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The Effect Of Wound Stage On Wound Healing Duration In Diabetic Ulcer Patients At The Polyclinic Of Fl Tobing Hospital, Sibolga City In 2020

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ABSTRACT

Patients with diabetes often experience accompanying problems. One of these problems is the emergence of wounds that are difficult to heal, where the place where injuries often occur is the lower extremities. Wounds that are difficult to heal can cause problems in diabetic feet such as ulceration, infection and gangrene. Where are things It is a common cause of hospitalization for people with diabetes. According to The National Institute of Diabetes and Digestive and Kidney Disease, that in Indonesia there are 1,785 DM patients who have experienced complications such as neuropathy (63.5%),retinopathy (42%), nephropathy (7.3%),macrovascular (16%),Microvascular (6%) and diabetic foot wounds (15%) while the mortality rate from diabetic foot ulcers and gangrene reaches 17-23% and the amputation rate reaches 15-30%, in addition the mortality rate 1 year after amputation is 14, 8%. The purpose of this study was to determine the effect of wound stage on the healing time of diabetic ulcer patients.This study was conducted using a descriptive analysis design with a cross sectional approach. The population that became the focus of this study were patients with ulcers who received wound care at the FL Tobing Hospital polyclinic as many as 85 people.The sample in this study were all patients with diabetic ulcers who visited or received wound care visits with total sampling technique. The results of the p-value statistical test based on table 4.10 are p = 0.010 >0.05, so it can be said that there is a significant influence between the final wound stage factor on the healing time of diabetic ulcers.

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1. Introduction

Patients with diabetes often experience accompanying problems. One of these problems is the emergence of wounds that are difficult to heal, where the most The most common injuries are the lower extremities. Wounds that are difficult to heal can cause problems in diabetic feet such as ulceration, infection and gangrene. Where are things It is a common cause of hospitalization for people with diabetes. According to The National Institute of Diabetes and Digestive and Kidney Disease, that in Indonesia there are 1,785 DM patients who have experienced complications such as, neuropathy (63.5%), retinopathy (42%), nephropathy (7.3%), macrovascular (16%)), Microvascular (6%) and diabetic foot injuries (15%) while the mortality rate due to diabetic foot ulcers and gangrene is 17-23% and the amputation rate is 15-30%. %. This is supported by data from Riskesdas (2013) with an increase in prevalence of 15%. For the wound healing process, it is necessary to carry out a focused wound assessment from a holistic assessment. According to Sussman and Betes Jansen (2012) an accurate and complete assessment is able to provide data in establishing a diagnosis and planning appropriate and effective wound care to predict the duration of wound healing. Wound healing is a complex and dynamic process that is mutually sustainable. Nutritional factors are one of the important factors that play a role in wound healing. Patients with

diabetic gangrene are usually given B1 with a nutritional value of 60% and carbohydrates, 20% fat calories and 20% protein calories. The factor of long suffering from DM shows that the duration of suffering from DM is > 10 years.

Is a risk factor for diabetic foot ulcers. Complications on nerves and blood flow to the feet is what causes neuropathy and peripheral arterial disease. Comorbid factors, in general hypertension is an asymptomatic condition, where abnormally high arterial pressure causes an increase in stroke, kidney failure, heart failure. Smoking habits in DM patients who smoke > 12 cigarettes per day have a threefold risk of developing diabetic foot ulcers compared to with DM patients who do not smoke. Smoking habits due to nicotine contained in cigarettes cause endothelial damage, then platelet attachment and aggregation which then becomes leakage so that lipoprotein lipase will slow down blood lipid clearance and facilitate the onset of atherosclerosis.

2. Method

2.1. Research Design

This research was conducted using a descriptive analysis design with a cross sectional approach.

2.2. Research Place and Time

The research location was carried out at the FL.Tobing Hospital Polyclinic, Sibolga City from March to June 2020.

2.3. Population and Sample

The population that became the focus of this study were patients with ulcers who received wound care at the Poly Clinic RSU FL Tobing, Sibolga City as many as 85 people. The sample in this study were all patients with diabetic ulcers who visited or received wound care visits as many as 85 people.

2.4. Data Collection Procedure

The object of research in this study was data on patients with diabetic ulcers who underwent treatment from March to July 2020. The number of diabetic ulcer patients undergoing treatment was 85 people. Data on diabetic ulcer patients was obtained by observing.

2.5. Data analysis method

Data on diabetic ulcer patients was obtained by observing. Observations used in this study using the Category system in the form of observations of matters relating to the variable category that has been determined, namely the stage of the wound. After the data is collected, the data is compiled in a master data table and processed using the SPSS program application.

3. Results and Discussion

a. Characteristics of Respondents

Based on the results of the study, data on diabetic ulcer patients at the FL.Tobing Hospital polyclinic, Sibolga City based on age are as follows:

TABLE 1
FREQUENCY DISTRIBUTION OF DIABETIC ULCER PATIENTS BY AGE

Age	Frequency	Percent
35 - 44 tahun	10	11.8
45 - ≥90 tahun	75	88.2
Total	**85**	**100**

The frequency distribution of diabetic ulcer patient data based on age as presented in the distribution table above shows that the majority of patients are in the 45-90 year age group, as many as 75 people (88.2%).

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TABLE 2
DISTRIBUTION OF DIABETIC ULCER PATIENTS BY SEX

sex	*F*	%
Male	32	37.6
Famele	53	62.4
Total	85	100

Frequency distribution of diabetic ulcer patient data by sex shows that patients with female sex dominate the number of diabetic ulcer patients was 53 people (62.4%).

TABLE 3
FREQUENCY DISTRIBUTION OF DIABETIC ULCER PATIENTS BASED ON THE INITIAL WOUND STAGE OF TREATMENT

Wound Stage	*F*	%
Stage I – Stage II	18	21.2
Stage III – Stage IV	67	78.8
Total	85	100

The frequency distribution of diabetic ulcer patient data based on the stage of injury at the beginning of treatment showed that the majority of patients in Stage III – Stage IV were 67 people (78.8%).

TABLE 4
FREQUENCY DISTRIBUTION OF DIABETIC ULCER PATIENTS BASED ON THE STAGE OF THE FINAL WOUND OF TREATMENT

Wound Stage	*F*	%
Stage I – Stage II	66	77.6
Stage III – Stage IV	19	22.4
Total	85	100

The frequency distribution of diabetic ulcer patient data based on wound treatment at the end of therapy as presented in the table above shows the number of increases in the progress of the wound stage of diabetic ulcer patients and their recovery. Patients who remained in a fixed Stage IV to Stage II condition or who had progressed in injuries were 66 people (77.6%), while the number of patients who were in Stage I to those who experienced recovery was 19 people (22.4%).

TABLE 5
FREQUENCY DISTRIBUTION OF DIABETIC ULCER PATIENTS BASED ON LENGTH OF WOUND CARE LONG

Treatment	*F*	%
1 – 24 weeks	82	96.5
25 - 48 weeks	3	3.5
Total	85	100

Frequency distribution of diabetic ulcer patient data based on the duration of wound care showed that patients with a treatment duration of 1-24 weeks were 82 people (96.5%),

TABLE 5
DISTRIBUTION OF THE INFLUENCE OF WOUND STAGE FACTORS AT THE BEGINNING OF TREATMENT ON THE DURATION OF HEALING OF DIABETIC ULCERS

		Duration of treatment				
		1-24 Weeks		25-48 Weeks		p-Value
		n	%	N	%	
Early wound stage	Stage I-II	18	22.0	0	0.0	0.485
	Stage III-IV	64	78.0	3	100.0	
Total		82	100.0	3	100.0	

Based on the table above about the influence of wound stage factors at the beginning of treatment

on the duration of healing of diabetic ulcers it was obtained that there were 82 patients who underwent wound treatment for 1-24 weeks consisting of 18 patients (22.0%) who had ulcers that were in Stage I-II and 64 patients (78.0%) had ulcers that is at Stage III-IV. From the results of data analysis using the chi-square alternate fisher statistical test obtained a p value = 0.485 > α = 0.05, it can be concluded that H0 is accepted and Ha is rejected which means that the wound stage factor at the beginning of treatment has no effect on the healing time of diabetic ulcers.

TABLE 5
DISTRIBUTION OF THE INFLUENCE OF WOUND STAGE FACTORS AT THE BEGINNING OF TREATMENT ON THE DURATION OF HEALING OF DIABETIC ULCERS

		Duration of treatment				
		1-24 Weeks		25-48 Weeks		p-Value
		n	**%**	**N**	**%**	
Stadium final wound	Stage I-II	66	80.5	0	0.0	0.010
	Stage III-IV	16	19.5	3	100.0	
Total		82	82	100.0	3	

Based on the table above about the effect of the final wound stage factor on the healing duration of diabetic ulcers, it is known that there were 82 patients who experienced and did not progress in wound care for 1-24 weeks consisting of 66 patients (80.5%) Stage IV to down to stage II and 16 patients (19.5%) had ulcers that were in Stage I until they became cured. From the results of data analysis using the chi-square alternate fisher statistical test obtained a value of p = 0.010 < α = 0.05, it can be concluded that H0 is rejected and Ha is accepted which means that the final wound stage factor of treatment affects the duration of healing of diabetic ulcers.

3.1 Discussion

a. The effect of the wound stage factor at the beginning of treatment on the duration of healing of diabetic ulcers

Based on the table above which shows the statistical results of the alternate fisher chi-square test, the value of p = 0.485 > = 0.05, it can be concluded that there is no significant effect between the initial wound stage factor and the healing time of diabetic ulcers, which shows that 82 patients who underwent wound care for 1-24 weeks consisting of 18 patients (22.0%) had ulcers that were in Stage I-II and 64 patients (78.0%) had ulcers that were in Stage III-IV. And there were 3 patients who underwent wound care for 25-48 weeks consisting of 3 patients (100.0%) having ulcers that were in Stage III-IV and no patient (0.0%) who had ulcers in Stage I-II. The results of this study explain that stage III-IV diabetic ulcers are the most experienced by patients in line with research conducted by Triyanisa (2013: 45) that 60.6% of patients with diabetic ulcers are stage IV.

In Yunus' research (2013: 98) which states that the high number of patients with stage III and IV diabetic ulcers is due to the lack of knowledge and attention of diabetic ulcer patients to immediately treat their wounds when an initial wound occurs. Most ordinary people prefer to keep their wounds open with the assumption "open wounds will dry quickly and if the wound is dry, it means the wound has healed". Open wounds are prone to friction, trauma, and even infection, thereby inhibiting the healing process of diabetic ulcers and prolonging the length of wound care.

According to Irma (2013: 56) in the Wound Care Association that the time needed to heal diabetic ulcers is 2-3 weeks for stage I, 3 weeks-2 months for stage II, 2 months for stage III, and 3-7 months for stage I. stage IV. Even though there is an estimate of time in the wound healing process, it is still relative because there are other things that affect it, such as the state of wound hygiene, whether there is a wound infection or not, dressing changes, and the patient's regularity in wound care.

b. The effect of the final wound stage of treatment on the length of treatment in healing diabetic ulcers

The results of the p-Value statistical test based on table 4.10 are p = 0.010 > = 0.05 then it can be said that there is a significant influence between the final wound stage factor on the healing time of diabetic ulcers which shows that 82 patients underwent treatment for 1-24 weeks consisting of 66 patients (80.5%) Stage IV to down to stage II and 16 patients (19.5%) had ulcers that were in Stage I until they healed. And there were 3 patients who underwent wound care for 25-48 weeks

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consisting of 3 patients (100.0%) suffering from ulcers that were in Stage I until healed and there were no patients (0.0%) who had ulcers in Stage IV-II.

The results of this study support the results of research conducted by Triyanisa (2013: 46) that the majority of patients with stage IV diabetic ulcers only reach stage II in the healing process so that further treatment must be carried out in order to reach stage I and to achieve healing. In addition, this study also supports the results of research conducted by Desni, et al (2014) which states that the stage of the wound at the end of treatment will determine the next nursing intervention or stop the intervention that has been given.

In line with the results of this study, Ferawati (2014: 98) in her research results stated that patients who recovered from diabetic ulcers were the result of the lowest level of diabetic ulcer patients and the majority only experienced progress in wound conditions, 70% stage I could heal on time, 60 % stage II can recover on time, 50% stage III can heal on time, and 40% stage IV can heal on time.

4. Conclusion

Based on the results of the study and the results of the alternate fisher/fisher exact chi-square test, it can be stated that the final wound stage affects the wound healing time of diabetic ulcer patients with a p-value of 0.010, besides that there is a tendency that influences other factors based on the stage of the wound. Early stage III-IV requires a longer healing process than stage I-II wounds.

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