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The relationship of self efficacy with diet compliance in diabetes mellitus patients

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Abstract---Diabetes mellitus is a global disease that requires optimal handling and control behavior. IDF presented data that the number of people with DM from a population around the world was 425 million people in 2017. Dietary imbalance is the highest risk factor for DM in Indonesia. Obedience attitude In running the diet needs to be grown with supporting factors including self-efficacy in the patient. This study aims to determine the relationship between self-efficacy and dietary compliance in people with diabetes mellitus in Posbindu, Kepuh Village, Boyolangu District, Tulungagung Regency in 2020. The design of this research is descriptive correlational with cross sectional approach where the research subjects are only observed once at a time. The population in this study were all patients with diabetes mellitus in Posbindu Desa Kepuh with 45 respondents, using purposive sampling technique found 34 respondents based on inclusion and exclusion criteria. Retrieval of data using questionnaire sheets, then the data were analyzed using the Spearman Rho statistical test. The results of the Spearman Rho test analysis show that the p-value is $0.000 < 0.05$, then H_0 is rejected and H_1 is accepted, which means that there is a relationship between Self Efficacy and Diet Compliance with Diabetes Mellitus Patients in Posbindu, Kepuh Village, Boyolangu District, Tulungagung Regency in 2020. Based on the results of the research above, it is proven that there is a relationship between self-efficacy and dietary adherence in DM sufferers. Self-efficacy has a close relationship with dietary adherence, someone with high self-efficacy will have a good adherence attitude and vice versa. So that self-efficacy is the most important factor to foster obedience in running a diet.

Keywords---diabetes mellitus, diet compliance, self efficacy.

Introduction

In the current era, one of the non-communicable diseases (PTM) that has attracted a lot of public attention is Diabetes Mellitus (DM). Diabetes Mellitus refers to a series of metabolic disorders manifested by elevated blood sugar due to defects in insulin secretion, insulin action, or both (Smeltzer, 2013). DM patients are diagnosed if their fasting blood glucose level is >126 mg/dl or blood glucose levels for 2 hours postprandial are >200 mg/dl (Firdaus, 2017). Serious treatment is needed because Diabetes mellitus is a global disease, with optimal DM control behavior planning as a support (Rizqah, 2018). The problem in handling DM sufferers is the ability to organize diet patterns, activities and health monitoring (Malayanita, 2017). Dietary imbalance is the highest risk factor for DM in Indonesia. Obedience attitude In running the diet needs to be grown with supporting factors including self-efficacy in the patient. Self efficacy is an individual's belief in carrying out their duties. In reality today, it is still very difficult for sufferers to adhere to a predetermined diet.

Rahmi, 2018 mentions that one of the causes of this is the lack of self-confidence (Self Efficacy) in sufferers in carrying out the diet. Often saturation is a condition that arises due to a disease that does not go away even though diabetics feel they have adjusted their diet properly. This has an effect on careless food management, so that blood sugar levels become out of control. With many patients who still do not adhere to the diet, it proves that patients are still not able to organize self-efficacy towards the diabetes mellitus diet pattern.

The International Diabetes Federation (IDF) released data on the number of DM sufferers as many as 425 million people from the total world population in 2017. Indonesia is the 6th largest contributor to DM sufferers with the number of sufferers reaching 10.3 million. This number is expected to continue to increase to reach 16.7 million by 2045 (IDF, 2017). Basic Health Research Information (Riskesmas) states that the prevalence of diabetes in Indonesia has increased significantly over the last five years, namely 6.9% in 2013 and increased to 8.5% in 2018. According to the East Java Provincial Health Office in 2017, the number of people with diabetes increased to 32,536 inhabitants. In Tulungagung Regency alone, the prevalence of DM was 2,172 in 2015 and increased to 4,767 people in 2017 according to data from the Tulungagung Health Office. Some research results also show a low percentage of DM dietary compliance. Research by Risnasari in 2014 in Kediri Regency showed that 43.86% of patients adhered to the diet and 56.14% of patients did not adhere to the DM diet. Meanwhile, dietary compliance itself is influenced by self-efficacy, as evidenced by research by Hilda Rahmi in 2018 which stated that DM patients with high self-efficacy were 37.5% and low self-efficacy was 62.5% (Rahmi, 2018).

As a result of non-compliance with the diet, blood sugar levels are not well controlled and there is a risk of complications, even physical conditions will often experience weakness. The purpose of this diet is to maintain blood sugar levels to remain within normal limits and to improve health status comprehensively through optimal nutrition (Rizqah, 2018). When running a diabetes diet, it is necessary to have awareness and intention (Self Efficacy) from the individual himself to comply with it. Efforts can be made to foster an attitude of adherence

to the diet, the patient must have Self Efficacy or self-confidence. Individuals with high self-efficacy will encourage them to be active in their efforts, on the contrary those with low self-efficacy will consider themselves unable to do something that has been assigned (Ghufron, 2010).

Self-efficacy or strong beliefs play an important role in overcoming various situations including conditions when they are sick, so those with high self-efficacy will encourage them to be active in carrying out their duties such as being obedient in undergoing a DM diet. Based on the description above, researchers are interested in conducting a study entitled "The Relationship of Self Efficacy with Diet Compliance" in people with diabetes mellitus in Posbindu, Kepuh Village, Boyolangu District, Tulungagung Regency in 2020. The purpose of this study was to determine the relationship between self efficacy and dietary compliance in patients with diabetes mellitus. The hypothesis of this study is that there is a relationship between Self Efficacy and dietary compliance in people with Diabetes Mellitus.

Method

This study used a cross sectional approach, with a population of all people with diabetes mellitus in Posbindu, Kepuh Village, Boyolangu District, Tulungagung Regency. The sample in this study were 34 people. Collecting data using self-efficacy and dietary compliance questionnaires in patients with diabetes mellitus. This research was conducted in March 2020. Data analysis used Spearman Rho correlation statistical test. If the p value <0.05 , then H1 is accepted, which means that there is a relationship between self-efficacy and dietary compliance. If the p value >0.05 then H1 is rejected, which means that there is no relationship between self-efficacy and dietary compliance. Ethics in this study included Informed consent, anonymous, and confidentiality.

Results

Table 1
Distribution of General Data Characteristics of Respondents

General data	f	%
Gender		
Male	13	38
Female	21	62
Age		
31-40	1	3
41-50	7	21
>50	26	76
Sick for a long time		
6 bl	9	26
>6 months	25	74
Education		
SD	12	35
JUNIOR HIGH SCHOOL	8	24

SENIOR HIGH SCHOOL	10	29
PT	4	12
Work		
entrepreneur	19	29
Farm workers	9	27
Civil Servants/Employees	5	15
Not working/IRT	10	29

Based on research data, it shows that the characteristics of the respondents are mostly female (62%), Based on age, almost all respondents are >50 years old (76%), Based on the length of illness, most of the respondents suffer from diabetes mellitus for >6 months (74%). Based on education level, almost half of the respondents are elementary school graduates (35%). Characteristics of respondents based on occupation, almost half of them work as entrepreneurs or traders (29%) and those who do not work or as housewives (29%).

Self Efficacy

Table 2
Frequency Distribution of Respondents Self Efficacy (n=34)

Self Efficacy	f	%
High	29	85,3
Low	5	14,7

Table 1 above shows that almost all of the respondents (85.3%) have high self-efficacy.

Diet Compliance

Table 3
Frequency Distribution of Respondents Diet Compliance

Diet Compliance	f	%
Obey	25	73,5
Not obey	9	26,5

Table 3 above shows that most of the respondents (73.5%) adhere to the diabetes mellitus diet.

Self Efficacy Relationship With Diet Compliance

Table 4
Cross Tabulation of the Relationship between Self Efficacy and Respondent's Diet Compliance

		Diet Compliance		Total	
		Obey	No Obey		
<i>Self Efficacy</i>	High	f	25	4	29

	%	73,5	11,8	85,3
Low	f	0	5	5
	%	0	14,7	14,7

Based on research data, it shows that most of the respondents with high self-efficacy and adherence to the diet are 25 respondents (73.5%), while the respondents with low self-efficacy are 5 respondents (14.7%) who do not adhere to the diet. Based on the results of the Spearman Rho statistical test, the P value (Sig. 2-tailed) was 0.000, because P-value < ($\alpha = 0.05$) then H1 was accepted and H0 was rejected, which means that there is a relationship between Self Efficacy and Diet Compliance in Diabetes Mellitus Patients. at the Posbindu, Kepuh Village, Boyolangu District, Tulungagung in 2020.

Discussion

Self Efficacy of Diabetes Mellitus Patients

Based on the research data presented in table 1, it shows that most of the respondents have high self-efficacy (85.3%). According to Bandura (1986), Self efficacy is defined as a person's belief about his ability to perform an action. Individuals with high self-efficacy are when the individual feels confident that he is able to handle the events and situations he faces and believes in his abilities. (Bandura, 1997). Self efficacy is influenced by several supporting factors including gender, age, education, experience, occupation, environment and socio-economics (Rondhianto, 2012). The cross tabulation shows that female respondents (55.9%) have higher self-efficacy. in accordance with Yesi Ariani's research (2011), that 60% of self-efficacy in DM patients is female, because women generally have a high level of self-confidence as well as strong belief in taking an action or behavior. In terms of age, it shows that as many as 21 respondents (61.8%) aged > 50 years have higher self-efficacy, this is in accordance with the theory that the age factor affects a person's beliefs, the more mature a person's age, the more mature their thinking about their abilities. owned (Rizqah, 2018).

Based on the characteristics of respondents with illness > 6 months, 20 people (58.8%) had higher self-efficacy. This is in accordance with the theory that patients who undergo treatment for a long time will have high confidence (Bai, et. al, 2009). This is because the patient has learned self-care behavior based on the experience he has gained during his illness. Respondents with the latest high school education as many as 10 respondents (29.4%) have high self-efficacy, Wu S.F.V (2006) said high self-efficacy in a high educational background because it tends to expand and affect the maturity of one's mindset about how make changes to himself for the better. Based on the characteristics of the job, as many as (26.5%) with self-employed jobs have higher self-efficacy. According to Rondhianto in 2012, that work and socioeconomic status also contribute to the level of self-efficacy, this is related to the ability to get access to health services and the fulfillment of financial aspects, fulfillment of nutrition and treatment.

Diet Compliance with Diabetes Mellitus

Based on the research data interpreted in table 2, it shows that most of the respondents (73.5%) adhere to the diabetes mellitus diet, and as many as 9 respondents (26.5%) do not adhere to the diet. Dietary compliance is an assessment to find out whether a person has followed the eating rules or diet that has been set by the medical team in undergoing therapy. Smet (1994) mentions that to increase compliance there are several steps that can be applied, one of which is strengthened self-efficacy. The attitude of obedience comes from within the individual which is supported by a strong self-confidence towards the actions taken. There are several factors that contribute to the level of compliance, including gender, age, education, length of illness, and family support. In terms of gender, it shows that (52.9%) female respondents are more obedient to diet compared to men, this is in accordance with the theory that men have a low level of compliance in carrying out certain behaviors because they are easily bored, assume that what he does will not work, and is easily influenced by the outside environment (Wicaksono, 2011).

Based on the age characteristics of the respondents, it is shown that (50%) respondents with age > 50 years are more obedient to the diet. According to Rizqah (2018), a person's age maturity is linear to the maturity of performing a form of behavior. Based on the factor of length of illness (50%) respondents who had >6 months of diabetes mellitus had high dietary compliance, according to Bai, et. al, 2009, experience is the main component of changes in attitudes and behavior. Patients who undergo treatment for a long time will have high confidence in their abilities. Based on the education factor, there were as many as (26.5%) respondents with the last elementary education being more obedient to the diet. According to Irawan (2010), explaining that higher education will make them think more carefully about changes in themselves so that they are easier to accept positive influences such as health information, and easier to understand and carry out certain tasks. This opinion is not in line with the facts obtained. The researcher argues that this can be caused by other factors that also influence, such as family support, even though they have low education, family support for the recovery of patients, both moral and financial support will increase compliance.

Relationship between Self Efficacy and Diet Compliance in Diabetes Mellitus Patients

Based on the results of the study in table 1.4, it shows that the majority of respondents who have high self-efficacy and adhere to the DM diet are as many as (73.5%), while respondents who have low self-efficacy (14.7%) are entirely non-adherent to the diet. The results of Spearman Rho's analysis obtained a P value of $0.000 < 0.05$, then H1 was accepted, which means there is a relationship between Self Efficacy and Diet Compliance. Self Efficacy plays a very important role in shaping a person's attitude or behavior as in the behavior of undergoing a DM diet. This is stated by Rahman, 2017. A person with high self-efficacy will tend to be more obedient to running a diet whereas low self-efficacy will tend to disobey and experience boredom. Dietary compliance is a behavior that requires the patient to make a series of dietary arrangements in DM patients (Delianty, 2015).

Components that influence behavior include the individual's self-confidence towards the medication and diet being carried out. It has a rationale that high beliefs will change a person's behavior on the contrary if low beliefs cause doubt and will not achieve satisfactory results (Kozier, 2010). Thus self-efficacy or self-confidence plays an important role in shaping behavior such as in managing diet and other health tasks. A strong self-confidence and the willingness and ability of a person will be more confident and enthusiastic in an effort to improve his health condition.

Conclusion

Self Efficacy in Diabetes Mellitus sufferers almost entirely (85.3%) have high self-efficacy and 5 respondents (14.7%) have low self-efficacy. Dietary compliance in patients with diabetes mellitus showed that the majority of respondents adhered to the diet (73.5%). The results of data analysis using the Spearman Rho Test statistical test showed that the P value (Sig. 2 tailed) was $0.000 < (\alpha = 0.05)$, then H_1 was accepted and H_0 was rejected, which means that there is a relationship between Self Efficacy and Diet Compliance in Diabetes Mellitus Patients in Indonesia. Posbindu, Kepuh Village, Boyolangu District, Tulungagung Regency in 2020.

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