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The Relationship Between Family Support and Foot Care in Diabetes Mellitus Type 2 Patients During Covid-19 Pandemic In Takalar Regency

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Abstract

Background: Diabetes Mellitus (DM) is one of the dangerous factors to expand the seriousness of the COVID-19 disease. Older diabetes patients (>60 years), uncontrolled glucose levels, and the presence of diabetic complications were associated with worse COVID-19 suspicion. **Aim**: The purpose of the study was to determine the relationship between family support and foot care in Type 2 Diabetes Mellitus Patients during the Covid-19 Pandemic in Takalar Regency. **Method**: The method used is an analytical survey research with a Cross Sectional approach. The sampling technique is Accedential Sampling. The research location is in the Work Area of the Bulukunyi Health Center, Takalar Regency with a total sample of 49. The data analysis used the Chis-quare test. **Results**: The results showed that the value of 0.001 (0.05) this indicates that Ha is accepted and H0 is rejected. **Conclusion**: There is a relationship between family support and foot care in type 2 diabetes mellitus patients during the Covid-19 pandemic in Takalar Regency. For clinical practitioners, it is necessary to improve foot care in DM patients to prevent further complications through family support, and further research needs to be carried out by looking at HbA1C.

Keywords: family support, foot care, diabetes mellitus

INTRODUCTION

According to the World Health Organization (WHO) in 2016, diabetes mellitus (DM) is a group of metabolic diseases characterized by the pancreas organs not producing enough insulin or when the body does not use insulin effectively. Diabetes mellitus is a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin activity or both. (1).

Diabetes Mellitus (DM) is one of the danger factors to increase the seriousness of COVID-19 disease. Diabetics who are >old (>60 years old), have uncontrolled glucose levels, and have diabetes complications are associated with a worse suspicion of COVID-19. In China, the death rate for people with diabetes who are confirmed to have COVID-19 is 7.3%. In Italy, 36% of Covid-19 patient deaths were identified with diabetes (2).

As shown by the World Health Organization (WHO) (2014) the number of DM cases in the world in 2014 was 8.3% or around 346 million people of the entire world's population and is expected to double by 2030 (1). Indonesia, which is an individual from the West Pacific region according to the IDF in 2019, ranks seventh in the world for the prevalence of individuals with diabetes with an estimated number of individuals with diabetes of 10.7 million (3). With this figure, Indonesia occupies the fifth position on this planet, or up two positions compared to IDF information in 2013 which occupies the seventh position on this planet with 7.6 million people with DM. (4).

Results of Basic Health Research (RISKESDAS) 2013 for Diabetes mellitus increased from 1.1 percent (2007) to 6.9 percent (2013)(5).Data from South Sulawesi Province, the number of people suffering from diabetes mellitus is 91,823, indicating that 8.1% of adult males are more susceptible to Type 2 DM, while people with a population aged > 14 years are 3.1%. (6)

The number of people with type 2 DM at the Bulukunyi Health Center in 2020 was 39 people and in 2021 and over 67 people. Diabetes Mellitus has until now become one of the danger factors for the increasingly widespread transmission of COVID-19. Older diabetics (>60 years), poorly controlled glucose levels, and presence of diabetic complications are associated with poorer estimates of COVID-19.

In Indonesia, complications of Diabetes Mellitus are: 7.3% renopathy, 27.6% microvascular complications, 63.5% have neuropathy, 42% diabetic retinopathy, 16% nephropathy macrovascular complications (7), other complications, namely sensorimotor diabetes, polyneuropathy 10-54% (8). Another complication of DM is leg ulcers that often become infected (9).

Education on foot care for DM by involving the family is also important, considering that diabetes is a genetic disease that makes relatives/family members among the most at risk. Association of relatives (family members) can be important for early efforts and openness of family exposure as a risk group about diabetes and its treatment, especially efforts to prevent diabetic foot complications. (10)(11).

Research result (12), shows that this form of education had a positive impact during the Covid 19 pandemic due to an increased understanding of the importance of foot care without having to receive face-to-face lectures with health workers. The pre-score in this study was 11.48 while the post score after the intervention was 13.08 there was an increase in the pre and post scores. Provision in the video can be recommended in preventing complications in the feet of DM patients both individually and with assistance from family members, and can be applied every day (12).

Examination with the foot care instruction program has been completed with various estimation results. All investigations are directed at the individual patient in the emergency clinic setting (13) (14). None of these studies included families in carrying out foot care education. Though, according (15).

The family can be involved as an educational target, because the family can be a supporter/encouraging for other family members to carry out the expected healthy behavior. In addition, several components of foot care in the course of DM can cause patients to no longer be able to do it independently, either due to complications of retinopathy, obesity, joint pain, or other physical constraints (16). Overall, the contribution of the family to help patients carry out non-stop foot care is very important in carrying out foot care. With the support of the family, someone will accompany them so that complications can be minimized, this is what makes it different from other studies.

Based on the phenomenon which is also accompanied by the solutions that the authors found, and the results of research which stated that the level of family role has positive results, so researchers are interested and need to examine this at locations and levels of family support which are demographically very different, then from this the authors will focus on the Relationship between Family Support and Foot Care in Type 2 Diabetes Mellitus Patients during the Covid-19 Pandemic in Takalar Regency.

METHOD

Design

This research method is an analytic survey research with a cross-sectional approach which aims to see the relationship between family support and foot care in type 2 DM patients during the Covid-19 pandemic in the Work Area of the Bulukunyi Health Center, Takalar Regency. This research was conducted in the Work Area of the Bulukunyi Health Center, Takalar Regency from 1 July to 1 August 2021.

Sample & sampling technique

In this study, the population was all type 2 diabetes mellitus patients in the Work Area of the Bulukunyi Health Center, Takalar Regency for 4 weeks. The sampling technique in this study is Accedential Sampling where respondents are taken as a sample when they meet by chance, that is, anyone who happens to meet the researcher can be used as a sample. The number of samples in this study were 49 respondents with Diabetes Mellitus who lived with their families, which were obtained during 4 weeks of research, with the sampling technique being Accedential Sampling where respondents were taken as samples, namely anyone who happened to be met by researchers at a predetermined time who was used as a sample.

Data collection process

This Data collection was carried out using a questionnaire. The questionnaire was given to DM sufferers to fill in, then the researcher took back the questionnaire. The questionnaire used with family support from the information support dimension. The number of questionnaires consists of 10 questions using a Liker scale, namely 4 strongly agree, 3 agree, 2 disagree and 1 strongly disagree. The questionnaire used has been tested for validity and reliability with a value of Validity (0.570) and reliability (0.844).

Data analysis

The results of the data collection were carried out by the Chis-quare test using SPSS version 24 with license 4762AE15-E5A3-43BF-8822 1CFC70FB147A, the Chis-quare value is taken if 0 cells (0.0%) have the expected number less than 5, whereas if there are cells that have the expected value count less than 5, the Fisher's Exact Test value is taken.

RESULT

Characteristics of Respondents

Table 1. Characteristics of Respondents

Characteristics of Respondents	n	Mean (min-max)	SD
Age (Years)	49	55.76 (38-75)	$\pm$ 9.429
Length of Suffering DM (Years)	49	5.08 (2-12)	$\pm$ 2.849
GDS	49	298.77 (239-418)	$\pm$ 51.187

Based on Table 1 above, it shows that of the 49 respondents, the average respondent was 55.76 years old with the lowest age being 38 years and the oldest age being 75 years, the average duration of suffering from DM was 4.08 years, with the lowest being 2 years and the most 12 years old, while the average GDS was 298.77 mg/dL, with the lowest GDS 239 mg/dL and the highest GDS 418 mg/dL.

Table 2. Characteristics of Respondents Based on Gender, Education, Occupation, BMI, and Family History in Takalar Regency

Variables	n	%
Gender:		
Man	26	53.1
Woman	23	46.9
Education:		
Not School	7	14.2
Elementary school	20	41
Junior High School	10	20.4
Senior High School	12	24.4
Work:		
Housewife	20	41
Farmer	20	41
Self-employed	9	18
BMI :		
Less	7	14
Normal	17	35
Advantages	15	31
Obesity	10	20
Family History :		
Yes	26	53
Not	23	47
Total	49	100

Based on Table 2 above, it shows that of the 49 respondents, the average gender of the majority of respondents was female, namely 26 respondents (53.1%), for education the majority of education was elementary school, namely as many as 20 respondents (41%), for jobs the majority of respondents worked as Housewife and Farmers, namely 20 respondents (41%), for BMI the majority of respondents were Normal BMI, namely 17 respondents (35%), and for Family History the majority of respondents had family history, namely 26 respondents (53%).

Distribution of family support

Table 3 Distribution of family support

Family Support Dimension Information	n	%
Good	38	77.6
Not enough	11	22.4
Total	**49**	**100.0**

Based on Table 3 above, it shows that of the 49 respondents, 38 respondents (77.6%) had good family support dimension information and 11 respondents (22.4%) had poor family support.

Distribution of Foot Care

Table 4. Distribution of Foot Care

Foot Care	n	%
Done	35	71.4
Are not done	14	28.6
Total	**49**	**100.0**

Based on Table 4 above, it shows that of the 49 respondents, 35 respondents (71.4%) did foot care and 14 (28.6%) did not do foot care.

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Table 5 shows that 49 respondents, 38 respondents (77.6%) had good family support, 33 respondents (67.3%) had good family support with foot care and 5 respondents had good family support with foot care. (10.2%), while 11 respondents lacked family support with foot care, namely 2 respondents (4.1%) and 9 respondents (18.4%) lacked family support with foot care.

The results of the statistical test using the Chis-quare obtained a value of ρ = 0.000 which is less than the value of α = 0.05. This indicates that there is a relationship between family support and foot care in patients with type 2 diabetes mellitus during the Covid-19 pandemic in Takalar Regency

Table 5. Relationship between Family Support and Foot Care in Type 2 Diabetes Mellitus Patients During the Covid-19 Pandemic

Family Support Dimension Information	Foot Care				Total		ρ
	Done		Are not done				
	n	%	n	%	n	%	
Good	33	67.3	5	10.2	38	77.6	0.000*
Not enough	2	4.1	9	18.4	11	22.4	
Total	35	71.4	14	28.6	49	100.0	

Discussion

This study shows that family members provide good information and support to respondents such as encouragement to carry out regular controls and have their health checked, suggestions to participate in health education about Diabetes Mellitus, providing information on the importance of foot care, reminding respondents to perform foot care procedures and explaining the importance of taking medication regularly to DM patients in order to improve their health status, besides that the family always reminds the patient of the DM patient's health checkup schedule when the patient forgets, the family reminds the patient to check the area of his feet, the family gives motivation or encouragement to the patient to clean his feet at the same time dry the patient's feet and between the toes, the family reminds the patient to use lotion/moisturizer when the skin feels dry, wear socks and soft shoes/sandals, and the family reminds the patient to always use footwear both inside and outside the home.

The results of statistical test analysis show that there is a relationship between family support and foot care in patients with type 2 diabetes mellitus during the Covid-19 pandemic in the working area of the Bulukunyi Health Center, Takalar Regency.

According to research conducted by Ismonah and Octaviani (2019), shows that there is a relationship between family support and foot care with a p value of 0.001. The results showed that 33 people (67,3%) received good family support and did good foot care, and 5 people (10,2%) had less family support but were able to do good foot care. Foot care is one of the quick response factors to prevent foot problems that can cause diabetic feet. Better practice in doing foot care will reduce the risk of developing diabetic foot. Because preventing the occurrence of diabetic foot is better than the healing process. Because the healing process of diabetic feet takes a long time (18).

Based on the researchers' assumptions, the results of this study indicate that of the 49 respondents who had good family support and performed foot care, 33 respondents (67.3%), which means that there is a relationship between family support and foot care, because the family has an important role for patients because with the fulfillment of support family in doing foot care, the patient will be enthusiastic and more regular in doing good foot care. In this study, there were 5 respondents (10.2%) who had good family support but did not perform foot care, these respondents did foot care but did not comply with the SOP, which was determined by objective criteria that said they performed foot care if it was in accordance with the SOP and did not do it if not according to SOP.

From these conditions it shows that there are other factors that cause patients not to do foot care seen from the characteristics of respondents who have not completed elementary school education as many as 7 respondents (14.2%) and elementary school as many as 20 respondents (41%) from the factor of low education due to lack of knowledge and understanding of foot care and also caused by work where the respondent has a job as an IRT but also plays a role as a farmer so that the respondent is busy with his daily routine which has to carry out two roles at once, causing the respondent not to perform foot care according to the SOP. Whereas those who lack family support with foot care are not carried out as many as 9 respondents (18.4%) of these respondents do foot care but not in accordance with predetermined SOPs, this is also influenced by the factor of low education, because education can increase one's knowledge and understanding , so that the respondents are less in doing foot care. of the 5 respondents whose foot care was not carried out showed that family support, encouragement and motivation greatly influenced patients in carrying out routine and regular foot care.

This research is in line with research Sari, Haroen and Nursiswati (2016) states that family support for diabetes mellitus patients has an important role in improving foot care behavior. Over time, diabetes mellitus patients experience many complications due to diabetes mellitus so that family involvement is very necessary because the family is the caregiver at home (18).

The results of this study are in accordance with those investigated by (19)This shows that the existence of good family support can increase the patient's ability and interest in doing foot care. In addition, social support really helps people with type 2 DM to improve control of diabetes, because the type or character of Indonesian people is that they always need support from other people, especially when they are sick. Lack of social support has an impact on DM patients' low activity, greater emotional distress, irregularities in dietary habits and decreased frequency of foot examinations (19).

According to (20) Other factors that can improve the patient's ability to perform foot care include knowledge, willingness and ability to perform care independently as well as sources of information. Sources of information obtained by DM patients will increase knowledge and information so that they can carry out appropriate treatment in an effort to prevent complications.

This research is according to what was researched (17) said that instruction has an impact on individual behavior. Individuals with high instruction versus individuals with low training will act in unpredictable ways. Expanded information is not fully obtained in conventional teaching, but is also obtained in non-formal training. Someone's information in an article also contains positive and negative perspectives. These two perspectives will determine the mentality and individual activities (17). The support of the information family dimension greatly helps patients to improve foot care so that the risk of complications can be minimized, and the family must still provide support to the family both from all dimensions of family support in order to improve the quality of life of DM patients, and for further research it is necessary to look at family support for blood sugar control and HbA1C in DM patients where as an indicator of monitoring blood sugar in DM patients.

CONCLUSION

There is a significant relationship between family support and foot care in patients with type 2 diabetes mellitus during the Covid-19 pandemic in Takalar district in 2021 with a statistical test using the Chis-quare test with a value of $\rho=0.000$ which is smaller than the value of $\alpha = 0.05$. shows that Ha is accepted and H0 is rejected. This means that with family support, DM patients pay attention to their condition by doing foot care so that more serious complications do not occur.

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