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THE RELATIONSHIP OF SOCIO- ECONOMIC STATUS AND THE OCCURRENCE INJURY OF DIABETES MELLITUS PATIENTS

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Abstract

Socio-economic status includes a person's lack of education and income which can affect a person's health status. The purpose of this study was to determine whether there is a relationship between socioeconomic status and the incidence of injury in people with Diabetes Mellitus. The method used is a correlation analytic design, with a cross-sectional approach with a sample of 120 respondents. The instrument used was a questionnaire. The data were processed using the Spearman statistical test. The results showed that there was a significant relationship between socioeconomic status and the incidence of injury (p-value = 0.001; r = -0.313). Results of multivariate analysis in research using linear regression that shows that the R result is 0.343. The socioeconomic status regression coefficient on the incidence of injury was 0.185 while the regression coefficient for self-care activities on the incidence of injury was 0.133. A socio-economic status that includes education and income influences a person to carry out self-care management to prevent complications of Diabetes Mellitus, namely Diabetic ulcer.

Keywords: *Diabetes Mellitus; Incident Of Injury; Socio-Economic Status*

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1. Introduction

In the year 2018, there was an increase in cases of Diabetes Mellitus, namely as much as 8.5%, previously in 2013 only as much as 6.9% with an estimate of the population aged 15 years and over as the sufferer. This shows that Diabetes Mellitus in Indonesia is a very serious health problem. Meanwhile, the prevalence of Diabetes Mellitus in Central Java has increased by 2.1% in 2018 from 1.6% in 2013 (KEMENKES RI, 2019).

Based on the results of a preliminary study that was conducted at the Magelang District Health Office, it was found that in 2019 there were 6,483 people were suffering from Diabetes Mellitus in Magelang Regency. The data were obtained from several Public Health Care in Magelang Regency, the order of the five health centers with the most Diabetes Mellitus sufferers were Secang II Puskesmas with 1177 people, Puskesmas Bandongan with 481 people, Puskesmas Secang I with 449 people, Puskesmas Mertoyudan II with 426 people and Puskesmas Srumbung with 403 people.

Diabetes Mellitus is one of the health problems that has been given special attention in recent times. Diabetes Mellitus is also commonly known as the silent killer because this disease can be a risk factor for the emergence of various other diseases in the human body. The complications that can occur from Diabetes Mellitus are an increased risk of heart disease and stroke, neuropathy or nerve damage in the feet, Retinopathy Diabetic, renal failure, and even also death (KEMENKES RI, 2019).

Several factors can trigger Diabetes Mellitus such as environmental factors, unhealthy lifestyle, lack of activity, and stress besides. Diabetes Mellitus can also be influenced by the presence of hereditary factors. The increasing number of people with Diabetes Mellitus is influenced by several factors, namely age, lack of knowledge, obesity, unhealthy lifestyles, lack of physical activity, education, and socio-economic status (Binti Ida Umaya, 2017).

The complication of the Diabetes Mellitus who often are found in the presence of neuropathy Peripheral numbering as many as 10%-60% of patients with Diabetes Mellitus. The impact of the Neuropathy Peripheral these are the wounds of diabetic foot. A Diabetic ulcer is a complication of Diabetes Mellitus that occurs repeatedly and is serious with an annual incidence rate of 1% to 4% and has a risk of 15% to 25% for life (Mitasari, Saleh, and Marlenywati, 2014). Diabetic ulcers are sores that arise due to neurological disorders, blood vessel disorders, and infection. If the infection that occurs is not immediately treated properly, it will lead to decay even be amputated. Diabetic ulcers require long

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treatment in the hospital and become a burden not only on the patient but also on the community with considerable medical costs.

Several factors that may affect the long absence of process healing diabetic wounds, some of them factor wound care, the factors controlling the infection, age, diet, disease complications, their history of smoking, treatment factors , psychological, and so forth. Apart from the above factors, other factors can affect the wound healing process. Among other things, socio-economic factors, family support factors, chronic disease management program (PROLANIS) factors, physical activity factors, and the length of illness for people with Diabetes Mellitus (Veranita, 2016).

Generally, someone with low socioeconomic status has less awareness of care, this is due to the lack of knowledge of that person. Poor self-care awareness in controlling blood sugar levels in people with low socioeconomic status will have an increased risk of disease complications (Sari, 2017). Socio-economic status affects a person's health. Low socio-economic status can be associated with high mortality rates. Based on the research Krishnan et al (2010) titled "Socioeconomic status and incidence of type 2 Diabetes: Results from the black women's health study" showed that socioeconomic status consisting of income and education can affect the incidence of Diabetes Mellitus. Research shows that the neighborhood socio-economic status of individuals influences the risk of Diabetes Mellitus through mechanisms such as the availability of healthy eating or recreational facilities. The World Health Organization (2015) states, people who suffer from Diabetes Mellitus in the world exceed 347 million people. Of these 80% of deaths are in lower-middle-income countries. The possible number will increase significantly by 2030 without intervention.

Based on the above problems, researchers are interested in researching the relationship of socioeconomic status with the incidence of wounds in Diabetes Mellitus sufferers, because based on the existing research, there is no discussion of the relationship between socioeconomic status and the incidence of wounds in Diabetes Mellitus sufferers.

2. Method

The study design uses quantitative research and design using analytical correlation, with the approach of cross-sectional were a study using independent and dependent variables studied at the same time) to see their relationship Socio-Economic Status with Genesis Wounds in Patients with Diabetes Mellitus in Magelang regency year 2020. The population used in this study were all Diabetes Mellitus sufferers in Magelang Regency with a total of 6,483 people in January-December 2019. The data collection method used a questionnaire. The data analysis used was Univariate and Bivariate quantitati ve statistical techniques.

3. Results and Discussion

Univariate analysis is a description of the characteristics of respondents consisting of gender, age, occupation, and education.

Table 1. Frequency Distribution of Respondent Characteristics by Age, Status, and Gender in Magelang District

Category	amount	%
Age		
25-34	2	1.7
35-44	13	10.8
45-54	43	35.8
55-64	45	37.5
65-75	17	14.2
Marital status		
Single	1	0.8
Married	105	87.5
Widow	11	9.2
Widower	3	2.5
Gender		
Man	51	42.5
Women	69	57.5

Based on table 1. It can be seen that the frequency distribution of the most respondents is aged 55-64 years with a percentage of 37.5%. If seen from their marital status, it is known that most of the respondents are married with a percentage of 87.5%, whereas if viewed by gender, the number of female respondents is more than the number of male respondents with a percentage of 57.5%.

Based on table 2. Most of the respondents in Magelang Regency studied had low socioeconomic status, namely 88 people or about 73.7%, while respondents who had high socioeconomic status were 24 people or around 20.0%. Some of the respondents have low education, namely SD as many as 52 people with a percentage of 43.3%, while only 10 people who take university are taking the percentage of 8.3%. The majority of respondents' occupations are laborers/farmers, as many as 40 people with a percentage of 33.3%. Most respondents income <IDR 1,500,000, that is 40 people with a percentage of 33.3%. The vehicle that most respondents owned was motorbikes as many as 88 people with a percentage of 73.3%. Most of the respondents are members of the common people, as many as 110 people with a percentage of 91.7%.

Research results obtained respondent socio-economic status her height as many as 24 people with a percentage of 20.0%, from 24 people of high socioeconomic status only two people who suffered injuries incidence of Diabetes. Meanwhile, 88 respondents with low socio-economic status, with a percentage of 73.3%, of these 88 people, 35 experienced diabetes. This shows the

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higher her socioeconomic status of a person then will lower the incidence of diabetes wounds that occur in a person.

Table 2. Distribution of Respondents' Social Status

Category	amount	%
Socioeconomic Status		
High	24	20.0
Intermediate	8	6.7
Low	88	73.7
Education		
College	10	8.3
SMA	30	25.0
SMP	28	23.3
SD	52	43.4
Profession		
Civil servants	9	7.5
Entrepreneur / Trader	32	26.7
Laborers / Farmers	40	33.3
Retired	5	4.2
IRT	34	28.3
Income		
> IDR 3,500,000	18	15.0
IDR 2,500,000 - IDR 3,500,000	26	21.7
IDR 1,500,000 - IDR 2,500,000	36	30.0
<IDR 1,500,000	40	33.3
Owned facilities		
Car	24	20.0
Motorcycle	88	73.3
Bike	2	1.7
Do not have	6	5.0
Position in society		
Village / kelurahan apparatus	2	1.7
Village head	2	1.7
RT / RW management	6	5.0
Regular community members	110	91.7

The results of the study p-value 0.001 <0.05, mean that there is a significant relationship between socioeconomic status and the incidence of injury in people with Diabetes Mellitus in the Magelang Regency. Based on research, a socio-economic status which includes education and income is the most influencing factor for the incidence of injury. The research data show that individuals with higher socioeconomic status Average education last are SMA as many as 12 people and as many as 10 people Universities. The income of people with high socioeconomic status is on average> IDR 3,500,000.

One of the chronic complications that often occur due to Diabetes Mellitus is the presence of diabetic foot. Diabetic feet can be prevented by increasing compliance in managing independently, namely in the form of controlling blood sugar levels, as well as early detection to increase knowledge and attitudes of people with Diabetes Mellitus. This problem occurs due to a lack of good self-care (Bigdeli et al., 2015). (Bigdeli et al., 2015) . As for several factors that influence a person's self-care including age, education, knowledge, patient-doctor relationship, and long-suffering from Diabetes Mellitus. Other studies that describe gender and income are also factors that influence the self-care of Diabetes Mellitus patients (Ayele et al., 2012). Selfcare is behavior performed by someone with or at risk of Diabetes Mellitus to be able or successful in managing their disease (Shrivastava, Shrivastava, and Ramasamy, 2013). Self-care in patients with Diabetes Mellitus consists of dietary adjustments, dietary tight, doing physical activity regularly, continuously monitoring blood sugar, foot care, regular medication, and the consumption of oral hypoglycemic agents (Luthfa, 2019).

Respondents are at risk of having complications A with low education. This is in line with Sucipto's (2017) research that the high level of education of respondents affects the risk of diabetes complications management. The level of knowledge and education is high is expected to perform foot care appropriately to decrease the risk of complications. Education is one aspect of social status that has something to do with a person's health status. High knowledge can help a person in doing proper foot care. A person with a low level of education has poor self-care abilities (Akoit, 2015). Diabetes Mellitus patients with a low level of education need more information that can be obtained through health education by health workers to increase knowledge and awareness of self-care (Ariani, Sitorus, and Gayatri, 2012).

Apart from age and education, income affects a person's health status. A person with a higher income and a job status tends to live longer and is better at maintaining his health. Income and education are higher generate self-rated health better. These results support the research conducted by Sucipto (2017) that economic factors affect one's health, someone who has a high income will find it easier to choose health services. In line with Nurleli H's (2016) research, a highly educated person will better understand the disease, treatment, and management of Diabetes Mellitus.

Table 3. Distribution of the presence or absence of injuries to the respondents

Category	amount	%
There is	37	30.8
There is no	83	69.2

Based on table 3. It can be seen that some of the respondents studied did not have diabetes wounds, which were 83 people with a percentage of 69.2%.

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Distribution of Personal Care Activities

Table 4. Distribution of Personal Care Activities

Category	amount	%
Good	9	7.5
Enough	66	55.0
Less	45	37.5

Based on table 3, it was found that some respondents had a sufficient level of self-care activity, namely as many as 66 people with a percentage of 55.0%.

Bivariate analysis was used to determine the relationship between socioeconomic status and the incidence of injury in people with Diabetes Mellitus. This study used a questionnaire sheet collected from questionnaires to all people suffering from Diabetes Mellitus who reside in Magelang District. The Spearman Correlation Test is used to determine whether there is a relationship between the two variables. The following are the results of the research that has been done

Table 5. Relationship between Socio-Economic Status and Injury Incidence in Diabetes Mellitus Patients in Magelang Regency in 2020

	Incident injury					
Category	There is	There is no	amount	%	R	P
Social status						
High	2	22	24	20.0	-0.313	0.001
Intermediate	0	8	8	6.7		
Low	35	53	88	73.7		
amount	37	83	120	100		

Table 6. Multiple Correlation Analysis

	R	R Square	Adjusted R Square	Std. The Error of the Estimate	F
Model	0.343	0.117	0.102	0.439	7,778

There is a significant relationship between socioeconomic status and the incidence of injury in people with Diabetes Mellitus in Magelang Regency (p-value: 0.001, r: -0.313).

The results of the analysis show that the correlation is in the interval 0.20 <KK≤0.40 with a negative direction and a low closeness, namely the correlation coefficient - 0.313, which means that the higher the socioeconomic status, the lower the incidence of diabetes wounds that will occur to a person.

Agree with research obtained from Amelia et al (2014) that someone with a higher socioeconomic status, namely 76.4%, has a better habit of preventing complications of Diabetes Mellitus. This study proves that patients whose income is much higher were able to buy and arrange food according to diet. The same thing is confirmed by Nazemi, T. (2015) in a study on diabetes prevention and management, it was explained that socio-economic factors, namely income, affect the management of diabetes complications prevention. Revenue wills are related to the ability of people in examinations, provision of food, and the provision of treatment.

Multivariate analysis was used to determine the contribution of socioeconomic status and self-care activities to the incidence of injury. The multivariate analysis uses multiple linear regression analysis, with the following results in table 6.

Based on the results of the multivariate test above, it can be seen that the R result is 0.343. This can indicate that there is a low relationship between socioeconomic status and self-care activities to the incidence of injury. The result of F count is 7,778> F table is 3.070 which shows that there is a significant relationship between socioeconomic status and self-care activities on the incidence of injury.

Table 7. Partial Regression Coefficient Test (t-test)

Variable	Regression Coefficient	t
Constant	1,656	9. 773
Socio-Economic Status	0.185	- 3,680
Self-Care Activities	0.133	1,962

Based on table 7 is known that the regression coefficient of socioeconomic status on the incidence of injuries by 0185 while the regression coefficient of self-care activities on the incidence of injuries by 0133. The t value of socioeconomic status with the incidence of injury is -3,680 and the t value of self-care activities with the incidence of injury is 1,965, which means that there is a significant relationship between socioeconomic status and self-care activities with the incidence of injuries.

The existence of a positive relationship between the status of social economy with self-care behavior, ie where the person whose status socioeconomic is more high scores self-care

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behavior that is high also compared to someone the status socioeconomic its low. It was emphasized by Svartholm (2010) that a person's socioeconomic status will influence self-care behavior. Diabetes Mellitussufferers with high socioeconomic status have better self-care behavior. This is different from the results of PERKENI's (2015) study that there is no effect of income on self-care ability because the availability of facilities such as BPJS and PROLANIS makes it easy for Diabetes Mellitus sufferers to routinely control blood sugar as an aspect of self-care. So the researchers assume that high and low socioeconomic status can still do self-care behavior well in everyday life. Low-income families the government has been providing services in the form of health insurance called BPJS that help people with low economic status to get free health care. BPJS program will help the patients with Diabetes Mellitus with the status of social economy low for monitoring health status and monitoring blood sugar more regularly. For patients with higher socioeconomic status, there will be no obstacles to monitoring blood sugar regularly due to financial support.

Padma et al. (2012) revealed that people with Diabetes Mellitus can do self-care regularly to control their glycemic load better. while self-care according to the opinion of Orem, activities by individuals to meet the basic needs of life. The purpose of implementing self-care is so that a person can maintain his life, health, and well-being in a healthier state (Smeltzer & Bare, 2015). In Orem's understanding, self-care is an individual activity carried out to be more effective, controlled, and more consistent (Verchota et al., 2010). Similar results in the study by research Gao et al (2013) show that diabetes self-care will have an impact on the level of glycemic control.

4. Conclusions and suggestions

The results of this study found that the socioeconomic status which includes education and income influences a person to carry out self-care management to prevent complications of Diabetes Mellitus, namely in the form of diabetes wounds. Some self-care that can be done is setting diet, physical activity routine, drug use is right and monitoring of blood glucose levels are independent. People with high socioeconomic status usually have better self-care activities than people with low socioeconomic status. Low economic status is more likely to not have awareness for treatment than high economic status, this is influenced by financial limitations and lack of knowledge about Diabetes Mellitus. Financial limitations and lack of education will hinder monitoring of health conditions and conducting regular blood sugar monitoring. As a result, if blood sugar is not monitored regularly, blood sugar in the body will increase and will lead to complications, namely diabetes wounds.

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