

The Effect of Health Education-Based Group on Self-care Adherence among Patients with Diabetes Mellitus in Cendrawasih Public Health Center, Makassar City

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Abstract

Background: Self-care is crucial strategy to improve and maintain health condition among diabetes patients. However, most type 2 DM patients are disobedient in carrying out self-care. **Objective:** The study aimed to examine the effect of health education on self-care adherence among patients with diabetes mellitus in Cendrawasih Public Health Center, Makassar city. **Method:** A quantitative study with pre-experimental approach, two group, pretest and posttest design were applied in this study. Thirty-six diabetes mellitus patients were involved in this study using the total sampling technique since limited number of patients in this Public Health Center. We divided into the experimental group (n=18) and the control group (n=18). The Wilcoxon test was used to analyzed the data. **Result:** The results found that there are significantly difference on self-care adherence among type 2 diabetes mellitus before and after receiving the health education with p-value <.05. **Conclusion:** The health education was effective to improve the understanding of diabetes patients who carry out the self-care in maintaining the self-care. Recommendation: Further study need to apply the wide of study using the Randomized Control Trial (RCT) to ensure the effectiveness of health education using varied of strategy on health outcomes.

Keywords: health education, adherence, self-care, diabetes mellitus



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Background

Inadequate knowledge of self-care for Diabetes Mellitus (DM) patients causes increased complications and death in DM patients. DM complications are directly related to the patient's health level and serious and chronic complication. It would lead to morbidity, mortality and decrease in the quality of life (1–7).

The prevalence of diabetes in the world is rising. In North America in 2021, 51 million people suffer from diabetes and it is predicted to increase to 63 million in 2045. Meanwhile in Southeast Asia it is also predicted to increase from 90 million to 152 million in 2045 (1,2). This prediction will also occur in Indonesia, namely 28.57 million in 2045. This number is 47% greater than the number of 19.47 million in 2021. Indonesia is in fifth position with 19.47 million people with diabetes. The number of deaths due to DM reached 236,711. an increase of 58% compared to 149,872 in 2011(8,9).

Nearly one in two adults with DM are unaware of their diabetes status (10–12). The increase in the prevalence of DM is due to self-care factors that have not been maximized (13). The proportion of non-compliance with self-care in DM patients is 49.91%(14). Approximately 52.47% of respondents with low self-care, 39.20% with moderate self-care, while only 8.33% of patients showed a high level of self-care (15).

Independence in carrying out self-care is needed by DM sufferers to improve and maintain their health condition. These self-care needs include diet, physical exercise, monitoring blood sugar, taking medication regularly, and foot care (12,16–20). However, several studies have shown that most type 2 DM patients are disobedient in carrying out self-care (21). About 54.6% of patients adhered to a healthy diet, 39.1% did physical exercise, 28% self-monitored blood glucose, and 65.2% did diabetic foot care (22). The majority of patients with type 2 DM are uncontrolled (85.1%), 42% are obese, and

5.9% are morbidly obese, and 90.1% have poor self-care behavior(23). Most DM sufferers have a low level of knowledge (44.9%), poor self-care behavior (20.1%) and a low level of awareness (34.9%)(24). Thereby, it is very necessary to have nursing interventions to improve self-care for people with Type 2 DM.

Although several studies have been conducted to improve self-care, there are still few studies that focus on interventions that are specific to the local culture in delivering health education. Thereby, this study would focus on examining the effect of health education-based group on self-care adherence among patients with diabetes mellitus in *Cendrawasih* public health center, Makassar City

OBJECTIVE

The study aimed to examine the effect of health education on self-care adherence among patients with diabetes mellitus in *Cendrawasih* Public Health Center, Makassar city

METHOD

Design

A quantitative research with pre-experimental approach, two group, pre-test-posttest design. The intervention group received the health education using the Focus Group Discussion (FGD) technique and the control group received the usual care. This study was carried out in *Cendrawasih* Public Health Center from July 01st to September 31th, 2022.

Sample, Sample Size, and Sampling Technique

Thirty-six diabetes mellitus patients were involved in this study using the total technique sampling. We divided into two groups such as experimental group (n=18) and control group (n=18). The inclusion criteria of this study including 1) Type 2 DM patients undergoing treatment at the *Cendrawasih* Health Center; 2) willingness to participate in this study; 3) be able to read and writing in Indonesia language; 4)

be able to speak Indonesia verbally in correct.

Statistically analysis

Descriptive statistic was used to describe the characteristic of respondents using the frequency and percentage. The paired t-test was used to measure the mean difference score among intervention group before and after receiving the intervention. The assumption of normality of data need to address before deciding the statistically analysis technique.

RESULT

Characteristic of respondents

Table 1 showed the characteristic of respondents. Most of respondents in the

intervention group were female (77.8%) while the control group more than half of them were male (77.7%). Both of the intervention group (38,9%) and control group were low level education such as elementary school level (61,1%). Regarding the occupation status, some of patients in the intervention group were housewife, while in the control group were private officer (38.9). In term of family income, in the intervention group (77,8%) have the income about 1 million rupiah approximately. However, for the control group have more than 3 million income per month (61,1%). Both of intervention group (44,4%) and control group (50%) have the duration of diabetes more than 5 years

Table 1. Characteristic of respondents

			Group		Total	p-value
			Control	Intervention		
Gender	Male	n	12	4	16	0.019
		%	66.7	22.2	44.4	
	Female	n	6	14	20	
		%	33.3	77.8	55.6	
Education level	Elementary	n	11	7	18	0.235
		%	61.1	38,9	50.0	
	Junior high school	n	5	5	10	
		%	27.8	27.8	27.8	
	Senior high school	n	1	5	6	
		%	5.6	27.8	16.7	
Bachelor	n	0	1	1		
	%	0.0	5.6	2.8		
Master	n	1	0	1		
	%	5.6	0.0	2.8		
Occupation	Government officer	n	1	6	7	0.043
		%	5.6	33.3	19.4	
	Private officer	n	7	1	8	
		%	38.9	5.6	22.2	
Retirement	n	3	3	6		
	%	16.7	16.7	16.7		
Housewife	n	7	8	15		
	%	38.9	44.4	41.7		
Income	< 1 million	n	5	14	19	0.010
		%	27.8	77.8	52.8	
	1 million	n	2	1	3	
		%	11.1	5.6	8.3	

Duration of diabetes	3 million	n	11	3	14	0.081
		%	61.1	16.7	38.9	
	< 1 year	n	1	2	3	
		%	5.6	11.1	8.3	
	1-3 year	n	2	7	9	
		%	11.1	38.9	25.0	
	3-5 year	n	6	1	7	
		%	33.3	5.6	19.4	
	> 5 year	n	9	8	17	
		%	50.0	44.4	47.2	
Total	n	18	18	36		
	%	100.0	100.0	100.0		

The effect of health education-based group on self-care adherence

Table 2 described the effect of health education-based group on self-care adherence. The result found that there is

positive effect of health education-based group on self-care adherence among patients with type 2 diabetes mellitus in Cendrawasih public health center, Makassar city ($p < 0.05$).

Table 2. The effect of health education-based group on self-care adherence

Group	Pre		Post		Nilai p
	Mean±SD	Median (Min - Maks)	Mean±SD	Median (Min - Maks)	
Control	68.78±8.69	65.00 (51.00 - 91.00)	69.17±10.17	67.50 (51.00 - 94.00)	0.1
Experiment	75.72±13.93	75.00 (52.00 - 99.00)	96.89±7.20	100.00 (80.00 - 100.00)	0.000

Discussion

The result of this study showed that there is significantly differences in adherence to self-care among type 2 diabetes mellitus Health Education based group before and after receiving. Through Health Education, the community gets health messages that are expected to improve attitudes and change in target behavior. It was consistent with a previous study which showed that health education-based group program significantly improved lifestyle changes and effectively influenced self-care behavior and quality of life among type 2 DM patients (25–28).

Independence in carrying out self-care is needed by DM sufferers to improve and maintain their health condition. These self-care needs include diet, physical exercise, monitoring blood sugar, taking medication regularly, and foot care. However, a previous study confirmed that most of diabetes mellitus patients were not

adhere to conduct the self-care behaviors (29). (Only 54.6% of them performed the healthy diet and 39.1% of them perform physical activity (30).

Most of diabetes patients are uncontrolled (85.1%), 42% are obese, and 5.9% are morbidly obese, and 90.1% have poor self-care behavior(31). From those, some of them have low education and bad self-care behaviors (32). The high rate of non-compliance is very concerning, because it will affect the occurrence of acute and chronic complications, length of treatment and impact on productivity and reduce human resources. In addition, patients will incur a lot of treatment costs. So that educational support is very important for sufferers and families to improve behavior and prevent complications from occurring in patients.

The majority of DM patients lack of attention to self-care including lack of exercise and consuming unhealthy foods

(33). Factors supporting and inhibiting the self-management of type 2 DM patients are intrapersonal factors (knowledge, skills, co-morbidities, and health status), interpersonal factors (relationships with family, peers, and health professionals) and institutional factors (diabetes education and the environment)(34) Therefore, specific nursing interventions needed to improve self-care for people with Type 2 DM because DM problems

Conclusion

Health education-based group is effective to improve healthy behaviors among type 2 diabetes mellitus. This was proven in this study which showed that there were differences in self-care adherence to type 2 diabetes mellitus patients before and after receiving Health Education. Educational support is very important for sufferers and families to improve behavior and prevent complications from occurring in Type 2 Diabetes Mellitus patient

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