

Correlation between Self Efficacy and Coping Mechanism in Patients with Type 2 Diabetes Mellitus

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ABSTRACT

Patients with Diabetes mellitus can experience psychological distress that is stress, depression, and anxiety. Psychological disorders in diabetic patients caused by changes in behavior in everyday life such as physical activity, regular blood glucose control, continuous drug consumption, proper diet, and avoid foot wounds. The patient's response to stress depends on positive coping mechanisms. Positive self-belief or self-efficacy of a patient to the treatment of his illness can increase positive coping mechanisms. This study aims to explain the relationship between self-efficacy with coping mechanisms in patients with type 2 diabetes mellitus. This study used correlation research design with a cross-sectional approach. Sampling technique in this study used consecutive sampling with respondents 36 outpatients type 2 diabetes mellitus in dr. Haryoto Hospital at Lumajang. Data was obtained by giving questionnaires of the Diabetes Management Self Efficacy Scale (DMSES) and the Cope Inventory, analyzed by using Spearman Rank correlation test. This study showed a significant relationship between self-efficacy and coping mechanism ($p=0.001$) with a strong and positive correlation ($r=0.673$) which shows the higher self-efficacy of the patient then the coping mechanism will better. Patients with type 2 diabetes mellitus who have high self-efficacy in the treatments will have good coping mechanisms in dealing with psychological distress such as stress, depression, and anxiety

Keywords: self-efficacy; coping mechanism; diabetes mellitus

INTRODUCTION

Diabetes Mellitus is a chronic disease that can have a negative impact on the body, both physically and psychologically. Physical disorders include polyuria, polydipsia, polyphagia, fatigue, and drowsiness. Psychological impacts that occur include anxiety, grieving, anger, shame, guilt, hopelessness, depression, loneliness, and helplessness (Smeltzer & Bare, 2002).

The prevalence of DM in the world with the age of 20-79 years in 2015 is 415 million people and is estimated to reach 642 million by 2040. The number of DM patients in Indonesia is 10 million in 2015 and the DM mortality rate in Indonesia is 185 thousand (International Diabetes Federation (IDF), 2015). The prevalence of DM in East Java has increased from 2007 at 1.8% to 2.5% in 2013. East Java ranks in the 10th provinces with DM in Indonesia (Kementerian Kesehatan RI, 2013). Based on the 2012 Annual Hospital Report, diabetes mellitus was among the 10 most cases of the disease (Dinas Kesehatan Provinsi Jawa Timur, 2013).

Type 2 DM patients experience many changes in their life habits such as blood sugar control, physical activity, drug consumption, and diet that must be done routinely. Changes in life make DM patients show negative psychological reactions such as stress, anxiety, anger, and feeling useless. Psychological reactions that often occur in DM patients are stress (Maghfirah, Sudiana, & Widyawati, 2015; Nistiandani, Rondhianto, & Rozsy, 2021). DM patients when suffering from stress depend on their coping (Snyder, 1999). The ability to adapt to traumatic situations called resilience will form a coping mechanism that will affect mental health (Kurniyawan, Dewi, Wuryaningsih, etc. 2022). DM patients who cannot use coping mechanisms and fail to adapt to stress will experience physical and mental disorders (Rasmun, 2004; Huda & Prasetyowati, 2017; Intiyaskanti, Dewi, & Kurniyawan, 2021; Patuh, Wuryaningsih, & Afandi, 2021). The results of the research found that DM patients who had ineffective coping were 46,5% (Hidayat, Hamid, & Mustikasari, 2014). Another research showed respondents who had a maladaptive coping mechanism were 37,5% (Taluta, Mulyadi, & Hamel, 2014).

Patients who have strong self-efficacy will have high goals and be firm in their goals. Conversely, patients with weak self-efficacy will have a weak goal, so that it becomes disobedient in self-care. Self-efficacy will support the self-control process in maintaining appropriate behavior in the management of self-care for DM patients (Kott, 2008). The results of the research showed that DM patients who had poor self-efficacy were 47.3% (Ariani, 2011). While another result of research showed that DM patients who had poor self-efficacy were 30.9% (Kusuma & Hidayati, 2013).

METHOD

This research is a correlation study using a cross-sectional study design. Respondents in this study were outpatients with type 2 diabetes mellitus at dr. Haryoto Hospital as many as 36 people. The research sampling technique used consecutive sampling. The inclusion criteria used were patients diagnosed with type 2 diabetes mellitus, patients aged 40-65 years, and able to communicate well. Whereas the exclusion criteria are type 2 diabetes patients who experience severe physical disorders; patients who have complications such as stroke, hypertension, kidney failure, heart failure, and diabetic ulcer; and patients who have physical limitations such as blindness and deafness.

Self-efficacy instruments using the Diabetes Management Self Efficacy Scale (DMSES) questionnaire translated in Bahasa Indonesia (Rondhianto, 2012). Instrument coping mechanism uses Cope inventory which is translated in Bahasa Indonesia (Rahmaturrizqi, 2012). Normality data Test of self-efficacy and coping behavior using the Shapiro-Wilk Test. Data were analyzed using the Spearman test.

RESULT

Characteristics of respondents based on the type of data are categorized into numerical data and categorical data. Numerical data contains the age and duration of DM; and categorical data containing gender, level of education, occupation, and marital status.

Table 1. Distribution of Respondents based on Age and duration of experience with DM at dr. Haryoto Hospital (n = 36)

Variable	Mean	Median	Mode	SD	Min-Max
Age (years)	54.53	55.00	50	6.03	43-65
Duration DM (years)	7.85	7.0	15.0	5.19	0.17-16

The average age of the research respondents is based on table 1 which is 55 years with a standard deviation of 6.031. The youngest age is 43 years and the oldest age is 65 years. The average patient suffered DM for 7.85 years with a minimum duration of 0.17 years or 2 months and the longest time is 16 years. Characteristics of respondents based on gender, level of education, occupation, and marital status in table 2 show: more female respondents than men (66.7%), most of the respondent's education is bachelor (33.3%), most of them were working (55.6%), and their marital status was mostly married (91.7%).

Table 2. Frequency distribution of respondents based on gender, level of education, occupation, and marital status (n = 36)

Variable	Percentage (%)
Gender	
Male	33.3
Female	66.7
Level of education	
College	33.3
High school	22.2
Junior high school	19.4
Elementary school	25.0
Occupation	
No work	44.4
Work	55.6
Marital status	
Married	91.7
Single	0.0
Widow/widower	8.3

Self-efficacy and coping mechanism variables are presented in numerical data. The results of data analysis on the correlation between self-efficacy and coping mechanism on DM patient can be seen in table 3.

Table 3. data analysis on the correlation between self-efficacy and coping mechanisms in type 2 DM outpatients (n = 36)

Variable	Mean	Median	Mode	SD	Min-Max	R	p
Self-efficacy	61.25	64.50	53	11.936	38-81	0.673	0.000
Coping mechanism	77.42	77.00	69	7.217	68-94		

Based on table 3, the average value of respondent's self-efficacy is 61.25 with a standard deviation of 11.936. The middle value of self-efficacy is 64.50 and the value that often appears is 53. The lowest value self-efficacy is 38 and the highest value self-efficacy is 81. The average value of the respondent's coping mechanism of the research is 77.42 with a standard deviation of 77.00. The middle value of the coping mechanism is 77.00 and the value that often appears is 69. The lowest coping mechanism value is 68 and the highest coping mechanism value is 94. The Correlations between self-efficacy and coping mechanisms in type 2 DM outpatients at dr. Haryoto Hospital based on the results of the Spearman statistical test obtained p-value = 0,001 which indicates that there is a correlation between self-efficacy and coping mechanisms. The value of the Spearman correlation of 0.673 shows a positive correlation with the strength of a strong correlation, meaning that the higher the value of self-efficacy, the coping mechanism of patients becomes more adaptive.

DISCUSSION

The results of this study showed that the average value of self-efficacy of the respondents was 61.25 with a standard deviation of 11.936. The results of the Kusuma study (2013) showed that the majority of respondents (69.1%) had good self-efficacy. According to the result of research, 83.3% of respondents had good self-efficacy (Suryani, 2014). Another study showed that almost all patients (94%) had good self-efficacy (Siahaan, 2015). While the other research found 57.6% of respondents had moderate self-efficacy levels (Astuti, 2014). The high level of self-efficacy in respondents was due to the existence of good health education that had been given by health educator and understood by patients. While low self-efficacy is caused by uncertainty about the compliance of diabetes self-management possessed by DM patients so that the management of diabetes mellitus cannot run well which ultimately can lead to complications of DM disease (Tamodaran, 2015).

In this study, the indicators of self-efficacy consisted of 5 indicators including confidence in the ability to check blood sugar, regulate diet and maintain ideal body weight, physical activity, foot care, and take treatment programs. The lowest number of scores on the item statement is a statement about the ability to self-check blood sugar levels with 27 patients answering uncertainly. Respondents said they were not sure to check their own blood sugar because they did not have the tools and relied on laboratory tests. Self-monitoring of blood sugar by patients at home is an important part of treating type 2 DM (Baradero, Dayrit, & Siswadi, 2009). Monitoring blood sugar at home is one of the accurate and practical ways to monitor blood glucose control every day. Patients who say they are not sure to check their blood sugar levels need to be given health education regarding the importance of checking blood sugar levels regularly and prevent complications of DM.

Item statement about the ability to feel symptoms when hyperglycemia and the handling ability, there were 7 patients who answered uncertainly because the patient did not know that these symptoms were symptoms of hyperglycemia and considered a symptom of a common disease. There were 7 patients who answered uncertainly about the ability to feel hypoglycemia symptoms because patients have never experienced low blood sugar levels. There were 6 patients who answered with uncertainty about physical activities or sports because of being tired and not having enough time.

The results of this study indicate the average value of the coping mechanism of the research respondents is 77.42 with a standard deviation of 77.00. According to the result of research, 85.7% of respondents had adaptive coping mechanisms (Nasution, 2014). Another research showed respondents who had an adaptive coping mechanism were 83.3% (Suryani, 2014). The other study showed that 62% of respondents had adaptive coping mechanisms (Taluta, Mulyadi, & Hamel, 2014). DM has a negative impact on the physical and psychological. Psychological impacts that occur to DM patients include anxiety, grieving, anger, shame, guilt, hopelessness, depression, loneliness, and helplessness (Smeltzer & Bare, 2002). Psychological reactions that often occur in DM patients are stressfull (Maghfirah, Sudiana, & Widyawati, 2015). Adaptive coping is used by patients in dealing with stress (Snyder, 1999). The highest score of the indicator of coping mechanism is religion coping which consists of 2 statements: closeness to God after experiencing DM

and praying for healing, both of which are approved by 34 patients. Patients after being diagnosed with DM began to get closer to God and always prayed for their recovery.

Correlation between self-efficacy and coping mechanism in outpatients type 2 DM in dr. Haryoto Hospital based on the results of the Spearman statistical test obtained p-value = 0,001 which shows a significant relationship between self-efficacy and coping mechanisms. The Spearman correlation value of 0.673 shows a positive correlation with a strong correlation strength. This means that the higher the value of self-efficacy will make the coping mechanism higher in DM patients. According to the result of research, the analysis of the correlation between self-efficacy and coping mechanisms in gangrenous DM patients showed a positive correlation but have a weak relationship (0.324) (Suryani, 2014). While another result of research on other diseases showed that of 72 patients with chronic renal failure undergoing hemodialysis therapy, 32 people (68.1%) had adaptive coping and high self-efficacy (Mutoharoh, 2010).

Individuals with a perception of low self-efficacy will be vulnerable to stress and depression (Bandura, 1994). Depression can contribute to a decrease in physical and mental function that causes a person to become lazy to do daily self-care routinely which causes low glycemic control and increases the risk of complications (Ariani, 2011). Good self-efficacy can improve the quality of life of patients who are in the process of treatment (Afandi & Kurniyawan, 2018). Nurses must provide good education and exercise such as Taichi to DM patients in order to self-care so as to prevent complications (Fahra, Widayati, & Sutawardana, 2017; Kurdi, Abidin, Priyanti, & Kholis, 2021). Group supportive therapy can be carried out between DM patients to share their experiences and knowledge in carrying out self-care so that they can improve patient coping mechanisms (Liyarovitasari, Hamdani, & Astari, 2017).

CONCLUSION

Patient's self-efficacy is one of the internal factors to adapt to external stimuli. A person with high self-efficacy has confidence and ability in self-care. Self-efficacy will encourage patients to achieve health as expected. Encouragement or motivation in DM patients affects DM care behavior. Someone who has motivation will maintain adaptive coping. This study indicates the importance of providing nursing care to patient psychology with type 2 diabetes mellitus to improve self-efficacy and coping mechanism.

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