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The Effect of Supportive Educative Intervention Based on the Theory of Planned Behavior on Self-Care in Patients with Type 2 Diabetes

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Abstract

Background: Self-care for adults with diabetes is complex because they live with a chronic condition that requires long-term management of medication, dietary regulation, and other factors that affect their blood sugar levels. This necessitates special attention based on the individual's medical condition and environment.
Method: This study uses a quasi-experimental design with a pre-post test design. The sample size in this study consists of 33 participants in the intervention group and 33 participants in the control group. The instruments used are the Diabetes Self-Management Instrument (DSMI) and the Theory of Planned Behavior (TPB) questionnaire
Results: The results of this study indicate an effect on the intervention group regarding self-care in patients with type 2 diabetes mellitus, as evidenced by a p-value of 0.000, which means there is an influence from the intervention group compared to the control group.
Conclusion: The intention of individuals with diabetes to engage in self-care is influenced by attitudes, subjective norms, and behavioral control obtained from their environment, support systems, and experiences. Accurate information, support from close relatives, and learning from experiences shape the mindset of patients, encouraging them to adopt a positive attitude.

Keywords: supportive educative; Theory of Planned Behavior; Selfcare; Diabettes Mellitus

INTRODUCTION

Type 2 Diabetes Mellitus (DM) is a chronic disease that is increasingly rising globally. Current estimates indicate that 537 million people are affected by diabetes, with projections suggesting a potential increase to 643 million by 2030 and 738 million by 2045 [(1)] . A higher prevalence is observed in Type 2 Diabetes Mellitus, which accounts for about 90-95% of DM patients [(2,3)]. This disease is one of the top 10 causes of death and has a significant impact on the lives and well-being of individuals, families, and communities worldwide [(1)]. Many interventions have been implemented to address diabetes mellitus and reduce the complications arising from the disease. One such intervention aimed at improving self-care management in patients with diabetes mellitus is Diabetes Self-Management Education and Support (DSME/S), which has shown positive outcomes, including changes in healthy eating behaviors, increased physical activity, and medication adherence [(4,5)]. However, prevalence rates among adults remain uncontrolled, with diabetes rates still high. Specifically, self-care among adults with diabetes is complicated because they live with a chronic condition that requires long-term management of medication, diet, and other factors that affect blood sugar levels. This necessitates special attention based on their medical condition and environment [(6)]. It indicates a potential need for self-care knowledge and skills through eating habits, physical activity, and medical needs to maintain health and well-being [(7)].

Self-care is crucial for achieving optimal glucose outcomes and reducing complications such as amputations, nephropathy, neuropathy, retinopathy, cardiovascular disease, erectile dysfunction, depression, and skin lesions [(8)]. In this context, individuals with Diabetes Mellitus are

expected to actively engage in their care by adopting various complex self-care behaviors, including dietary control, regular exercise, psychosocial coping skills, medication adherence, and self-monitoring of fasting blood sugar levels.

Several studies have found that patient education programs, social support, self-efficacy, and positive attitudes can enhance self-care and maintain good glycemic control [(9)]. It is essential to identify the factors influencing adherence to self-care among patients with Type 2 Diabetes Mellitus and to provide the necessary information and education to empower them in their self-care efforts. This is vital for preventing complications that may arise due to non-adherence or the patients' inability to perform self-care.

The Theory of Planned Behavior is a framework grounded in intention. Intention encompasses the factors that explain motivational elements and has a strong impact on behavior. The intention to engage in a behavior is supported by an individual's beliefs about that behavior. These beliefs are shaped through the provision of knowledge, skills, and experiences necessary to perform the behavior. A strong intention from a person with diabetes will enhance the client's motivation for self-care and create a better quality of life [(10)]. To foster the intention of clients with Diabetes Mellitus to engage in self-care, Supportive Educative interventions based on the Theory of Planned Behavior can be implemented. Supportive Educative intervention is an educational method that employs various approaches, such as support, guidance, and teaching. Guidance refers to the assistance provided by one person to another in making choices and adjustments in problem-solving, with the aim of fostering independence and the ability to become a responsible individual. Teaching is a complex action that consists of many elements, one of which involves how to convey instructional messages and create an environment conducive to the learning process. Support helps individuals remain safe from unpleasant situations or prevent them from making erroneous decisions. Clients' behaviors need to be encouraged and stimulated according to the desired outcomes [(11,12)].

Self-care is essential for achieving optimal glucose outcomes and reducing complications such as amputations, nephropathy, neuropathy, retinopathy, cardiovascular disease, erectile dysfunction, depression, and skin lesions [(4,8)]. Good glucose control is significantly related to adherence to self-care practices. Other research studies have indicated that uncontrolled blood glucose is significantly associated with better self-care activities for diabetes, which may be influenced by additional external factors[(14)].

In this regard, individuals with diabetes are expected to actively engage in their care by adopting various complex self-care behaviors, including dietary control, regular exercise, psychosocial coping skills, medication adherence, and self-monitoring of fasting blood sugar levels. Several studies have found that patient education programs, social support, self-efficacy, and positive attitudes can improve glycemic control [(9)]. Overall, effective self-care greatly enhances the quality of life for patients with diabetes mellitus, and strong intention is required to engage in these self-care activities.

METHOD

This study uses a quasi-experimental design with a pre-post test design, aimed at revealing causal relationships by involving an experimental control group. The population for this research consists of clients with Type 2 Diabetes Mellitus who attend follow-up appointments at the internal medicine outpatient clinic of Abdul Manap General Hospital in Jambi. The sampling technique employed in this study is non-probability sampling with purposive sampling. In this technique, sample selection is based on the researcher's objectives or research questions, ensuring that the samples can represent the characteristics of the known population.

The sample size for each group in this study is 30 individuals, with an additional 3 participants included as a contingency for

potential dropouts, resulting in a total of 63 respondents. The inclusion criteria for this study are Type 2 Diabetes Mellitus patients attending the internal medicine clinic, aged 40-65 years, able to communicate effectively, and literate, specifically clients experiencing issues with blood glucose control. The exclusion criteria include clients with severe disease complications and those with hearing or speech impairments. The study will be conducted from May 2024 to August 2024.

The instrument used in this research is the Diabetes Self-Management Instrument (DSMI) in the Indonesian version, which is standardized to assess self-care in clients with diabetes mellitus. The DSMI questionnaire consists of 23 questions, allowing respondents to check the provided options with the following scoring: 1 = Never, 2 = Sometimes, 3 = Often, 4 = Always. The scoring results are categorized as Low = 23-45, Medium = 46-68, and High = 69-92. For assessing the Theory of Planned Behavior, there are 16 questions evaluating intention, attitude toward the behavior, subjective norms, and perceived behavioral control, with the scoring as follows: 1 = Very Good, 2 = Good, 3 = Fairly Good, 4 = Neutral, 5 = Fairly Bad, 6 = Bad, 7 = Very Bad. Before conducting the post-test, respondents in the intervention group will receive guidance, teaching, and support across three sessions, each lasting approximately 30-45 minutes.

RESULTS

Characteristic Respondent

Tabel 1. Characteristic Respondent

Karakteristik Responden	Kelompok Intervensi		Kelompok Kontrol		Total	
	f(x)	%	f(x)	%	f(x)	%
Jenis Kelamin						
Perempuan	19	58	30	91	49	74
Laki-laki	14	42	3	9	17	26
Umur						
Dewasa muda	1	3	0	0	1	1
Dewasa	15	45	22	67	37	57
Dewasa lansia	17	52	11	33	28	42
Status						
Kawin	27	82	25	76	52	79
Belum Kawin	1	3	0	0	1	1
Janda/Duda	5	15	8	24	13	20
Pendidikan						
Tidak Sekolah	2	6	2	6	4	6
Tamat SD	6	19	6	19	12	18
Tamat SMP	3	9	8	24	11	17
Tamat SMA	11	33	9	27	20	30
D3	2	6	1	3	3	5
S1	4	12	4	12	8	12
Lainnya	5	15	3	9	8	12
Penghasilan						
<1.500.000	13	39	3	9	16	24
1.500.000-3.000.000	3	9	27	82	30	46
>3.000.000	17	52	3	9	20	30
Lama DM						
< 1 Tahun	4	12	2	6	6	9
1-5 tahun	13	39	11	33	24	36
>5 tahun	16	49	20	61	36	55

Table 1 shows the characteristics of 66 respondents involved in this study. The majority of respondents are female, with the largest age group being adults, and most are married. Regarding educational background, the distribution is relatively even, with 20 respondents (30%) having a high school education, 12 respondents (18%) with elementary school education, and 11 respondents (17%) with junior high school education. The income characteristics of respondents show that most earn between 1,500,000 and 3,000,000 (46%), followed by those earning above 3,000,000 (30%) and those earning below 1,500,000 (24%). The majority of respondents have a history of diabetes mellitus for more than 5 years (55%).

Table 2 results of Bivariate Testing

		N	Mean Rank	Sum of Ranks	z	asymp
DSMI post intervention – DSMI post control	Negative Ranks	0[a]	.00	.00	-5.014[b]	.000
	Positive Ranks	33[b]	17.00	561.00		
	Ties	0[c]				
	Total	33				

Table 2 shows the results of the test indicating the influence of the supportive educative intervention based on the theory of planned behavior on the respondents' intentions to engage in self-care. The analysis results show a p-value of 0.000, where a p-value < 0.05 indicates that the intervention has an effect. Therefore, based on this bivariate analysis, it means that the supportive educative intervention based on the theory of planned behavior has an impact on self-care in patients with type 2 diabetes mellitus.

DISCUSSION

Attidues

Based on the intervention results, attitudes were shown to influence the self-care behavior of patients with type 2 diabetes mellitus. Attitudes are determined by individuals' beliefs about the outcomes of the behaviors they engage in (behavioral beliefs), which are evaluated based on the results or attributes of those outcomes. Thus, a person who firmly believes that positive rewards will result from a particular behavior will have a positive attitude towards that behavior (13). Behavioral beliefs are the subjective probability that performing a specific behavior will lead to certain outcomes or provide certain experiences. This encourages individuals to adhere to the recommended behaviors that will guide their goals. Behavioral beliefs are believed to produce either positive or negative attitudes toward the behavior (1)

Subjective Norms

In this study, subjective norms indicate that support from close individuals and experiences influence the attitudes toward engaging in self-care. An individual's subjective norm is determined by their normative beliefs, which reflect whether the individual approves or disapproves of the behavior (13). Family members are the closest individuals or groups whose advice may be heeded by participants and who can either support or oppose their self-care behaviors. Qualitative and quantitative studies have found that family and friends can assist patients in managing diabetes (14). Not only did participants receive support from their families, but they also expressed that they had family members with a history of the same illness. This motivated participants to engage in self-care, as they did not want to worsen their condition, experience complications, or even death like their family members who had similar histories. An individual's family history has a strong influence on positive health behavior changes for the participants involved (15).

Perceived Behavioral Control

Factors that facilitate and hinder can be situational barriers and facilitators that make treatment behavior easy or difficult to perform (behavioral control). Meanwhile, the factors that complicate participants' adherence to treatment include the cost of care, environmental conditions, and weather. The cost of diabetes care is quite high, leading participants to complain about the expenses they must incur. The high cost of treatment and the long time required for wound healing impact the economic burden on families; to address this issue, access to appropriate care is needed to reduce complications and amputations (16).

CONCLUSIONS

Guidance, teaching, and support from close individuals have an influence on diabetes mellitus patients in adopting attitudes toward self-care. In addition to support from loved ones, experiences also play a significant role in helping diabetes patients establish their intentions and commitment to engage in self-care.

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