cerebrovascular disease, peripheral artery disease, and coronary artery disease (Suryanegara et al., 2021).

Factors that can worsen the condition of the wound in diabetic ulcer wound care procedures are infection of the wound, which can be characterized by a greenish color on the wound,

swelling, pain, and an odor in the wound, therefore wound care is carried out to prevent infection in the wound. Wounds and speed up the healing process (Maryunani, 2013).

In the researcher's opinion, almost all respondents answered correctly regarding recognizing signs of infection. This is because when treating wounds, respondents receive information about the condition of their wounds, including signs of infection. Apart from that, respondents could also see or observe the condition of their wounds.

The ability to prevent and treat wounds from worsening: Almost all respondents also answered correctly; this is because when treating wounds, patients are given information by nurses about how to prevent wounds from worsening correctly, for example, keeping wounds and dressings clean and having a low sugar diet.

Education is one factor influencing respondents' (good) knowledge. In this research, good knowledge was found to be high school education. The higher a person's education, the easier it is to receive information, especially wound care awareness.

An event that is often feared in diabetic ulcer patients is amputation. Amputation will be carried out if the wound has blackened and hardened due to a large amount of dead tissue. Automatically, amputation must be carried out because, if left unchecked, it can harm the sufferer; for example, the wound will spread to other body organs and will become a nesting place for bacteria, which will make the wound worse (Maryunani, 2013). Regular diabetes management is very important for patients, and nurses at the Polyclinic must educate patients regarding diabetes management and diabetic foot wounds (Indradewi et al., 2020).

According to the researcher's opinion, in evaluating the development of the wound, respondents can see the condition of their wound when the nurse is treating it. Here, the respondents can evaluate for themselves what the condition of the wound is, including the primary color, smell, and general condition of the wound. Apart from that, respondents can ask the nurse what the good and bad condition of the wound is. However, respondents needed to fully understand the healing process or the development of excellent and bad wounds because they needed special education in the health sector.

The results of observations in this study regarding the meaning of diabetic ulcers were that only some respondents answered correctly; this was because respondents were less exposed to information from health services and lacked awareness of respondents in seeking information about diabetic ulcers. Respondents also understood how often wounds had to be cleaned/dressed at health services.

## **Interest in Visiting**

The research results showed that most respondents' interest in visiting was in the high category (71.1%), and the least was in the low category (28.9%). Several factors influence a patient's interest in returning to the clinic: attitude, brand image, perceived value, and perceived quality.

Lack of information about diabetic foot ulcers causes low knowledge, attitudes, and actions to care for the feet of DM sufferers. High knowledge and attitude help overcome confusion and increase self-confidence and motivation for better self-management (Fata et al., 2020).

Attitude is a mental condition related to readiness to respond, organized through experience, and directly influences behavior. The patient's attitude towards the patient's interest in returning to the Polyclinic, Cut Nyak Dhien Regional Hospital needs to be considered and recognized in determining the patient's wound care needs.

The most dominant indicator of the patient's perceived value towards RSUD polyclinic services is that there are no additional costs for BPJS Health patients during treatment. Patients also feel that the benefits of their treatment services are balanced with the money spent to pay the BPJS Health package contributions each month. However, overall, the service has not been rated highly; patients rate it as usual and disagree with the perceived value of the service at the Cut Nyak Dhien Regional Hospital polyclinic. Perceived value is a consumer's overall assessment of the usefulness of a product or service based on perceptions of what has been obtained. Value is a solid tie to consumer perceptions of the benefits perceived by customers (perceived value).

Consumers also use perceived value to consider various services at cost offered by several hospitals. The perception of the quality of service towards the Polyclinic is rated as high, the perception of the quality of service provided by the service providers (specialist doctors and nurses) is of very high quality, the patient's perception of the consistency of the service provider is excellent, and the patient's perception of the quality of the RSUD polyclinics is different with other hospitals.

The patient's perception of the quality of service at the RSUD polyclinic is best regarding the service of the medical personnel, meaning that patients are interested in returning to the RSUD polyclinic because of the great name of the services provided by the medical personnel.

Patients choose hospitals as a means of treatment for service reasons, and respondents agree with the service performance received and have been felt as a whole even though it is based on more varied perceptions; apart from that, patients also feel satisfied and loyal to service users.

### **The relationship between patient knowledge and interest in visiting**

The research showed a correlation between respondents' knowledge and interest in visiting patients. The patient's knowledge of good wound care also influences the patient's desire to choose the Cut Nyak Dhien Regional Hospital polyclinic as a place for treatment. It has a covariance value of only 0.895, meaning it has a positive but not strong relationship.

Good patient knowledge of diabetic wound care will increase the patient's awareness in visiting the Polyclinic so that the diabetic wound they suffer does not become worse. Study Utama and Nainggolan (2021) After being given education about diabetes mellitus and diabetic foot exercises, and it was found that 83% had good knowledge. Study Fata et al. (2020) found that 75% of respondents knew foot care in the relatively good category. Meanwhile, half of the respondents had attitudes about foot care in the positive category.

Apart from that, the quality of service influences patients to increase their interest in visiting the Polyclinic, which will influence patient satisfaction. Customers decide to be loyal to a service because they feel the service provided to them not only meets their needs but is also satisfying and enjoyable.

According to research Srimiyati (2018), diabetes patients with good knowledge about foot care are 4,767 times more likely to carry out foot care than those without knowledge. A study by Tini et al. (2019) shows a relationship between foot care and the risk of diabetic feet.

Service quality has a positive effect on patient satisfaction, and patient satisfaction mediates the effect of service quality on patient loyalty. When a patient has a good impression of a hospital's service, it will increase patient satisfaction, so the patient tends to be interested in returning to visit to use the hospital's services and recommend it to others. Good quality service provided by the company will gain a sustainable competitive advantage.

### **CONCLUSION**

Most respondents' knowledge was in the good category, and the least was in the not good category. Most respondents' interest in visiting is in the high category, and the least is in the low category. The relationship between the two variables, namely between the respondent's knowledge and interest in visiting patients, is interconnected with the results of the bivariate test using the Chi-square test, which is 0.00. You can increase your knowledge about diabetic wound treatment so you can increase your awareness about diabetic wound treatment and check on your hospital regularly to ensure that the healing process is on track and that complications



that can lead to amputation do not occur.

## LIMITATION

This research can increase patient satisfaction in making repeat visits to the hospital. This research can be a basis for formulating policies to improve patient services, especially in the treatment of diabetic foot wounds. The limitation of this research is that it only discusses knowledge based on respondent characteristics. Future researchers are expected to be able to discuss external factors that can increase knowledge and influence visits to health services.

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