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Changes in Self-Efficacy in Diabetes Mellitus Patients After Implementing Discharge Planning Based on Diabetes Self Care Management Education in Inpatient Hospitals. dr. Haryoto Lumajang

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Abstract

Background: Diabetes (DM) is a chronic disease and is characterized by high blood sugar (glucose) levels, diabetes that is not well controlled, can cause various complications that endanger the patient. One of the pillars of DM management is health education. Health education can increase the self-efficacy of patients so that diabetes management can be optimized. Diabetes Self-Management Education (DSME) is a diabetes management education and support program that can be a place for diabetes patients to get education, support development and maintain the behavior of diabetes patients. The management that will be carried out is to implement DSME-based discharge planning and measure self-efficacy before and after intervention using the Diabetes Management Self Efficacy Scale (DSMES).

Method: The design of this scientific paper uses a case study design. The subjects used were two patients with diabetes mellitus. Data analysis was carried out using descriptive analysis.

Result: Self-efficacy in (Mrs. S) patients who were given DSME-based charge planning increased from an initial self-efficacy score of 58 in the low category to 87 in the high category, Meanwhile the self-efficacy of (Mrs. P) patients who were given charge planning not based on DSME experienced a difference from the initial self-efficacy score of 54 in the low category to 59 in the low category. There is a change in self-efficacy in diabetes mellitus patients (Mrs.S) after implementing DSME-based discharge planning and there was no change in self-efficacy in diabetes mellitus patients (Mrs.P) who applied non-DSME-based discharge planning inpatient RSUD. dr. Haryoto Lumajang.

Keywords: Diabetes Mellitus, Discharge Planning, Diabetes Self Management Education (DSME), Self-efficacy,

Introduction

Diabetes is a disease that lasts a long time or is chronic and is characterized by blood sugar (glucose) levels that are high or above normal values. Glucose that accumulates in the blood due to not being absorbed properly by body cells can cause various organ disorders. If diabetes is not controlled properly, various complications can arise that endanger the sufferer's life. Diabetes mellitus is a non-communicable disease ranked at the top (Haris, 2020). Diabetes mellitus is a health problem that can reduce the quality of life, so DM is a national and world health problem (Kementrian Kesehatan RI., 2020).

The International Diabetes Federation (2021) estimates that 536.6 million people are living with diabetes (diagnosed or undiagnosed) in 2021, and this number is projected to increase by 46%, reaching 783.2 million in 2045. Indonesia is in 1st place - 7th among the top 10 countries with the most diabetes in the world with a total of 10.7 million diabetes sufferers (Ministry of Health of the Republic of Indonesia, 2020). In East Java, the prevalence of diabetes mellitus is in the range of 1.25% of the total (Kemenkes RI, 2018).

According to PERKENI (2019) there are 4 main pillars in the management of type 2 DM, namely education, medical nutritional therapy, physical exercise, and pharmacological intervention. The aspect that plays an important role in the management of type 2 DM is education. This education can be carried out in Discharge planning (Nurjanah, 2018). Discharge planning is a nursing process that begins when the patient is admitted to the hospital, then continues when the patient is being treated or when the patient is allowed to go home from the hospital. Discharge planning, if carried out effectively, can reduce risk, shorten length of stay, reduce treatment costs and hospitalization or recurrence. Discharge planning must be in accordance with hospital procedures because discharge planning is one of the most important things whose goal is so that patients can carry out activities independently when they return home from the hospital. Patients with DM often return to the hospital after returning from the hospital. This happens because the patient is not ready when facing discharge because the information received is very limited so that the patient and family do not understand how to properly manage DM at home (Munif, 2020).

Education for type 2 DM patients is important as an initial step in control. One of the pillars in treating DM is health education, where providing health education can increase sufferers' self-efficacy so that diabetes management can be optimal. Self-efficacy is defined as an individual's belief in his or her ability to organize and carry out certain tasks required to obtain the desired results. Self-efficacy in type 2 diabetes mellitus patients focuses on the patient's belief in being able to carry out behaviors that can support the improvement of the

disease and improve self-care management such as diet, physical exercise, medication control, and DM care in general (Hasibuan, 2021).

A form of education that is commonly used and has been proven to be effective in improving clinical outcomes and quality of life for type 2 DM patients is Diabetes Self Management Education (DSME). Diabetes Self Management Education is a management education and diabetes support program that can be a place for patients with diabetes to receive education, support development and maintain the behavior of diabetes patients (ADA, 2018). The general goal of DSME is to support decision making, self-care behavior, problem solving and active collaboration with the health team to improve clinical outcomes, health status and quality of life (Nurjanah, 2018). Low knowledge of DM sufferers will have an impact on the patient's low self-efficacy and possibly lead to an increase in both acute and chronic disease complications and also cause a decrease in quality of life. DSME can be an intervention to provide knowledge to patients so that patients are able to maintain stable sugar levels. This will be achieved effectively if individuals have the knowledge, skills and self-efficacy (confidence) to carry out DM management behavior. If someone only has certain knowledge, attitudes and skills without self-efficacy which shows the belief that they are capable of doing something, then it is unlikely that someone will carry out that action or behavior (Hasibuan, 2021). Therefore, the author is interested in researching "Changes in Self-Efficacy in Diabetes Mellitus Patients After Implementing Discharge Planning Based on Diabetes Self Care Management Education in Hospital Inpatient Hospitals." Haryoto Lumajang”.

Methods

The management that will be applied is the application of DSME-based discharge planning and measuring self-efficacy before and after the intervention. The design of this scientific paper uses a case study design. The subjects used were two patients with diabetes mellitus. Data analysis was carried out using descriptive analysis.

The research location was at Dr. Haryoto Hospital, Lumajang Regency, East Java. The implementation time of this research was in January 2024. The subject data collection process was carried out in the Melati room.

Respondents who were sampled were 2 people, then given an explanation of the objectives and procedures of the study, and informed consent was obtained. The implementation of the research was carried out by educating the respondents. The two respondents will be divided between one respondent who will be intervened with DSME and

one respondent who is not intervened but still applies Discharge Planning according to standards (control respondents).

DSME intervention was conducted for 60 minutes in each visit, emphasizing the 4 pillars of diabetes mellitus management. The intervention was conducted over 4 days, with 1 session per day. Session 1 covered basic knowledge about DM including definition, etiology, classification, clinical manifestations, pathophysiology, diagnosis, prevention, treatment and complications. Session 2 discussed nutrition/diet management and physical activity/exercise that can be done. Session 3 discusses diabetic foot care and foot exercises and the monitoring that needs to be done. Session 4 discussed psychosocial support, stress management, and patient access to health care facilities. Data collection techniques in this study were interviews, observations, physical examinations, and document studies. The instrument used to measure Self-efficacy is (Diabetes Management Self Efficacy Scale (DSMES)). Self-efficacy measurement was carried out on the first day before the intervention was given and measured again after the intervention session 4 was carried out to determine changes in Self-efficacy.

Results

The second patient is a female, with the name Mrs. S, 58 years old, Muslim, with a high school education. The patient works as an entrepreneur. The patient has suffered from DM for 9 years. The patient with the initials Mrs. P is 60 years old, Muslim, with a high school education. The patient works as a housewife. The patient has suffered from DM for 10 years.

The main nursing problem that arises in both patients is blood glucose instability. Patient Mrs.S with high blood sugar and felt nauseous vomiting. The patient looked weak BP: 115/59 mmHg, Pulse 102x/min, RR 20x/min, Temperature 36.20C, SPO2: 98%, composmentis, GCS E 4 V 5 M 6. Random blood glucose 316 mg/dL. Health status has a history of diabetes mellitus for 9 years. Patient Mrs.P with high blood sugar and nausea vomiting. The patient looked weak BP: 165/101 mmHg, Pulse 108x/min, RR 20x/min, Temperature 36.70C, SPO2: 98%, composmentis, GCS E 4 V 5 M 6. Random blood glucose 238 mg/dL. Health status has a history of hypertension and diabetes mellitus for 10 years. Both patients have a history of diabetes mellitus.

After the main implementation of hyperglycemia management in Mrs. P on January 27, 2024 to January 30, 2024 to stabilize blood sugar, and the implementation of nausea management, while Mrs. S was carried out the main implementation of hyperglycemia management, nausea management and combined in the education section with diabetes self management education. The implementation of DSME has been carried out as many as 4

sessions with a duration of time between 1-2 hours for each session. The first implementation was carried out on January 27, 2024, namely hyperglycemia management, nausea management, and DSME (session 1 replied to basic knowledge about DM including definition, etiology, classification, clinical manifestations, pathophysiology, diagnosis, prevention, treatment and complications). The second implementation was carried out on January 28, 2024, namely hyperglycemia management, nausea management, and DSME (session 2 discusses nutrition / diet management and physical activity / exercise that can be done). The third implementation was carried out on January 29, 2024, namely hyperglycemia management, nausea management, and DSME (session 3 discusses diabetic foot and foot care and monitoring that needs to be done). The fourth implementation was carried out on January 30, 2024, namely hyperglycemia management, nausea management, and DSME (session 4 discussed psychosocial support, stress management, and patient access to health care facilities).

Table 1. Blood Glucose Level of Respondents

Respondents	Day 1	Day 2	Day 3	Day 4
Mrs. S	285 mg/dL	243 mg/dL	142 mg/dL	123 mg/dL
Mrs.P	216 mg/dL	238 mg/dL	186 mg/dL	230 mg/dL

Table 2. Self-Efficacy Score of Respondents

Respondents	Self-efficacy Score Before Intervention	Self-efficacy Score After Intervention
Mrs. S	58 (Low)	87 (High)
Mrs.P	54 (Low)	59 (Low)

From the evaluation results after the patient's nursing actions were carried out for 4 days, the patient was very cooperative. The patient's general condition has improved both can be seen from the development of vital signs, blood glucose checks and the level of patient self-efficacy. On January 27, 2024 Mrs. S's condition at the time of the initial assessment with high blood sugar and feeling nauseous vomiting. The patient looked weak BP: 115/59 mmHg, Pulse 102x/min, RR 20x/min, Temperature 36.20C, SPO2: 98%, composmentis, GCS E 4 V 5 M 6. Random blood glucose 316 mg/dL. Health status has a history of diabetes mellitus for 9 years. The self-efficacy score is 58 in the Low category. Patient Mrs.P with high blood sugar and nausea vomiting. The patient looked weak TD: 165/101 mmHg, Pulse 108x/min, RR 20x/min, Temperature 36.70C, SPO2: 98%, composmentis, GCS E 4 V 5 M 6. Random blood glucose 238 mg/dL. Health status has a history of hypertension and diabetes mellitus for 10 years. Self-efficacy score is 54 low category .

After the main implementation of hyperglycemia management in Mrs.P on January 27, 2024 to January 30, 2024 to stabilize blood sugar, and the implementation of nausea management, while Mrs. S was carried out the main implementation of hyperglycemia management, nausea management and combined with discharge planning based on diabetes self-management education to see changes in self-efficacy for 4 days. The patient's condition on January 30, 2024 was Mrs. S with BP: 128/80 mmHg, Pulse 82x/min, RR 20x/min, Temperature 36.40C, SPO2: 98%, composmentis, GCS E 4 V 5 M 6. Random blood glucose 123 mg/dL. Self-efficacy score is 87 high category Patient Mrs.P BP: 145/93 mmHg, Pulse 75x/min, RR 20x/min, Temperature 36.60C, SPO2: 98%, composmentis, GCS E 4 V 5 M 6. Random blood glucose 230 mg/dL. Health status has a history of hypertension and diabetes mellitus for 10 years. Self-efficacy score is 59 low category .

The results of the evaluation stated that there was a difference in self-efficacy in patient Mrs.S who was given diabetes self management education-based discharge planning, an increase from the initial self-efficacy score of 58 low category turned into 87 high category, while self-efficacy in patient Mrs.P who was given discharge planning not based on diabetes self management education experienced a difference from the initial self-efficacy score of 54 low category turned into 59 low category.

Discussion

Times The difference in self-efficacy in patient Mrs.S who was given diabetes self management education-based discharge planning increased from an initial self-efficacy score of 58 low categories to 87 high categories, while self-efficacy in patient Mrs.P who was given discharge planning not based on diabetes self management education experienced a difference from an initial self-efficacy score of 54 low categories to 59 low categories.

This is in line with research conducted by Uun Nurjanah and Alam Guna Irawan (2018) entitled “The Effect of Self Care Management Education in Discharge Planning on Self Efficacy of Type 2 Diabetes Mellitus (DM) Patients at the Inpatient Hospital Bayu Asih Purwakarta” which found that there were significant differences in self-efficacy and diabetes self management education (DSME) actions in the intervention group before and after the provision of Diabetes Self Management Education (DSME) in Diabetes Mellitus patients with an average score of the intervention group higher than the control group. There is a significant effect of Diabetes Self Management Education (DSME) on self-efficacy in patients with diabetes mellitus.

This is supported in research conducted by (Murtaqib *et al.*, 2019), entitled *The Effect Self Management Education and Supports in Improving the Self-Efficacy of Patients with Type 2 Diabetes Mellitus* ($p = 0.001$), where the results are the treatment group and the control group have different significance on self-efficacy before and after being given DSME because it increases the patient's knowledge of self-care independently compared to just providing knowledge related to diabetes mellitus. The results of Hasibuan's research (2021) in the working area of the Batunadua Health Center, Padangsidempuan City also showed that there was a significant difference in self-efficacy scores before and after the DSME intervention had a better effect on increasing self-efficacy compared to the group without intervention. The study concluded that DSME affects the self-efficacy of type 2 DM patients.

This is in line with the research of Annisa Nur Nazmi, *et al* (2023) entitled *"The Effect of Diabetes Self Management Education with Audiovisual on Self-Efficacy in Patients with Type 2 DM"* with the results that there is an effect of diabetes self management education (DSME) with audiovisual methods on self-efficacy in patients with type 2 DM. Providing DSME with audiovisual methods plays an important role in increasing self-efficacy in patients with type 2 DM in controlling blood sugar, physical activity, dietary management, routine medication and stress management.

According to PARKENI (2021) there are 4 main pillars in the management of type 2 DM, namely education, medical nutrition therapy, physical exercise, and pharmacological interventions, the aspect that plays an important role in the management of type 2 DM is education. According to PERKENI (2021) there are 4 main pillars in the management of type 2 DM, namely education, medical nutrition therapy, physical exercise, and pharmacological interventions, the aspect that plays an important role in the management of type 2 DM is education (ADA, 2018). This education can be done in discharge planning (Nurjanah, 2018). One of the pillars in the management of DM is health education, where the provision of health education can increase the self-efficacy of patients so that diabetes management can be optimal. The form of education that is commonly used and proven effective in improving the clinical outcomes and quality of life of patients with type 2 DM is Diabetes Self Management Education (DSME). Diabetes Self Management Education is a diabetes management education and support program that can be a place for patients with diabetes to get education, support development and maintain the behavior of diabetic patients (ADA, 2018).

DSME is a suitable intervention included in discharge planning to provide knowledge to DM patients so that patients are able to increase self-efficacy and can maintain stable sugar levels. This will be obtained effectively if individuals have the knowledge, skills and self-

efficacy (belief) to carry out DM management behavior. Self-efficacy in type 2 diabetes mellitus patients focuses on the patient's belief in being able to perform behaviors that can support the improvement of their disease and improve their self-care management such as diet, physical exercise, medication, glucose control, and general DM care.

Conclusion

- 1) Self-efficacy in patients with diabetes mellitus (Mrs. S and Mrs. P) before the application of discharge planning based on diabetes self-care management education in the inpatient hospital. Haryoto Lumajang is in the low category.
- 2) Self-efficacy in patients with diabetes mellitus (Mrs.S) after the application of discharge planning based on diabetes self-care management education at the inpatient hospital. Haryoto Lumajang is in the high category and self-efficacy in patients with diabetes mellitus (Mrs. P) who are not applied discharge planning based on diabetes self-care management education in the hospitalization of RSUD. Haryoto Lumajang is in the low category.

There is a change in self-efficacy in patients with diabetes mellitus (Mrs.S) after the application of discharge planning based on diabetes self-care management education at the Inpatient Hospital. Haryoto Lumajang from the low category to the high category, and there is no change in self-efficacy in patients with diabetes mellitus (Mrs. P) who are not applied discharge planning based on diabetes self-care management education at the Inpatient Hospital. Haryoto Lumajang from low category to low category.

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Conflict of Interest

Writer state that there is no conflict of interest.

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