

The Effect of Diabetes Self Management Education (DSME) With the Motivation Method on Self Care Behavior of Diabetes Mellitus Patients in the Working Area of Bolo Public Health Center, Bima Regency

Ahmad¹, Julhana², Indra Rahmad³, Taufiqurrahman⁴, Dian Vitasari⁵

^{1,2,3,4,5}Poltekkes Kemenkes Mataram, Mataram, NTB, Indonesia

Abstract

Background: Diabetes mellitus (DM) is a condition where there is an increase in blood glucose levels because the body cannot produce or produce insulin or the body cannot use insulin effectively. DM treatment is generally lifelong, including risk factor control, activity control, nutrition, and medication. DM requires long-term treatment, so it is necessary to take an approach by providing motivation to carry out good self-care behavior. One effort that can be done is through Diabetes Self-Management Education (DSME) with a motivational method, a continuous process carried out to facilitate the knowledge, skills, and abilities of DM sufferers to carry out self-care. Purpose: This study aims to analyze the effect of DSME with a motivational method on self-care behavior of diabetes mellitus patients. Method: This type of quasi-experimental study with one group pre-test and post-test. The sample of type 2 DM patients was 50 respondents using an accidental sampling technique. Results: Based on the Wilcoxon test, ap value of 0.000 ($p < 0.05$) was obtained for the knowledge variable, ap value of 0.000 ($p < 0.05$) for attitudes, and ap value of 0.000 ($p < 0.05$) for behavior. These results indicate a significant effect of diabetes self-management education (DSME) using motivational methods on improving knowledge, attitudes, and behavior. It can be concluded that diabetes self-management education (DSME) using motivational methods has an effect on knowledge, attitudes, and behavior.

Keywords: DSME, Motivation, Self Care Behavior, Diabetes Mellitus

Introductionn

Diabetes mellitus is a chronic, progressive disease characterized by the body's inability to metabolize carbohydrates, fats, and proteins, leading to hyperglycemia (high blood glucose levels).(1)Diabetes mellitus is a group of metabolic diseases characterized by hyperglycemia resulting from abnormalities in insulin secretion, insulin action, or both. DM can be classified into several types: type 1, type 2, and existing type 2. Type 2 DM is the most common type, accounting for over 90-95%.(2)Diabetes Mellitus is also a non-communicable disease whose management requires special attention and long-term patient care, so good independent self-care management is needed to prevent complications.

According toThe International Diabetes Federation (IDF) estimated in 2017 that at least 463 million people aged 20-79 worldwide had diabetes in 2019, equivalent to a prevalence rate of 9.3% of the total population of that age. The prevalence of diabetes is expected to increase with age, reaching 19.9%, or 111.2 million people aged 65-79. This figure is predicted to continue to rise, reaching 578 million by 2030 and 700 million by 2045.(3)Indonesia ranks fourth out of the top ten countries in the world, cases of type 2 Diabetes Mellitus with a prevalence of 8.6% of the total population, estimated to increase from 8.4 million people in 2000 to around 21.3 million people in 2030. West Nusa Tenggara Province (NTB) is one of the provinces that continues to experience an increase in Diabetes Mellitus sufferers in Indonesia with a total of 64,544 sufferers. Bima Regency itself has a total of 5,285 DM sufferers spread across 21 Community Health Centers.(4)

Diabetes mellitus, a chronic disease, is the fourth leading cause of death in developing countries. Therefore, special attention is needed. One way to do this is by increasing knowledge and changing attitudes and behaviors through education using the Diabetes Self-Management Education (DSME) method. Diabetes Self-Management Education (DSME) is a crucial and primary effort in optimizing effective care management for diabetes patients, improving patients' knowledge, behavior, skills, and ability to care for themselves independently.⁽⁵⁾ This is supported by other research using a systematic literature review design. Articles were collected through the PubMed and Google Scholar databases using the keywords "DSME Web Application" and "DSME Smartphone." The criteria used for articles were publications between 2014 and 2020. The literature review results indicate that the app-based DSME method is effective in improving self-management in people with type 2 diabetes.⁽⁶⁾ In another case study, Diabetes Self Management Education (DSME) management emphasizes self-management of lifestyle changes to blood glucose levels using a case study approach with subjects aged 45-65 years, with a history of type 2 diabetes. Self-management assessment uses the Diabetes Self Management Questionnaire (DSMQ) and to measure blood glucose levels using a glucometer. The results showed that the implementation of DSME can improve self-care management knowledge, and based on the results of the fasting blood glucose test, subject one experienced a decrease of 29 mg/dl, while subject two experienced an increase of 11 mg/dl due to non-compliance with diet and taking medication. DSME discussions direct patients in carrying out self-management which has a positive impact on reducing diabetes complications, increasing healthy living behaviors, and facilitating knowledge, skills, and self-care behavior.⁽⁷⁾

Diabetics are not only required to have knowledge about diabetes but also must have the skills and motivation to manage diabetes independently well.⁽⁸⁾ As DM sufferers' knowledge and ability to understand and implement diabetes self-management increases, it will determine the success of diabetes control with blood glucose levels within normal limits, thereby reducing the risk of complications. This condition helps influence quality of life. Based on research by Habibbah et al. (2019), it was found that there was a significant influence on increasing the Self Care Behavior value of DM patients using audiovisual media before and after being given DSME.⁽⁹⁾ One form of effort to improve patient knowledge and behavior is to provide motivation and health education Diabetes Self-Management Education (DSME), with the aim of optimizing metabolic control, preventing acute and chronic complications, improving quality of life by influencing knowledge and producing changes in attitudes and behaviors needed to maintain and improve health.

Study Aminah, et al (2022), obtained results there is an educational influence *Diabetes self-management education* (DSME) with booklet media on dietary compliance of type 2 DM patients, where education plays an important role in the management of type 2 DM. Providing education can change patient behavior in carrying out self-care.⁽¹⁰⁾ Another study found that after receiving audiovisual education, all 37 elderly participants had a good level of knowledge about DSME. Diabetes patients received good DSME education through audiovisual media. It is recommended that information about this activity be disseminated to the public to help them understand the importance of DSME in diabetes patients.⁽¹¹⁾ The objectives of this study are; 1) Identifying the characteristics of respondents, 2) Identifying knowledge, attitudes, behavior related to self-care behavior before and after being given Diabetes Self Management Education (DSME) with motivational methods, 3) Analyzing the influence of Diabetes Self Management Education (DSME) with motivational methods on knowledge, attitudes, and behavior of Self Care Behavior of diabetes mellitus patients in the working area of Bolo Health Center, Bima Regency.

Research Methods

This type of research is quasi-experimental with a one-group pre-test and post-test design. The sample in this study was 50 respondents with type 2 diabetes using accidental sampling techniques. The conceptual framework in this study consists of independent variables, in this study is the influence of Diabetes Self-Management Education (DSME) using the motivational method, on the dependent variables are knowledge, attitudes, behaviors related to Self-Care Behavior Diabetes Mellitus. Data were analyzed using the Wilcoxon test. The study was conducted in the working area of the Bolo Community Health Center, Bima Regency from January to August 2025.

The SCB DM questionnaire generally covers several aspects of self-care, including:

1. Diet: Questions about the types of food consumed, frequency of eating, and eating patterns.

2. Physical Activity: Questions about the type of exercise performed, frequency, and duration of physical activity.
3. Taking Medication: Questions regarding patient compliance in taking diabetes medication as recommended by the doctor.
4. Blood Sugar Monitoring: Questions regarding the frequency and method of monitoring blood sugar levels by patients.
5. Foot Care: Questions about foot care, regular foot exams, and proper footwear use.

Results And Discussion

1. Data on Characteristics of Respondents with Type 2 Diabetes Mellitus inPKM Bolo Working Area, Bima Regency2025

Table 4.1 Characteristics of Respondents with Type 2 Diabetes Mellitus Based on Age, Gender, Education Level, Eating Habits, Duration of Disease, History of Medication Consumption inPKM Bolo District Work Area. Bima

Variables	Group	
	n	%
Age		
Late adulthood 36-45 years	8	16
Early old age 46-55 years	12	24
Late elderly period 56-65 years	25	50
Seniors 66 years and over	5	10
Gender		
Man	16	32
Woman	34	68
Level of education		
No school	1	2
Elementary School	3	6
JUNIOR HIGH SCHOOL	7	14
SENIOR HIGH SCHOOL	16	32
Diploma	20	40
Bachelor	3	6
Eating Habits Patterns		
Diet	12	24
Not on a diet	38	76
Duration of Illness		
<5 Years	12	24
>6 Years	38	76
Drug Consumption History		
DM	30	60
DM and HT	20	40

Source: Primary Data of Respondents in the PKM Bolo Regency Work Area. Bima in 2025

Based on table 4.1 of 50 respondents, the age of most respondents is almost half in the late elderly age range of 56-65 years as many as 25 people (50%), the gender of respondents is mostly female as many as 34 people (68%), the last education of respondents is almost half of them is Diploma education as many as 20 people (40%), the eating habits of respondents are almost all not on a diet as many as 38 people (76%), the duration of suffering from diabetes >6 years occurs in almost all respondents as many as 38 people (76%), and most respondents have a history of consuming diabetes mellitus medication as many as 30 people (60%) and almost half have a history of consuming diabetes mellitus and hypertension medication as many as 20 people (40%).

2. Distribution DataFrequency of Knowledge, Attitudes, and Behavior, Before and After Diabetes Self-Management Education (DSME) with Motivation Methods for Type 2 Diabetes Mellitus Respondents in the PKM Bolo Work Area, Bima Regency in 2025

Table4.2 Frequency Distribution of Knowledge, Attitudes, and Behavior, Before and After Diabetes Self-Management Education (DSME) was Given Using the Motivation Method to Respondents with Type 2 Diabetes Mellitus in the PKM Bolo Work Area, Bima Regency

Variables	Group			
	Pre-Test		Post Test	
	n	%	n	%
Knowledge Mean ± SD	44.20 ± 12.792		78.40 ± 9.765	
Tall	0	0	31	62
Currently	12	24	19	38
Low	38	76	0	0
Attitude Mean ± SD	43.60 ± 12.081		79.00 ± 9.530	
Good	0	0	30	60
Enough	11	22	20	40
Not enough	39	78	0	0
Behavior Mean ± SD	17.48 ± 3.278		34.38 ± 5.283	
Good	0	0	37	74
Enough	6	12	13	26
Not enough	44	88	0	0

Source: Primary Data of Respondents in the PKM Bolo Regency Work Area. Bima 2025

Based on table 4.2, it was found that most of the respondents' pre-test knowledge scores before being given DSME with the motivation method were in the low category, namely 38 people (76%) with an average pre-test score of 44.20 with a standard deviation of 12,792. Then after being given treatment, a post-test measurement was carried out, almost all respondents' knowledge was in the high category, as many as 31 people (60%) with an average post-test score of 78.40 with a standard deviation of 9,765. Then, in the respondents' attitudes before being given DSME with the motivation method, most of the respondents were in the less category, as many as 39 people (78%) with an average pre-test score of 43.60 with a standard deviation of 12,081. After being given treatment, a post-test measurement was carried out, most of the respondents' attitudes were in the good category, as many as 30 people (60%) with an average post-test score of 79.00 with a standard deviation of 9,530. After that, behavioral measurements were carried out before being given DSME using the motivation method, most of the respondents were in the less category as many as 44 people (88%) with an average pre-test value of 17.48 with a standard deviation of 3,278. After being given treatment, post-test measurements were carried out, most of the respondents' behavior was in the good category as many as 37 people (74%) with an average post-test value of 34.38 with a standard deviation of 5,283.

3. Results of the Analysis of the Influence of Diabetes Self-Management Education (DSME) Using the Motivation Method on the Knowledge, Attitudes, and Self-Care Behavior of Type 2 Diabetes Mellitus Respondents in the PKM Bolo Work Area, Bima Regency

Table 4.3 Results of the Analysis of the Influence of Diabetes Self-Management Education (DSME) Using the Motivation Method on the Knowledge, Attitudes, and Self-Care Behavior of Type 2 Diabetes Mellitus Respondents in the PKM Bolo Work Area, Bima Regency in 2025

Variable	Median		CI 95%		Median Difference	pvalue
	Pre-test	Post-test	Pre-test	Post-test		
Knowledge	40.00	80.00	40.56-47.84	75.62-81.18	40.00	0.000
Attitude	40.00	80.00	40.17-47.03	76.29-81.71	40.00	0.000
Behavior	18.00	36.00	16.55-18.41	32.88-35.88	18.00	0.000

Source: Primary Data of Respondents in the PKM Bolo Regency Work Area. Bima 2025

The results of this study found an increase in respondents' knowledge, attitudes, and behavior after treatment. This increase in knowledge and attitudes was accompanied by a median increase, from 40.00 before treatment to 80.00 after treatment. Similarly, an increase in behavior was accompanied by a median increase, from 18.00 before the intervention to 36.00 after treatment.

Based on statistical tests using the Wilcoxon test, it was obtained p value of 0.000 ($p < 0.05$) on the knowledge variable, it was found p value of 0.000 ($p < 0.05$) on attitude, and it was found that p value of 0.000 ($p < 0.05$) on behavior. Showing that there was an increase after being given educational media in the form of diabetes self-management education (DSME) with a motivational method. These results indicate that H_a is accepted, meaning there is an effect of providing education using diabetes self-management education (DSME) media with a motivational method on increasing knowledge, attitudes, and behavior as an effort to prevent more serious complications from type 2 diabetes mellitus.

Discussion

- 1) Characteristics of Respondents with Type 2 Diabetes Mellitus Based on Age, Gender, Education Level, Eating Habits, Duration of Disease, History of Medication Consumption in PKM Bolo District Work Area. Bima

Self care DM patients are influenced by several factors. Based on the respondent characteristics data in this study in Table 4.1 of 50 respondents, the characteristics of respondents based on age are mostly in the late elderly age range of 56-65 years as many as 25 people (50%). According to Fanani, the early age of 40 years there is an increase in blood glucose levels of 1-2 mg% per year. Type 2 diabetes is often associated with age factors because people over 40 years have a 6 times greater risk of developing type 2 diabetes due to the occurrence of insulin resistance accompanied by decreased glucose metabolism in cells. (12) This is due to the aging process, which affects the ability of pancreatic beta cells to produce insulin. The risk of developing diabetes increases with age, as well as with inactivity, decreased muscle mass, and weight gain. Regarding self-care, Fahmi explained in his research that there is a tendency for elderly patients to have better self-care than younger patients, indicating a significant relationship between age and self-care in people with type 2 diabetes. (13)

The majority of respondents were female (34 people, 68%). The results of the study indicate that the majority of respondents with diabetes mellitus were female. Gender is a biological characteristic that differentiates the characteristics and biological functions of men and women. According to Imelda, women are at greater risk of developing diabetes mellitus. This is because women have higher cholesterol levels than men. Men have a higher body fat content of 15-20% of their body weight, while women have a higher body fat content of 20-25%. Therefore, the increase in body fat levels in women is higher than in men, making the risk of diabetes mellitus in women 3-7 times higher than in men, which

is 2-3 times higher.(14)Sari et al., in their research, explained that there is a significant relationship between gender and self-care in the elderly.(15)

The majority of respondents, 20 (40%), had a diploma. Education is an integral part of the learning process. It's a necessity and a means of acquiring various types of information to increase knowledge in various areas, including health.(16)This is in line with Rahmadanti's research, where the majority of respondents had diploma/bachelor's degrees, namely 48.5%.(17)Individuals with higher education often have more knowledge about health, so they are more aware of maintaining their health.(18)However, individuals with a higher education background do not guarantee protection from diabetes mellitus. Several other factors contribute, such as occupation, lifestyle, adherence, and genetics. These results are supported by other research showing no association between education level and the incidence of diabetes mellitus.(19)

Almost all respondents (38 people) did not follow a diet, indicating that they did not follow a diet. Unpleasant diet foods and a lack of understanding about diet were among the causes of non-compliance among people with diabetes in managing their diabetes.(20)Dietary non-compliance is a major problem in type 2 diabetes patients, and this can be caused by a lack of motivation. Stronger motivation leads to higher levels of dietary compliance. Conversely, lower motivation leads to lower dietary compliance. Patients with strong self-motivation are more likely to adhere to and follow the diet program recommended by healthcare professionals. Furthermore, poor dietary adherence in diabetes patients is also due to a lack of knowledge and limited information on how to maintain a healthy diet. Knowledge about diabetes management is a crucial component for effective diabetes management.(21)The principle of meal planning is based on the nutritional status of the DM patient and on dietary modifications based on lifestyle, eating habits, economic status, and environment. Dieting is the most difficult habit to change and has the lowest level of adherence in self-management for DM patients, requiring significant motivation.

Nearly all 38 respondents (76%) had diabetes for more than 6 years. Those with diabetes for more than 10 years had a 19-fold higher risk than those with diabetes for less than 10 years. Furthermore, the average diabetic neuropathy patient had diabetes mellitus for 10 years, and uncontrolled blood sugar levels in those with diabetes for more than 10 years can lead to complications.(22)The longer a person suffers from diabetes, the higher their risk of developing acute and chronic complications. Febriana, in her research, stated that there is a relationship between the duration of diabetes and self-management in type 2 diabetes patients. Patients who have had diabetes for a long time are more likely to apply diabetes self-management than patients who have just been diagnosed with diabetes. Patients who have had diabetes for a long time have more knowledge about diabetes in their daily lives. For patients who are newly diagnosed with diabetes, it can be an experience and a challenge to manage their daily lives.(23)Patients who have long suffered from diabetes understand the importance of diabetes self-care and have the skills to manage it.

Medical therapy: Most respondents had a history of taking diabetes mellitus medication, with 30 (60%) having a history of taking medication. This aligns with Rahmadanti's research, which found that 100% of respondents used oral medication. Respondents took antidiabetic medication alone or in combination with other antidiabetic medications.(17). Most respondents in this study had comorbidities and almost half had a history of taking diabetes and hypertension medication (20 people (40%). This is in line with Rahmadanti's research, where most respondents had comorbidities, namely 65.3%. Respondents who had comorbidities stated they had one or more comorbidities. The highest distribution of comorbidities was hypertension (35.1%), followed by cholesterol (20.7%), gastritis (14.4%), tingling (13.5%), visual impairment (10.8%), OA (2.7%), heart disease (1.8%), and post-stroke (0.9%). Similar results were also obtained by other researchers, namely the frequency of respondents with comorbidities of hypertension (67%). According to Perkeni, often there is a delay in patients not realizing they have

DM. This is due to the lack of awareness of patients in carrying out initial screening. Therefore, screening is needed for high-risk groups under 45 years of age, overweight or those with a family history of DM.(24).

2) Analyzing the Influence of Diabetes Self-Management Education (DSME) Using the Motivation Method on Knowledge, Attitudes, and Self-Care Behavior of Diabetes Mellitus Patients in the Bolo Community Health Center Work Area, Bima Regency

The results of the analysis of the influence of DSME motivational methods on increasing knowledge, attitudes and self-care behavior obtained a p-value of 0.000, meaning that DSME with motivational methods has a significant effect on increasing knowledge, attitudes and self-care behavior of DM sufferers. The high prevalence and complications of DM such as hyperglycemia and hypoglycemia are closely related to inappropriate knowledge and attitudes of DM sufferers.(25)In line with the results of other studies, the increase in respondents' knowledge before (98%) after increased (100%), while in the attitude category it increased from 71.4% to 100%.(26)Similar results in other studies also found that health education interventions had a strong influence on the knowledge and attitude variables of people with diabetes.(27)Education for DM patients can be provided through Diabetes Self Management Education (DSME), which is a health promotion method to facilitate knowledge, skills and self-care behavior abilities that are very much needed by diabetes sufferers.(28).

Education provided through DSME can facilitate the knowledge, skills and abilities of DM patients in carrying out self-care.(29)Education for DM patients helps them make decisions, develop goals, develop beliefs, and motivate them regarding care. Therefore, researchers combined DSME with motivational methods, as motivation is essential and is a key driver of self-care in patients with diabetes mellitus. This effort aims to increase respondents' knowledge, thereby improving their attitudes and behaviors regarding self-care for type 2 DM. Motivation typically originates from within the individual, but several factors influence this, including knowledge.

A person who has a high level of motivation will always make what he wants come true, for example, a DM patient who is required to undergo regular treatment, with high motivation it will influence his thoughts on how to carry it out and after that it will be realized by undergoing treatment, if successful the person will feel satisfied.(30)The motivational approach to health education using DMSE methods goes beyond simply using counseling and counseling, but also develops a psychological approach to motivate people with DM. Basri's research, DSME, uses guidelines, counseling, and behavioral interventions to increase knowledge about DM and improve individual and family skills in managing the disease.(30)Other research shows that DSME influences the knowledge and skills of type 2 DM patients in performing self-care. Regular monitoring is needed to determine whether improvements in self-care knowledge and skills have become good habits for type 2 DM patients.(31)

Diabetes Self-Management Education(DSME) with motivational methods significantly influences and improves self-care behavior in type 2 DM patients, thus bringing positive changes in lifestyle and clinical status of patients. Self-care behavior is very important because it can significantly improve the quality of life of sufferers, control blood sugar and lipid levels, and prevent or delay serious complications such as eye, kidney, and nerve diseases. By doing self-care regularly, patients can manage their own disease, which includes a healthy diet, physical activity, blood sugar monitoring, and medication adherence, so that the disease remains under control and quality of life is maintained. In Fahmi's research, DSME can change patient behavior through information provided to patients. This is in line with other studies stating that providing self-care education is very beneficial in improving the knowledge and attitudes of DM sufferers, where providing education is very crucial in the management of DM disease management with increased knowledge and appropriate attitudes are expected to be able

to change the behavior of DM sufferers which is the main basis for successful treatment. So it is expected to prevent long-term complications that will have a negative impact on DM sufferers, namely diabetic retinopathy, neuropathy and disorders of macro or micro blood vessels, and diabetic ulcers.(32)Providing information to patients is a stimulus that can increase knowledge, thereby raising awareness to behave as expected.(13)

Providing DSME can produce various positive outcomes for DM sufferers, besides having different abilities and responses to the given stimulus, so that the patient's behavior and ability to carry out self-care are also different.(28)Fahmi's research found an increase in self-care after receiving Diabetes Self-Management Education (DSME) in the intervention group. Another study by Nurjannah found that health education using the Diabetes Self-Management Education (DSME) method resulted in a significant difference in self-care levels between the pre- and post-tests.(33)The success of controlling DM lies in the high motivation of DM patients with encouragement and support from other parties, making patients intrinsically motivated so that they will have better awareness in maintaining their health compared to patients who receive pressure or pressure from outside.(17)Patients with high motivation will demonstrate positive behavior and confidence in achieving their health. According to Setiawati, health education is a series of efforts to influence others, from individuals, groups, families, and communities, to adopt healthy lifestyles.(34)

Diabetes Self-Management Education(DSME), with the goal of optimizing metabolic control, preventing acute and chronic complications, and improving quality of life by influencing and producing changes in knowledge, attitudes, and behaviors necessary to maintain or improve health. Education can increase a person's knowledge, which can be used to change attitudes or simply broaden their horizons. The goal of health education is to change the attitudes and behaviors of individuals or communities.(35)However, one factor influencing self-care behavior is high motivation in self-care management. Self-care management in diabetes patients is a program that must be implemented throughout life with full responsibility. Therefore, strong motivation and determination are needed from the patient. In Rastipati's study, respondents who practiced self-care management, both independently and continuously, experienced an improved quality of life, while respondents who did not practice self-care management experienced a decline. Patients with diabetes mellitus are able to perform self-care management, influenced by several factors, including family support, knowledge about diabetes self-care management, motivation, and communication with healthcare providers.(36)

The results of the analysis and discussion above, the researcher assumes that good motivation possessed by DM patients will arouse their desire to recover so that motivation will also create self-care behavior in DM patients and increase knowledge, resulting in changes in attitudes and good behavior, supporting disease improvement and self-care management such as regular exercise, setting a schedule, amount, and type of food and routinely checking their blood glucose levels. The success of DM management depends on the type of education and motivation of patients to carry out self-care management that functions to control symptoms that occur in psychology and the emergence of complications. Motivation in type 2 DM patients is one of the important factors because it can provide a strong impetus to carry out self-care management. The motivation of DM patients will increase along with the increase in knowledge for DM patients in carrying out self-care for their disease. Motivation is a predictor of compliance in treatment and glycemic control regimens. According to social cognitive theory, human motivation is based on cognitive processes and through thought processes based on the knowledge possessed by individuals so that individuals will be motivated to take action if it is in accordance with the goals, plans and expected results.

Conclusion

This study concluded that the level of knowledge of respondents before being given DSME treatment with the Motivation Method was the majority low as many as 38 people (76%) and after being given treatment the majority of respondents' knowledge level was high as many as 31 people (62%) and moderate knowledge as many as 19 people (38%). The attitude of respondents before being given DSME treatment with the Motivation Method was the majority less as many as 39 people (78%) and after being given treatment the majority of respondents' attitudes were good as many as 30 people (60%) and sufficient attitudes as many as 20 people (40%). The behavior of respondents before being given DSME treatment with the Motivation Method was the majority less as many as 44 people (88%) and after being given treatment the majority of respondents' behavior was good as many as 37 people (74%) and sufficient behavior as many as 13 people (26%). The results of the study showed that there was an influence of providing education using diabetes self-management education (DSME) media with motivational methods on increasing knowledge, attitudes, and behavior.

Suggestion

This study recommends that health workers provide DSME by increasing motivation aimed at decision-making, self-care, problem-solving, in the management of diabetes mellitus, thereby improving health status and quality of life.

Bibliography

1. Fain.JA Medical-Surgical Nursing, Clinical Management Expected Outcomes. 8th ed. Singapore: Saunders Elsevier; 2014.
2. American Diabetes Association. Diabetes Care in the Hospital: Standards of Medical Care. Diabetes Care. 2021;1(January):211–20.
3. IDF. 183 Million People Unaware They Have Diabetes.
4. Non-Communicable Diseases, Mental Health, and Drugs Section of the National Disaster Management Agency (DKPN). Coverage of Health Services for Diabetes Mellitus Patients in NTB Province in 2021. Health Services for Diabetes Mellitus (DM) Patients in NTB Province. 2023.
5. Kurniawati T, Huriah T, Primanda Y. The Effect of Diabetes Self Management Education (DSME) on Self Management in Diabetes Mellitus Patients. J Ilm Kesehatan. 2021;12(2):588–94.
6. Haskas Y, Rizkiani I, Restika I. Literature Review: Evaluation of Diabetes Self Management Education (DSME) Method in Type 2 Diabetes Mellitus Patients. Nurs Arts. 2021;14(2):127–41.
7. Siska Yulia Hananto1*, Suci Tuti Putri2 APWP. Case Study: Management of Diabetes Self Management Education (DSME) on Blood Glucose Levels in Type 2 Diabetes Mellitus Patients. Journal of Community Nurses. 2022;20(4):128–37.
8. Kumala Sari Pespita Dewi Wahyuni, Setiasih LA. THE EFFECT OF EDUCATION ON SELF CARE BEHAVIORS OF TYPE 2 DIABETES MELLITUS PATIENTS AT UBAYA DIABETES HOME. J Wiyata. 2021;8:2.
9. Habibah U, Ezdha AUA, Harmaini F, Fitri DE. The Effect of Diabetes Self Management Education (DSME) with Audiovisual Methods on Self Care Behavior of Diabetes Mellitus Patients. Heal Care J Kesehatan. 2019;8(2):23–8.
10. Aminah S, Amelia KR, Rianto B, Safitri VD. The Effect of Diabetes Self-Management Education (DSME) Using Booklet Media on Diet Compliance of Type 2 DM Patients at the South Cimahi Community Health Center. Malahayati Nurs J. 2022;5(2):432–42.
11. Luh N, Inca P, Agustini B, Megayanti SD, Ayu I, Pangruating N. Audiovisual Education of Diabetes Self Management Education for Type 2 Diabetes Mellitus Patients in Sumerta Village, East Denpasar. 2025;4(2):201–6.
12. Diana. RELATIONSHIP BETWEEN AGE, GENDER, AND DURATION OF DIABETES WITH THE INCIDENCE OF DIABETIC PERIPHERAL NEUROPATHY (Relationship Between Age, Gender, and Duration of Diabetes Patients With the Incidence of Diabetic Peripheral Neuropathy).

Caring Nurs. 2019;3(2):31–37.

13. Fahardianto F, Rosyid FN. The Effect of Diabetes Self Management Education (DSME) on Self Care of Type 2 Diabetes Mellitus Patients. *Malahayati Nurs J*. 2023;5(12):4132–42.
14. Imelda SI. Factors Influencing the Occurrence of Diabetes Mellitus at Harapan Raya Community Health Center. *Sci J*. 2019;8(1):28–39.
15. Sari SW, Ulfiana E, Fauziningtyas R. Analysis of Factors Related to Self-Care in Elderly Residents in Nursing Homes. *J Community Nursing [Internet]*. 2020;5(1):48. Available from: <http://e-journal.unair.ac.id/IJCHN>
16. Simon MG. The Relationship Between Family Support and Motivation of Diabetes Mellitus Patients in Controlling Blood Sugar Levels of Type 2 Diabetes Mellitus Patients in the Work Area of the Ruteng City Community Health Center, Manggarai. *J Health*. 2020;8(1):14–24.
17. Mustika Rahmadanti, Noor Diani A. Motivation and Self-Management of Type 2 Diabetes Mellitus Patients. *J Nursing and Health*. 2020;8(1):87–92.
18. Notoatmodjo S. *Health Education and Behavior*. Jakarta: PT Rineka Cipta; 2010.
19. Mamangkey. The Relationship between Education Level and Family History of Type 2 DM in Outpatients at the Internal Medicine Polyclinic of BLU Prof. Dr. RD Kandou General Hospital Manado. *J Kesehat Manad Univ Sam Ratulangi*. 2014;
20. Purba CI. Patient Experience of Non-Compliance with Diabetes Mellitus Management (Phenogenetic Study in the Context of Nursing Care at Dr. Cipto Mangunkusumo National General Hospital, Jakarta). University of Indonesia. Jakarta; 2008.
21. Restuning D. Education in Improving the Effectiveness of Compliance with Diet Settings in Type 2 Diabetes Mellitus. *Med Pearls [Internet]*. 2015;15(1):37–41. Available from: <https://journal.umy.ac.id/index.php/mm/article/view/2492/2556>
22. De la Rosa, LA, Moreno-Escamilla, J.O., Rodrigo-García, J., AlvarezParrilla E. *Phenolic compounds, Postharvest Physiology and Biochemistry of Fruits and Vegetables*. Elsevier Inc. 2019;
23. Febriana D. The Relationship Between Long-Term Suffering and Self-Management in Type 2 Diabetes Patients in the Patrang Community Health Center Work Area [Internet]. Dr. Soebandi University; 2022. Available from: <http://repository.stikesdrsoebandi.ac.id/id/eprint/460>
24. PERKENI. Guidelines and Prevention of Type 2 Diabetes Mellitus in Indonesia [Internet]. PERKENI; 2022. Available from: www.Ginasthma.Org
25. Nurhayati, C. and Sari NA. The Relationship between the Level of Knowledge of Hypoglycemia and the Ability to Detect Hypoglycemia in Type 2 DM Patients. 2020;2(1).
26. Saini S et al. The Effect of Providing Education About Diabetes Management on the Level of Knowledge and Attitude of Type 2 Diabetes Mellitus Patients. *Nursing Media, Makassar Health Polytechnic*. 2020;11(2):95.
27. Redho, A. and Septinawati Y. The Effect of Health Education on Knowledge, Attitudes, and Preventive Actions for Diabetic Foot Ulcers in the Working Area of the Air Molek Community Health Center Uptd. *Al-Asalmiya Nurs J Nursing Science (Journal Nurs Sci)*. 2023;12(2):203–215.
28. Kurniawati, T., Huriah, T., & Primanda Y. The Effect of Diabetes Self Management Education (DSME) on Self Management in Diabetes Mellitus Patients. *J Ilm Kesehat*. 2021;12(2):588–94.
29. Robert M Anderson 1 MMF. Patient empowerment: reflections on the challenge of fostering the adoption of a new paradigm. *Natl Institutes Heal [Internet]*. 2005;57(2):153–7. Available from: <https://pubmed.ncbi.nlm.nih.gov/15911187/>
30. Basri M, Rahmatiah S, Andayani DS, KB, Dilla R. Motivation and Self-Efficacy in Self-Care Management in Type 2 Diabetes Mellitus Patients. *J Ilm Kesehat Sandi Husada*. 2021;10(2):695–703.
31. Dewi N. Diabetes Self-Management Education (DSME) for Enhancing Knowledge and Self-Care Behaviors in Type 2 Diabetes Mellitus Patients: A Systematic Review. 2025;(18).
32. Wahyuni S, Pujiastutik YE, Prasetyowati CD. Self-Care Management Education to Improve Knowledge and Attitudes of People with Diabetes Mellitus. *J Community Engagement Empower [Internet]*. 2025;7(1):1–5. Available from: <http://ojs.iik.ac.id/index.php/JCEE>
33. Nurjannah A. The Influence of Diabetes Self-Management Education and Support. *E-Journal Pustaka Kesehat*. 2022;6(1):133–140.
34. D S. *Audio Visual Media*. Jakarta: EGC; 2008.
35. Astuti RK. The Influence of Family-Based Diabetes Self-Management Education (DSME) on

Increasing Knowledge and Attitudes in Blood Glucose Control. Indonesian Health Promotion Publ Media. 2024;7(2):408–13.

36. Salahudin R, Amelia A. The relationship between self-care management and quality of life of diabetes mellitus sufferers in Cisantana Village, Cigugur District, Kuningan Regency. J Nurs Pract Educ. 2024;4(2):375–82.