



Relationship Between Sleep Quality and Quality of Life in Diabetic Ulcer Patients

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Abstract

Background: Diabetes mellitus (DM) is a significant prevalence that occurs making Indonesia ranked sixth in the world. Diabetes mellitus can totally affect the quality of life of diabetic patients with complications, ulcers are complications that affect the quality of life of DM patients. One of the factors that can affect the quality of life of DM patients is sleep quality. **Purpose:** Knowing the relationship between sleep quality and quality of life in patients with diabetic ulcers. **Methods:** This type of research is analytic research with a correlational design with a cross-sectional approach. The sampling technique in this study was total sampling with a sample size of 36 respondents. Data analysis using the Chi-square test. **Results:** It was found that there were 32 respondents (88.9%) experiencing moderate sleep quality and there were 30 respondents (83.3%) who had a negative quality of life. **Results:** statistical test of the relationship between sleep quality and quality of life showed a statistical test p value = 0.662 or a significance value $> \alpha = 0.05$, which means that there is no significant relationship between sleep quality and the quality of life of patients with diabetic ulcers. **Conclusion:** There is no relationship between sleep quality and the quality of life of patients with diabetic ulcers at the Griya puspa wound care clinic, Sleman Regency. Researchers suggest that respondents who have poor sleep quality are expected to improve their quality of life by improving physical health, leisure time, independence, managing emotions and performing good ulcer care.

Keywords: Diabetes Mellitus, Sleep Quality, and Quality of Life

Introduction:

Diabetes Mellitus or commonly abbreviated as DM is a group of metabolic diseases characterized by elevated glucose levels (hyperglycemia) caused by abnormalities in insulin secretion, insulin action or both [1]. According to the World Health Organization (WHO) in 2001, 8.5% of adults in the world suffered from diabetes mellitus and in 2016, diabetes has caused 1.6 million deaths. The presence of complications in patients will further worsen the quality of life in Diabetes

Mellitus patients. The Basic Health Research showed a significant increase, from 6.9% in 2013 to 8.5% in 2018, so that the estimated number of sufferers in Indonesia reached more than 16 million people who were then at risk of developing other diseases [2].

Diabetes mellitus is one of the chronic diseases that cannot be completely cured which affects Diabetes Quality of Life (DQOL). The presence of complications in patients will further worsen the quality of life in Diabetes

Mellitus patients [3]. Diabetic ulcers can occur due to a decrease in the healing ability of peripheral soft tissues which causes diabetic ulcers [4]. The relationship between sleep quality and quality of life has been proven by the results of previous studies which show that sleep quality has a negative relationship with quality of life. [5], pasien, pada tahun 2018 sejumlah 58 pasien, dan pada tahun 2019 total jumlah pasien periode Januari - Agustus sejumlah 59 pasien dengan pasien luka ulkus diabetes sebanyak 37 pasien Dalam masalah gangguan tidur, didapatkan sebanyak 3 dari 10 orang (30%) mengeluhkan adanya gangguan tidur berupa sering terbangun pada malam hari. Berdasarkan latar belakang diatas peneliti ingin mengetahui hubungan kualitas tidur terhadap kualitas hidup pada pasien dengan ulkus diabetes di klinik perawatan luka Yogyakarta.

Methods

The research method used in this study is descriptive correlation, with the time approach used, namely cross sectional (cross-sectional), where the researcher only observes and measures variables at one specific time [6]. The population in this study were all patients with a medical diagnosis of DM with complications of grade I-IV ulcers and undergoing treatment at the wound care clinic. The total population was 36 respondents. The sampling technique in this study was the total side technique, which is the same sampling technique as the population [7]. The sample size in this study was 36 samples. The instruments used are the quality of life questionnaire in DM patients (DSF-SF) and the sleep quality questionnaire (PSQI). Based on the results of preliminary studies at the Yogyakarta wound care clinic. Data obtained from DM patients with diabetic foot wounds who underwent outpatient care in 2017 amounted to 74.

Results

Results

Tabel 1. Respondent characteristics

No	Characteristics	Frequency (f)	Percentage (%)
1.	Age		
	26-35 years	2	5.6
	36-45 years	2	5.6
	46-55 years	10	27.8
	56-65 years	12	33.3
	>65 years	10	27.8
2.	Gender		
	Male	14	38.9
	Female	22	61.1
3.	Education		
	Not in school	2	5.6
	Elementary school	10	27.8
	Junior high school	8	22.2
	High school	8	22.2
	College	8	22.2
4.	Employment status		
	Employed	13	36.1
	Not working	19	52.8
	Retired	4	11.1
5.	Marital status		
	Married	34	94.4
	Not married	2	5.6
6.	Income		
	<1.500.000	10	27.8
	>1.500.000	26	72.2
7	Health insurance		
	owned by: BPJS	33	91.7
	Commercial health insurance	0	0.0
	JamKesNas	0	0.0
	Commercial	3	8.3
	Do not have health insurance		

Based on sociodemographic characteristics, it was concluded that the age of patients with diabetic ulcers was greater in the age range of 56-65 years with 12 respondents (33.3%). In the gender characteristics of the largest respondents were women with 22 respondents (61.1%), educational characteristics were in elementary school (SD) with the number of

respondents (27.8%), work characteristics were still working with the number of respondents 13 respondents (36.1%) for the most marital status, namely those who were married with 34 respondents or (94.4%). for the average income status at > 1,500,000 as many as 26 respondents (72.2%). And for the most health insurance is BPJS insurance, namely 33 respondents (91.7%).

Sleep Quality

Table 2 Distribution of Mean Value of Respondents' Sleep Quality at the Griya Puspa wound care clinic Yogyakarta Sleman district in December 2019 (n=36).

Category	Frequency (f)	Percentage (%)
Good	3	8,3
Medium	32	88.9
Bad	1	2.8

Based on table 2 above of 36 respondents through the results of the questionnaire sheet showed 32 respondents with moderate sleep quality (88.9%), 3 respondents with good sleep quality (8.3%) and poor quality as many as 1 respondent (2.8%). Bad category as many as 1 respondent (2.8%).

Quality of Life

Table 3 Distribution Table of the results of measuring the quality of life of respondents at the Griya Puspa Wound Care Clinic Yogyakarta Sleman Regency in December 2019 (n = 36)

Category	Value	Frequency (f)	Percentage (%)
Quality Life	Positif	6	16.7
	Negatif	30	83.3

Based on table 3, the quality of life value of 36 respondents through filling out the DSF-SF questionnaire explained that respondents with a positive quality of life were 6 respondents (16.7%) while

respondents who had a negative quality of life were 30 respondents (83.3%).

Table 4 Results of Crosstabulation Analysis of Sleep Quality on Quality of Life of patients with diabetic ulcers at the Griya Puspa Wound Care Clinic Yogyakarta Sleman Regency in December 2019 (n = 36)

Sleep Quality	Quality of Life				Σn	p-value
	Positive	Negatife				
Good	1	16.6	2	6.6	0	p=0.662
Medium	5	83.3	27	90.0	17	
Bad	0	0.0	1	3.3	19	

The results of the analysis of table 4 between sleep quality and quality of life show the results of the statistical test p value = 0.662 or the significance value > a = 0.05 therefore p > a then shows that Ha is rejected or there is no significant relationship between sleep quality and quality of life of patients with diabetic ulcers.

Discussions
Sleep Quality

The results of this study showed an average value of 88.9% which was classified as moderate sleep quality as many as 32 respondents and 8.3% good sleep quality as many as 3 respondents, while for good sleep quality as many as 3 respondents (8.9%), and poor sleep quality value 1 respondent (2.8%). These results are not in line with [8], which shows the percentage of respondents who have poor sleep quality is 34.7%, and the percentage for good sleep quality is 65.3%. 2.

Respondents with poor quality of life had a percentage of 33.3 and for respondents with good quality of life the percentage was 66.7. 3. There is a significant relationship between sleep quality and quality of life in coastal communities in the general village of two. This statement is reinforced by Research by

[9], concluded that poor sleep quality and sleep disturbances can be influenced by several factors. One of them is peripheral neuropathy pain and nocturia associated with diabetes more than half (61%) of respondents reported that they had to get up to use the bathroom at night 3 or more times a week and about a quarter (28%) of respondents reported experiencing pain that interrupted sleep at least 1 or more times per week.

Quality of Life of DM Patients

The results of table 4.8 obtained the quality of life value of 36 respondents through filling out the DSF-SF questionnaire explained that respondents with a positive quality of life were 6 respondents (16.7%) while respondents who had a negative quality of life were 30 respondents (83.3%). In the results of the analysis of 5 domains, it was found that in the leisure domain the most data that appeared was that respondents had a negative quality of life, namely 29 respondents (80.6%).

In the physical health domain, the most emerging data is negative quality of life, namely 31 respondents (86.1%), and in the independence domain there are 32 respondents (88.9%) who have a negative quality of life. In the domain of negative emotions there were 32 respondents (88.9%) who had a negative quality of life, while in the domain of disturbed ulcer care there were 29 respondents (80.6%) who had a negative quality of life. In this study, it was found that the most emerging results stated that all 5 domains had negative quality of life values.

Quality of life is the degree of satisfaction in life as a man and woman, seen through the dimensions of the value system and culture of each region, besides having ties to their joy, standard of living, desires and concerns. Quality of life includes physical health, psychological state, level of satisfaction, social relationships, and links to their future

desires [10], The relationship between sleep quality and quality of life of patients with diabetic ulcers. Bivariate analysis was performed to assess the correlation between sleep quality and quality of life of patients with diabetic ulcers.

This analysis was performed with the Chi square statistical test. The test results obtained a value of $p = 1,000$. or significance value $> \alpha = 0.05$ therefore $p > \alpha$ then indicates that H_0 is rejected or there is no significant relationship between blood sugar levels and the quality of life of patients with diabetic ulcers. Based on Table 4.13 crosstabulation analysis of sleep quality on the quality of life of diabetic ulcer patients at the Griya Puspa wound care clinic, 5 respondents (83.3%) were categorized as positive quality of life with moderate sleep quality, and 27 respondents (90.0%) were categorized as negative quality of life with moderate sleep quality. and 2 respondents (6.6%) were categorized as positive quality of life with good sleep quality, and 1 respondent (3.3%) was categorized as negative quality of life with poor sleep quality.

The results of the study concluded that statistically there was no significant relationship between sleep quality and the quality of life of patients with diabetic ulcers, because the results of sleep quality which were categorized as moderate were considered by some patients to be commonplace. The results of the study are in line with the research of [11], that there is no significant relationship between sleep quality and the quality of life of DM patients from the data results based on the Fisher's Exact test with the SPSS program obtained the result $p = 0.685$ where $p > 0.05$ which means there is no statistically significant relationship between sleep quality and quality of life in patients with type 2 diabetes mellitus. There is no relationship between sleep quality and quality of life due to other factors that must be assessed in assessing aspects of quality of life [12,13]. This suggests there are other

factors that have a stronger relationship with quality of life in patients with diabetic ulcers. Possible other factors are gender, age, education, complications, family support and economic status [5,14,15]. According to there is a relationship between age, education level, complications and family support on the quality of life of DM patients [16].

Limitations

Researchers experienced obstacles in equalizing the language used by researchers with respondents. The average respondent uses Javanese which is difficult for researchers to understand, allowing misinterpretation between respondents and researchers.

Conclusions

There is no relationship between sleep quality and quality of life of diabetic ulcer patients at the Griya puspa wound care clinic, Sleman Regency. Researchers suggest that respondents who have poor sleep quality are expected to improve their quality of life by improving physical health, leisure time, independence, managing emotions and doing exercise.

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Conflic of Interest Statement

The authors declared no conflict of interest

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