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The effectiveness of Diabetes Self-Management Education (DSME) with self-acceptance and self-care for diabetes mellitus patients

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Abstract

Background: Diabetes mellitus is a complex group of chronic diseases associated with hyperglycemia, resulting in impaired insulin secretion and other organs. Patients with type 2 diabetes mellitus will experience changes in themselves. Each individual responds and has a different perception of dealing with these changes. Providing education aims to increase knowledge and improve the patient's ability in self-care so that health problems are resolved.

Objectives: The study wants to know the effectiveness of Diabetes Self-Management Education (DSME) on self-acceptance and self-care of Type II Diabetes Mellitus patients.

Patient and Methods: A quasi-experimental design was used through one group pre-test and post-test design. The total population is 25 people, with a saturated sampling technique, and a sample of 25 people. Data analysis used a non-parametric statistical test, namely the Wilcoxon Signed Rank Test.

Results: The majority of patients with Diabetes Mellitus had good self-acceptance, and the majority of patients' self-care was found to be good (p=0.000).

Conclusions: The resulting study is the effectiveness of DSME on patient self-acceptance and self-care.

Recommendations: The DSME program requires involvement in glucose monitoring by health professionals. Providing education to patients effectively provides psychological support and patient self-care.

Keywords: DSME; self-acceptance; self-care; diabetes mellitus.

Introduction

Diabetes mellitus is a complex group of chronic diseases associated with hyperglycemia, resulting in impaired insulin secretion, causing disturbances in different organs and systems.[1] Diabetes not only causes premature death worldwide. This disease is also a cause of blindness, heart disease, and kidney failure.[2]

The Diabetes Federation Organization (IDF) estimates that at least 463 million people suffer from

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diabetes at the age of 20-79 in 2019, equivalent to a prevalence rate of 9.3% of the total population at the same age. By gender, the IDF estimates the prevalence of diabetes at 9% in women and 9.65% in men.[3] The prevalence of diabetes is estimated to increase as the population ages to 19.9% or 111.2 million people aged 65-79 years. The number is predicted to continue to increase to reach 578 million in 2030 and 700 million in 2045.[2]

Patients with type 2 diabetes mellitus will experience changes in themselves. Each individual responds and has a different perception of dealing with these changes. Psychosocial and emotional factors related to diabetes, life stress, anxiety, and depression. These factors lead to worse diabetes.[4] Low self-acceptance in diabetic patients is also associated with impaired self-care and glycemic control.[5]

According to the American Diabetes Association, one form of effort to overcome or reduce stress is through health education and family support. The form of health education provided is Diabetes Self-Management Education and Support (DSME/S).[6] The results of another study show that 83% of diabetics experience moderate levels of stress.[7]

Diabetes self-management education (DSME) is an ongoing, patient-centered process that helps impart knowledge, skills, and abilities for self-care. Pirkle et al. (2019) showed that DSME was most effective when strengthened by community resources.[8] Diet education can also be done by promoting a more positive attitude towards the disease. This can be achieved by individual counseling, respecting the patient's needs, and focusing on regular blood glucose testing.[9]

Patients could accept illness and carry out self-care through a learning process by providing knowledge and practice. Good self-care behavior can be adapted through health professionals. Based on the initial survey found at the research site, some respondents felt emotional, felt anxious, lacked confidence in their disease condition, and had feelings of burden because their diabetic wounds did not heal immediately. The purpose of this study was to determine the effectiveness of Diabetes Self-Management Education (DSME) on self-acceptance and self-care of Type II Diabetes Mellitus patients.

Materials and Methods

This study uses quantitative research methods with correlational studies through a Cohort design approach.[10] A quasi-experimental design was used through one group pre-test and post-test design. This research was conducted at Wound Care Center Medan. The population in this study was 25 patients who underwent wound care. The sampling technique used was saturated sampling, and sample was 25 people.

The research began after obtaining permission from the Faculty of Nursing and Midwifery, Universitas Prima Indonesia in 2020, the researchers submitted a research letter to the Wound Care Center Medan. After the relevant parties allow the research, the researcher explains in advance the purpose of the study, and the respondent signs the consent form.

This research has been approved by the Ethics Commission of Universitas Prima Indonesia No: 038/KEPK/UNPRI/V/2020. Permission was also obtained from a Wound Care Centre to obtain approval for the research site. The researcher had previously visited the unit to obtain information and establish relationships with nurses and respondents.

Then the researcher explained the instruments used before the Diabetes Self-Management Education (DSME) intervention. Researchers provide information about the benefits of education in the self-acceptance and treatment of the diabetes mellitus. The researcher gave a pretest questionnaire, and after the intervention, the researcher distributed a posttest questionnaire. Self-acceptance questionnaire with Diabetes Acceptance Scale (DAS)[(11)], and self-care with the Diabetes Self-Management Questionnaire (DSMQ).[12]

After the questionnaire was filled in, the instrument was collected again by the researcher and checked for completeness. If the instrument is not filled out completely, it will be completed on the spot. Respondents filled out the questionnaire sheet again after giving Diabetes Self-Management Education (DSME) to determine self-care after the intervention.

Data analysis includes univariate and bivariate. Univariate data analysis based on self-acceptance and self-care then analyzed in the frequency distribution table. Bivariate data analysis based on wound care with self-acceptance and self-care. This study uses a nonparametric statistical test, namely the Wilcoxon Signed Rank Test. Nonparametric statistical tests are used when the resulting distribution is not normal or the sample is small using a significance level of 5%.

The reliability of the study findings is ensured by the researcher about the analysis. Initial ideas about the research were discussed with the research team. The study used a questionnaire that had been modified according to research needs. The research findings are derived from data collected from the initial survey and respondents' experiences of self-acceptance and self-care.

Results

The results of this study obtained univariate and bivariate analysis data. Based on self-acceptance before DSME in Diabetes Mellitus patients, the majority of self-acceptance was not good as many as 23 people (92%). After DSME in Diabetes Mellitus patients, the majority of good self-acceptance was 22 people (88%).

Based on self-care before DSME in Diabetes Mellitus patients, the majority of self-care was not good as many as 18 people (72%). After DSME in Diabetes Mellitus patients, the majority of self-care was good as many as 20 people (80%).

Table 1: The Effectiveness of Diabetes Self-Management Education (DSME) on Self-Acceptance of Diabetes Mellitus Patients

Self-acceptance	N	Mean	Std. Deviation	Z	p-value
Before	25	1.08	0.277	-4,472	0.000
After	25	1.88	0.332		

Based on the results of the study, of p-value = 0.000 (p-value <0.05). This means that there is a difference between self-acceptance before and after Diabetes Self-Management Education (DSME).

Table 2: The Effectiveness of Diabetes Self-Management Education (DSME) on Self-Care for Diabetes Mellitus Patients

Self-care	N	Mean	Std. Deviation	Z	p-value
Before	25	1.28	0.458	-3.606	0.000
After	25	1.80	0.408		

Based on the results of the study, p-value = 0.000 (p-value <0.05). This means that there is a difference between self-care before and after Diabetes Self-Management Education (DSME).

Discussion

The results of this study found that the self-acceptance of Diabetes Mellitus patients before the Diabetes Self-Management Education (DSME) intervention experienced poor self-acceptance. This is because patients feel anxious about their illness, feel depressed, depressed, and unable to carry out their usual activities. Patients who had poor psychological status, showed that the majority of patients had negative emotions, and a minority had severe pressure on diabetes.[13]

Diabetic patients who did not have higher self-acceptance had a significant relationship with less active coping, higher diabetic distress, and depression. Assessment of diabetes acceptance can facilitate the detection of high-risk patients.[11] One of the mechanisms by which psychological factors influence chronic disease is related to behavioral management.[14]

Commitment and acceptance therapy are efficacious in improving the psychological well-being of diabetic patients. It can be applied as a useful intervention method to improve psychological adaptation in patients with diabetes.[15] This therapy can be an effective psychological intervention in diabetic patients who are depressed.[14]

The results of the study obtained self-acceptance after the Diabetes Self-Management Education (DSME) intervention experienced by the respondents became good. This means that there is a difference between self-acceptance before and after DSME. There was an increase experienced by diabetic patients after receiving education, this was marked by patients who did diabetic wound care became more confident, decreased anxiety levels, and felt they received support from others. Good self-acceptance provides benefits for diabetics to manage themselves during the treatment period.[16] The patient's acceptance of the disease can prevent complications in the patient.[17]

The DSME program is highly effective in improving glycemic control and lipid profile. DSME can reduce the risk of developing diabetes

complications. Patients' diabetes knowledge, medication adherence, self-efficacy, and quality of life can also be significantly improved.[18] DSME experienced increased involvement in glucose monitoring. Patient education programs can effectively improve patient self-management and psychological support.[13]

The results of this study found that self-care patients with Diabetes Mellitus before the DSME intervention experienced poor self-care. This is because the patient cannot perform self-care. They need family assistance to carry out treatment to health facilities, take medicine, treat wounds, and check blood sugar levels regularly.

Diabetes Self-Management Education and Support (DSME/S) aims to support informed decision-making, self-care behaviors, problem-solving, and active collaboration with the healthcare team.[6] Interventions based on the social cognitive model have a positive effect on the self-care of diabetic patients.[19] Self-care behavior increased significantly in the intervention group over time after being given management interventions other than usual care.[20] Prioritization of management, with a focus on specific interventions having a large impact on the individual forms the basis of ongoing care.[21]

The results of this study obtained self-care of Diabetes Mellitus patients after the DSME intervention experienced good self-care. This means that there is a difference between self-care before and after DSME. The education program provides the right information following the disease problems experienced by diabetic patients. Patients are more likely to go to the clinic for check-ups and check Blood Sugar Levels (KGD) and seek regular treatment.

The existence of high patient self-care can reduce the severity of complications of Type 2 DM.[22] Self-care practices are essential for controlling plasma glucose concentrations in patients. Health workers should improve patient self-care practices to better control plasma glucose and prevent complications related to diabetes mellitus.[23] Good knowledge about diabetic wound care can improve the patient's self-care status regarding diabetic wound care.[24] Self-care has a very useful value for people with DM.[25]

Recommendations

There is a need for special training to improve the skills and knowledge of nurses in conducting integrated health education by reviewing the existing curriculum on the approach to Diabetes Mellitus patients.

Conclusion

The DSME program requires involvement in glucose monitoring by health professionals. Providing education to patients effectively provides psychological support and patient self-care. The self-acceptance of Diabetes Mellitus patients was found to be good, and the patient's self-care was mostly good. The resulting study was the effectiveness of DSME on patient self-acceptance and self-care.

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Ethical Clearance:

The ethical clearance was taken for the present study from the Ethics Commission of Universitas Prima Indonesia.

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