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Analysis of the Relationship between the Economic Level With The Adherence Of Diabetic Ulcer Foot Care

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Abstract:
Background: *Diabetes mellitus (DM) is one of the non-communicable diseases that occur due to disorders of the pancreas in producing insulin hormones that cause an increase in sugar levels in the blood. Diabetic ulcer is one of the complications of DM disease that occurs seriously and repeatedly and requires treatment with a long time and considerable cost. Amputation is one of the risks that diabetic ulcer patients must face if the infection occurs not able to be overcome properly. Adherence in undergoing treatment is a very important factor in the treatment of diabetic ulcers. The study aimed to look at the relationship between economic levels and foot care adherence in diabetic ulcer patients.*
Materials and *Methods: This research design is included in the type of correlative analytical research using a cross-sectional design approach. Sampling technique using accidental sampling method. The number of samples used is 39 people based on inclusion criteria, namely DM patients with diabetic ulcer feet who are undergoing wound treatment and willing to be respondents to research to fill out informed consent. Data analysis uses univariate and bivariate analysis. The test used in this bivariate analysis uses the Rank Spearman test to determine the relationship between economic levels and diabetic foot ulcer treatment compliance.*
Results: From the results *of the study showed that respondents of the male sex more than women with a percentage of 51.3%. For the most age range in the age of 56-65 years as much as 43.6%. The degree of ulcer is most experienced by patients with a degree of 1 as much as 35.9%. The economy has the most low incomes at 51.3%. Then number of foot care in the study largely fell into the compliant category with a percentage of 82.1%. The Spearman Rank test obtained a coelation coefficient of 0.129 with significance level of 0.432 which indicates that there is no relationship between economic level and foot care compliance.*
Conclusion: *There is no significant relationship or correlation between economic levels and patient compliance with diabetic ulcer foot care.*

KeyWord: ***economic level, foot care compliance, diabetic foot ulcer***

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I. Introduction

Diabetes mellitus (DM) is one of the non-communicable diseases that occur due to disorders of the pancreas in producing insulin hormones that cause an increase in sugar levels in the blood. The number of DM incidents in Indonesia continues to increase from year to year. The results of basic health research (Riskesdas) in 2013 showed that the increase in the prevalence of DM diagnosed by doctors by 2.1%, where the highest prevalence rate was in D.I. Yogyakarta Province by 2.6%[(1)] . Mortality and pain rates are events caused by complications in people with DM not hyperglycemic events [(2)]. Diabetes mellitus is often referred to as a deadly disease because it attacks all organs of the body and causes various complaints. People with DM often experience complaints caused by various things such as individual characteristics that include gender, age, education level, type of work, income, number of family members, history of the disease and can be influenced also by handling factors that include diet, physical activity, drug therapy, and blood glucose monitoring [(3).]

Diabetic ulcer is one of the complications of DM disease that occurs seriously and repeatedly with an incidence rate of 1-4% per year with a risk of 15-25% over life. This complication occurs due to abnormalities of nerves and blood vessels as well as the incidence of infection. Inability to cope with infection results in decay and even amputation. Foot treatment on diabetic ulcers takes a long time with a considerable cost burden [(4).] The prevalence of diabetic ulcers is estimated to increase from 2% to 5-7%. DM patients with ulcers have twice the risk of death than DM patients without ulcers. The incidence of amputation due to diabetic ulcers is 10 times more in DM patients than in non DM patients[(5).] DM disease management strategies are not only on drug use, but also include guidelines in terms of diet, physical activity and weight monitoring. Effective education keeps a patient's blood sugar levels under control, prevents complications and reduces medical costs in DM patients[(6).]

Diabetic ulcers can heal in most patients if the doctor performs treatment in accordance with the principles of good diabetic ulcer treatment. Non-optimal treatment can result in trauma and continued infection of the wound. Patients with ulcers on deep skin tissue require intensive care according to their circumstances and even hospitalization [(7).]. Foot care in DM patients both who have ulcer and who do not need a good level of compliance from DM patients. If you have a diabetic ulcer that requires treatment of wounds with a long time and considerable cost. The study aimed to analyze or look at the relationship between economic levels and patients' compliance with diabetic ulcer foot care.

II. Material And Methods

This research has received a research permit from the Health Research Ethics Committee (KEPK) of STIKES Surya Global Yogyakarta with number 1.31 / KEPK / SG / III / 2020 on May 31, 2021. This research design is included in this type of analytical research correlative by using a *cross-sectional* approach design to find out the relationship between economic levels and patient compliance in diabetic ulcer foot care. Subject this study is a diabetic mellitus (DM) with a diabetic ulcer on the foot. The research site was conducted at five wound care clinics which are independent nurses' practices located in Yogyakarta Special Region Province (DIY).

The population in the study was a DM sufferer with diabetic foot ulcer who was undergoing wound treatment at the clinic. Sampling technique using accidental sampling method *by* taking samples available during data retrieval. This data collection takes place in March to June in 2021. The number of samples used was 39. The size of the sample in this study was taken based on established inclusion criteria. The inclusion criteria is a DM patient with diabetic ulcer foot who is undergoing wound treatment and is willing to be a study respondent by filling out informed consent.

The tool used in collecting this data uses the Morisky Medication Adherence Scale 8 (MMAS-8) compliance questionnaire. This questionnaire contains 14 statements about the compliance of foot care with ulcers. The category of economic levels here is divided into two, namely low and high economic levels. While the category for foot care compliance is divided into two also namely obedient and non-compliant.

The data analysis used in this study uses univariate and bivariate analysis. Bivariate analysis is used to determine the relationshi between economic levels and foot care compliance. The test used in this bivariate analysis uses the Spearman Rank test. Programs used in processing and analyzing data using SPSS software.

III. Result

Table 1. Characteristic Respondents Based on gender, age, degree of diabetic ulcer, economic level and foot care compliance

Variable	Sum	Percentage
Gender		
Woman	19	48.7
Male	20	51.3
Age		
36-45 years	3	7.7
46-55 years	14	35.9
56-65 years	17	43.6
66-75 years	5	12.8
Degree of Diabetic Ulcer		
Degrees 0	2	5.1
Degrees 1	14	35.9
Degrees 2	13	33.3
Degrees 3	6	15.4
4th degree	4	10.3
Economic Level		
Low	20	51.3
High	19	48.7
Foot Care		
Obedient	32	82.1
Disobedient	7	17.9

The number of study respondents as many as 39 people who fit the criteria of inclusion that have been set. Table 1 shows that male respondents are more male with a percentage of 51.3% than women (48.7%). In addition, from table 1 it can also be seen that the most respondents with the age range of 56-65 years with the number of 17 people (43.6%). The most ulcer degrees are experience by patients with 1 degrees which amount to 14 people (35.9%) For the economy the most low-income as many as 20 people (51.3%). As

for foot care compliance in this study mostly fall into the category of obedient with the number of 32 people (82.1%).

Bivariate analysis was conducted to find out the economic level relationship with foot care compliance in DM patients suffering from diabetic foot ulcers. Pearman's Rank S statistical test results showed that there was no relationship or correlation between economic levels and foot care compliance. The Spearman Rank test obtained a correlation coefficient of 0.129 with a significance level of 0.432.

IV. Discussion

Wound care is an effort made on the body that aims at a complex and dynamic recovery process that results in continuous restoration of anatomy and function. The length of treatment of the wound depends on the stage of the wound experienced by the patient. If the stage of the wound reaches stage IV or the wound until the hypodermis disappears, hitting the bones, muscles and tendons, it requires long treatment at a high cost. Treatment of diabetic ulcer wounds is affected by several factors including low socioeconomic conditions, poor access to health services, poor educational status, living alone and smoking [(8),(9).]

The results of this study in accordance with the study [(10)] there was no significant association between income and foot care in DM patients, in contrast to the study [(11)] that income was significantly related to foot care. This study is in line with the study [(12)] which said there was no association between income and foot care. Individuals with high economic status may have high health behaviors as well, because they are able to reach the cost of care. Low levels of adherence can be due to the low perception of benefits gained if regular foot care can reduce disability due to amputation. People from all walks of life can practice foot care well. The state of income does not hinder in performing foot care because for the practice of foot care does not require a large cost, if the condition of the foot requires more intensive medical care from health workers in health care facilities, the government provides services in the form of health insurance for people who earn less.

Currently there are many options of diabetic ulcer treatment methods that can be adapted to the economic condition of the patient. Conventional treatment methods are wound treatment methods that use gauze as the primary treatment method. This method of treatment includes passive materials with their main function as protectors, maintaining warmth and covering up unpleasant appearances. In addition to conventional treatment methods, modern wound care can also be an option. Modern wound care should still pay attention to three stages, namely washing the wound, removing dead tissue, and choosing a wrap. Conventional wound care should often replace the gauze of the wound dressing, while modern wound care has the principle of maintaining the moisture of the wound by using materials such as hydrogel [(13).] The many choices of this type of wound treatment become an alternative option to minimize further complications of diabetic ulcers.

V. Conclusion

There was no significant association or correlation between economic levels and the patient's compliance with diabetic ulcer foot care.

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