

## THE INCREASING OF SELF EFFICACY-SELF CARE ON PATIENTS WITH DM TYPE 2 THROUGH PEER GROUP EDUCATION SUPPORT SYSTEM

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### ABSTRACT

Diabetes mellitus is still a scourge of the world, DM cases are always increasing every year. Diabetes is a serious chronic disease that occurs when the pancreas does not produce enough insulin, or when the body cannot effectively use the insulin it does produce. Self-efficacy is the patient's self-confidence in his ability to perform self-care. Self-care is an action to help control blood sugar which can produce better health conditions. The risk of complications for people with DM can be reduced by increasing self-efficacy and good self-care. The strategy used to increase self-efficacy\_ self-care is through a peer group education support system. This research was conducted to determine the increase in self-efficacy - self-care in patients with type 2 DM through a peer group education support system in the thunderstorm environment. This research is a pre-experimental study with a One Group – Pretest-Posttest without control group design. The population in this study amounted to 20 respondents. The sampling technique in this study was purposive sampling, with a total sample of 18 respondents. The statistical test used in this study was the Wilcoxon sign-rank test. The results of the Wilcoxon sign-rank test obtained a p-value of 0.000 ( $\alpha=0.05$ ). With good self-efficacy as many as 17 respondents (94.4%) and good self-care as many as 17 respondents (94.4%). So it can be concluded that the peer group education support system has an effect on self-efficacy\_self-care for type 2 DM patients in the Geguntur Environment.

Keywords: diabetes mellitus; peer group education; self care; self-efficacy

### INTRODUCTION

Diabetes mellitus is still the scourge of the world, DM cases always increase every year. Diabetes is a serious chronic disease that occurs because the pancreas does not produce enough insulin (a hormone that regulates blood sugar or glucose), or when the body cannot effectively use the insulin it produces. DM is classified over DM type 1, DM type 2, DM other types, and DM in pregnancy. DM is an important public health issue, being one of four priority non-communicable diseases targeted for follow-up by world leaders. The number of cases and prevalence of diabetes has steadily increased over the past few decades (WHO 2016).

Diabetes mellitus (DM) type 2 is a chronic disease characterized by the presence of insulin resistance and cannot be cured completely but can be controlled with good self-care. In this process, people with type 2 DM need confidence in the cause of the disease, the healing process and how to treat it. This can be done by increasing self-confidence in people with DM. The increase in the incidence of type 2 DM is due to several factors, such as a person's bad behavior patterns and lack of knowledge about good self-care. Self-care that can be done by people with DM is good treatment management, doing eating arrangements, physical exercise or exercise, controlling blood sugar levels regularly and daily activities. Self care DM aims to achieve blood sugar levels within normal ranges so as to prevent complications and reduce morbidity and mortality due to DM disease. Self-care has an important role in improving the quality of life and well-being of patients.

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people with DM is good treatment management, doing eating arrangements, physical exercise or exercise, controlling blood sugar levels regularly and daily activities. Self care DM aims to achieve blood sugar levels within normal ranges so as to prevent complications and reduce morbidity and mortality due to DM disease. Self-care has an important role in improving the quality of life and well-being of patients. The International Diabetes Federation (IDF) estimates that there will be at least 537 million people aged 20-70 years in the world with DM in 2021.(IDF, 2021) Indonesia is in the fifth position with the number of DM sufferers as many as 19.47 million with a population of 179.72 million, thus the prevalence of DM in Indonesia is 10.6%. The IDF estimates that there are still adults with DM who have not been diagnosed. The number is predicted to continue to increase until it reaches 643 million in 2030 and 783 million in 2045.(Sun et al., 2022) According to data from the Mataram City Health Office (Dikes) in 2021, there were 8540 people affected by DM in Mataram. According to a recap of data per Puskesmas in Mataram in 2021, the Karang Pule Health Center has a high DM of 1150 people. (NTB, 2018).

The results of research by Ilkafah and Kusnanto (2011), said that Peer Group Support can increase the self-efficacy of people with DM. With the implementation of the Peer Group Support, people with DM get support from fellow sufferers so that confidence in their ability to manage DM increases.(Septiani et al., 2020) Peer Group Support is influential in controlling the random blood sugar of people in a range that remains good or can reduce the blood sugar of random sufferers. Self-efficacy is closely related to self-care activities, the higher the self-efficacy will increase self-care activities so that people with DM can manage their disease properly and controlled blood sugar which will later avoid the occurrence of DM complications. According to the results of a study conducted by Dirgantari and Triani (2021) on peer group support on the self-efficacy of DM type II patients, saying that there is an influence of peer group support on the self-efficacy of people with DM. Peer group support is an effective intervention to help people with DM in self-management.(Pademme & Banna, 2021) Peer group support is related to the practical, social and emotional support of a group of people with similar disease conditions, so as to increase the motivation of people with DM in managing their disease. Peer group support is carried out in groups that are ready to listen to complaints and various strategies in dealing with dietary problems, helping to improve dietary compliance. In groups, each member can share and listen to each other's experiences and suggestions, thus causing various kinds of suggestions and influencing the minds of each member so that they understand each other that the sufferer is not struggling alone but there are others who are also struggling with the disease he suffers from. Peer group support performed on people experiencing the same chronic disease condition is a very appropriate intervention as a form of social support.(Widayati, 2020).

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are others who are also struggling with the disease he suffers from. Peer group support performed on people experiencing the same chronic disease condition is a very appropriate intervention as a form of social support. Self-efficacy is a key idea of social cognitive theory and self-efficacy encourages the process of self-control to maintain the behavior needed in managing self-care in people with DM. Self-efficacy in people with type II DM focuses on the belief of the sufferer to perform behaviors that can support the improvement of their disease and improve self-care management such as diet, physical exercise, drug therapy, blood sugar control and DM treatment in general.(Firmansyah, 2018).

Self-care diabetes is an action to help control blood sugar which can produce better health conditions.(Putri & Hastuti, 2017) Caring is a basic human nature to help, pay attention to, take care of, and provide assistance, as well as provide support to individuals.(Munir & Solissa, 2021) People with DM do self-care by paying attention and helping themselves in maintaining their health. Increased blood levels characterized by fatigue, drowsiness, and blurred eyes can be prevented by self-care consisting of dietary regulation, exercise, drug therapy, foot care, and blood sugar monitoring. The ability to carry out appropriate and successful self-care habits is closely related to morbidity and mortality rates and significantly affects productivity and quality of life. However, poor DM control can result in hyperglycemia in the long term, which triggers some serious complications (Munir & Solissa, 2021).

Peer group support is a support system that can be obtained from groups of people who have the same disease to help reduce or minimize a health behavior problem, and can also reduce depression and improve a person's behavior in managing illness. Togetherness during activities aims to increase motivation and foster interest and correct behavior in carrying out treatment. People with DM who have a social group will listen to complaints and share strategies to solve problems related to the patient's self-confidence to perform behaviors that can support the improvement of their illness and improve self-care management. Peer group support makes a form of support and can foster a sense of optimism and positive thoughts in someone who faces a problem(Habibi, 2020).

Based on the results of interviews conducted by researchers on 9 respondents in the work area of the Karang Pule Health Center about self-efficacy – self-care, it was found that 5 out of 9 respondents had a low level of self-confidence in self-care. The reason is that the sufferer is not sure of himself who can carry out self-treatment. The sufferer also said that he was not sure he could control his blood sugar levels to keep them under control, as his blood sugar levels often went up and down. In addition, one of the sufferers also said that he did not routinely control his blood sugar once a month to the health center. Increased confidence in self-care will have an impact on improving the health status of DM clients because self-care is the basis for controlling DM and preventing complications. This study aims to find out whether there is an increase in self-efficacy – self-care in type 2 diabetes mellitus patients through a peer group education support system in the Geguntur Environment.

## **METHOD**

This study used a pre-experimental research design with One Group – Pretest-Posttest without control group design. The type used is One Group – Pretest-Posttest Design, in this design one group of subjects is used. First measurements are taken, then treatment is given for a certain period of time, then measurements are taken a second time. This type of one-group research design – pretest-posttest is a research design that only uses one group (pretest and

posttest) to find out without using the control group. The population of pa this study was all 20 type 2 DM patients in Geguntur Neighborhood. The sample consists of an affordable part of the population that can be used as a research subject through sampling(Nursalam, n.d.), explained that the sample requirement consists of a representative (represent) and the sample must be quite a lot. In this study, the sample criteria that must be met include: Inclusion criteria in the study: People suffering from type 2 DM, people with type 2 DM who are willing to be respondents, people with type 2 DM who do not suffer from hearing and speech loss, dm type 2 sufferers who are cooperative, dm sufferers with an age range of 40-68 years, sampling is carried out using the purposive sampling method. Purposive sampling so that the respondents in this study were 18 respondents. To obtain information from respondents, researchers use research instruments, namely questionnaires. The questionnaire is a measuring instrument with several questions, and this measuring instrument is used when the number of respondents is large and not illiterate the questionnaire in this study used a cheklis type of questionnaire or a list containing questions or statements that respondents observed to give answers with a sign (√) according to the results that were chilled, Questionnaire A This questionnaire aims to find out how self-efficacy / self-confidence of DM patients. Self-efficacy measurement using the Diabetes Management Self Efficacy Scale (DMSES) questionnaire. This questionnaire consists of 12 questions. This question with three answer choices namely: "not sure" score 1, "Sure enough" score 2, "Very sure" score 3. Questionnaire B This questionnaire aims to find out the patient's self-care independently. Self-care measurement using the Summary Self Care Diabetes Activity (SCDA) questionnaire. This questionnaire has 15 questions with likert-scale answer choices, namely: "always" score 3, "rarely" score 2, "never" score 1.. The bivariate analysis using is the Wilcoxon Sign Rank Test.

## RESULTS

Table 1.  
 Respondents' Characteristics (n=18)

Characteristics	f	%
Age		
35-45	6	33
46-56	10	55,8
57-67	2	11,2
Gender		
Laki-Laki	0	0
Perempuan	18	100
Education		
No School	9	50,0
Primary School	6	33,3
Junior High School	3	16,7
Work		
No Work	7	38,9
Merchant	9	50,0
Laborer	2	11,1
Long Suffering		
1-5	11	61,2
6-10	4	22,2
11-15	2	11,1
16-20	1	5,6

Table 1, data obtained from the most aged respondents 46-60 years had a distribution of 10 respondents (55.8%). Female respondents had a distribution of 18 respondents (100%).

Respondents obtained educational data from Non-School respondents had a distribution of 9 respondents (50.0%). obtained employment data from respondents Merchants have a distribution of 9 respondents (50.0%). respondents who suffered from DM for a long time were 1-5 years with a distribution of 11 respondents (61.2%), and the lowest 16-20 years had a distribution of 1 respondent (5.6%).

Table 2.  
 Frequency Distribution Based on Respondents' Self Efficacy Before Being Given a Peer Group Education Support System (n=18)

(Pre Test)		
Self Efficacy	f	%
Good	12	66,7
Enough	6	33,3
Less	0	0

Table 2, the results of the distribution of self-efficacy frequency in the Geguntur Environment were obtained data from 18 respondents, respondents who had good self-efficacy had a distribution of 12 respondents (66.7%).

Table 3.  
 Frequency Distribution Based on Respondents' Self-Care Before Being Given a Peer Group Education Support System (n=18)

(Pre Test)		
Self Efficacy	f	%
Good	13	72,2
Enough	5	27,8
Less	0	0

Table 3, the results of the distribution of self-care frequencies in the Geguntur Environment were obtained data from 18 respondents, respondents who had good self-care had a distribution of 13 respondents (72.2%).

Table 4.  
 Frequency Distribution Based on Respondents' Self Efficacy After Being Given a Peer Group Education Support System

(Post Test)		
Self Efficacy	f	%
Good	17	94,4
Enough	1	5,6
Less	0	0

Table 4, the results of the distribution of self-efficacy frequencies in the Geguntur Environment were obtained data from 18 respondents, respondents who had good self-efficacy had a distribution of 17 respondents (94.4%).

Table 5.  
 Frequency Distribution Based on Respondents' Self-Care After Being Given a Peer Group Education Support System

(Post Test)		
Self Efficacy	f	%
Good	17	94,4
Enough	1	5,6
Less	0	0

Table 5, the results of the distribution of self-care frequencies in the Geguntur Environment were obtained data from 18 respondents, respondents who had good self-care had a distribution of 17 respondents (94.4%).

Table 6.  
 Analysis of Self Efficacy - Self Care Improvement in DM type 2 Patients Through Peer Group Education Support System

	N	Mean	Std. Deviation	Minimum	Maximum
Self efficacy (pretest)	18	23.89	3.341	19	30
Self Care (pretest)	18	32.39	3.744	26	39
Self Efficacy (posttest)	18	31.00	3.068	21	34
Sel Care (posttest)	18	37.22	3.154	29	41

Table 6, it shows the mean, standard deviation, minimum, and maximum values of each data group (self-efficacy pretest-posttest and self-care pretest-posttest).

Table 7.  
 Analysis of Self Efficacy - Self Care Improvement in DM type 2 Patients Through Peer Group Education Support System in 2022

Support Variables	N	Average Rating	Number of Rankings	P Value
Self Efficacy (post test) - Negative Differences	0	0.00	0.00	0.000
Self Efficacy (pre test) Positive Differences	18	9.50	171.00	
Self Care (post test) - Negative Differences	0	0.00	0.00	0.000
Self Care (pre test) Positive Differences	18	9.50	171.00	

Table 7, it can be concluded that H1 failed to be rejected, meaning that there is an increase in self-efficacy – self-care in type 2 DM patients through a peer group education support system in the Geguntur Environment, where the signification value is calculated less than the table signification ( $0.00 < 0.05$ ). The results of the normality test using the Shapiro-Wilk test were obtained from the results of the self-efficacy pre-test (0.257), pre-test self-care (0.845), post test self efficacy (0.001), and post test self care (0.093). Because there are results from the normality test whose p value  $< 0.005$  means that the data is not normally distributed. So it uses the Wilcoxon Signed Rank test.

## DISCUSSION

### Characteristics of Respondents

The results of the study obtained for the age of respondents who have DM are in the age range of  $\geq 45$  years. At that age, the body has begun to decline. The decrease that begins to occur is a decrease in the work of pancreatic hormones in producing insulin and resulting in an increase in blood sugar levels in the body. The process of getting older can affect the body's hemostatics, including changes in the function of pancreatic beta cells that produce insulin impaired hormone secretion or inadequate use of glucose at the cellular level that impacts blood glucose. (Sarwuna, 2020). The higher a person's age, the higher the need for nutritional intake. Meanwhile, people with DM tend to have uncontrolled sugar levels if they consume foods that contain high carbohydrates or sugar. This causes patients to tend to have less self-efficacy (Hossain et al., n.d.). The results showed that the respondents in this study were women (100%). DM is more common in women than men. According to women have risk factors that cause DM. These risk factors are an increase in Body Mass Index (BMI), monthly cycle syndrome and pregnancy. (Damayanti, 2017) Women physically have a greater chance of increasing BMI (Body Mass Index). This is because some respondents have fat bodies but during their DM they experience drastic weight loss.

The higher incidence of DM in women is because physically women have a greater chance of experiencing an increase in body mass index (BMI) which will then be at risk of obesity. In addition, monthly cycle syndrome (pre-menstrual syndrome) and post-menopause will result in the distribution of fat in the body to be easily accumulated due to these hormonal processes so that women are more at risk of suffering from DM disease. (D, 2010) The increase in blood fat (lipid) levels in women is higher than in men because the amount of fat in women ranges from 20-25%, while in men it is about 15-20%. So that the risk of developing DM in women is 3-7 times higher than in men, which is 2-3 times. (Jelantik & Haryati, 2014).

The results showed that respondents' last education was NoSchool (50%). According to Sukmayanti (2014) the level of education can affect self-efficacy and self-care, a person with a higher level of education usually has a lot of knowledge about health. So that it is more confident in carrying out self-care to prevent complications caused by DM. The results showed that the respondent's job was Trader (50%). According to Jasper (2014) that work does not affect self-confidence. The results showed that the longest period of suffering from DM was 1-5 years (61.2 %). Characterisitk has been suffering from the disease for more than 5 years where this is related to the opinion (Ernawati, 2012) said that one of the factors that affect self-care, one of which is the length of suffering, where people with DM who have this disease for a longer period of time have higher DM self-care activity compared to people who have just had DM. Responders who have had DM for more than 7 years usually understand self-care behaviors better based on their experiences during the disease so that respondents understand more about the best things to do to maintain their health. This can be achieved by carrying out self-care activities regularly and consistently

### **Self Efficacy and Self Care**

The majority of respondents in this study had good self-efficacy (66.7%) and good self-care (72.2%). For sufficient self-efficacy and self-care (33.3% and 27.8%). This is because respondents tend to be lazy to exercise, and do not do foot care. A person who behaves lazily towards himself tends to neglect good health so that he pays less attention to doing treatment on the legs so that they risk having poor health. According to Purbalindi (2012) a person who has high self-efficiency believes that they will be able to carry out self-care effectively. High self-efficiency lowers the fear of failure, increases aspiration, improves problem-solving, and analytical thinking ability. People who have high self-efficiency will have a higher spirit in carrying out self-care than people who have low self-efficiency. Self Efficacy and Self Care (Post test) Based on the results in this study, respondents' self-efficacy and self-care increased to Good as much as (94.4%). Based on research conducted by Sari (2018) there is a relationship between self-efficacy and self-care in type 2 diabetes mellitus patients at the Polyclinic of Internal Medicine at RSUP M. Djamil Padang. According to Sari, a person's motivation in doing self-care, or a person's awareness in doing self-care is to have confidence Self efficacy is an individual's belief in his ability to perform self-care tasks and strive to achieve his goals well. (Melanurista & Prabawati, 2022).

Analysis of Self Efficacy – Self Care Improvement in Type 2 DM Patients Through Peer Group Education Support System It can be concluded that DM patients who have less self-efficiency will result in inability to carry out good self-care in DM patients. Meanwhile, pasein with good self-efficacy will have a high willingness to do self-care so as to minimize the occurrence of complications from DM. The beliefs formed in a person will favor the client's behavior to do something that is perceived to be beneficial to him. Clients who have a strong belief that self-care is an effective action in managing DM, then clients will do self-care in

their daily lives. (Aminuddin et al., 2021) The results of this study show that there is an influence of peer group education support system on self-efficacy – self-care of DM patients. Peer group support is an effective intervention to help people with DM in self-management. Peer group support is related to the practical, social and emotional support of a group of people with similar disease conditions, so as to increase the motivation of DM patients in managing their illness.(Habibi, 2020) The success of the peer group education support system is related to a sense of community and sharing life experiences with fellow DM sufferers. With the existence of a peer group education support system, people with DM can feel together with people who have the same conditions as themselves and know the solution to the problems they experience so that the respondent's self-efficacy increases.(Singla et al., 2021)

## CONCLUSION

The results of self-efficacy - self-care in type 2 DM patients before being given a peer group education support system were self-efficacy of 12 respondents (66.7%) and self-care of 13 respondents (72.2%) The results of self-efficacy - self-care in type 2 DM patients after being given a peer group education support system were self-efficacy of 17 respondents (94.4%) and self-care of 17 respondents (94.4%) There is an increase in self-efficacy - self care in type 2 DM patients through a peer group education support system with p value self efficacy (0.000) and p value self care (0.000)

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