

THE INFLUENCE OF SELF MANAGEMENT EDUCATION THROUGH BOOKLET MEDIA ON THE SELF-CARE COMMITMENT OF TYPE II DIABETES MELLITUS PATIENTS

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ABSTRACT

Diabetes mellitus is the inability of the pancreas to produce enough insulin. The prevalence of DM in Lampung Province is 1.63 per 100,000 population with the highest incidence of diabetes mellitus, Mesuji Regency with a prevalence of 0.96 per 100,000 population. Proper self- management of diabetes mellitus can alleviate some of the physical and mental consequences of this disease. The purpose of this study was to determine the effect of self-management education through booklet media on the commitment to self-care of type II diabetes mellitus sufferers. Quantitative research type, pre-experimental design, one-group pretest-posttest approach. The population of patients suffering from type II diabetes mellitus was 134 patients, with a sample of 57 respondents using the purposive sampling technique. The study was conducted at the Outpatient Clinic of the Mesuji Regional General Hospital, Mesuji Regency in May-August. Univariate and bivariate data analysis (paired sample t-test). The results showed that the average self-care commitment of patients with type II diabetes mellitus before self management education through booklet media was 61.5 and after self management education through booklet media was 81.9. The results of the analysis test using paired sample t-test with a significance level of $\alpha = 0.05$, found that the p-value = 0.000. Conclusion: There is an effect of self management education through booklet media on self- care commitment of patients with type II diabetes mellitus. Suggestions for health workers to be able to provide counseling activities for patients with diabetes mellitus using booklets which are one of the models in the standard of providing education.

Keywords: booklet; diabetes mellitus patients

INTRODUCTION

High blood glucose levels are a symptom of diabetes mellitus (DM), a disease in which the pancreas does not produce enough insulin or the body does not use insulin efficiently. Hyperglycemia, a symptom of uncontrolled diabetes, can harm vital body systems such as nerves and blood vessels if left untreated (WHO, 2020). According to the World Health Organization (WHO) reports that diabetes is the leading cause of blindness, heart disease, stroke, kidney failure and lower limb amputation. With 415 million cases in 2015, the number of adults diagnosed with diabetes is expected to increase to 642 million by 2040. North America has about 44.3 million people, the Western Pacific about 153.2 million, and Asia about 96 million people with diabetes mellitus. With an annual mortality rate of 3.7 million. Diabetes is the seventh leading cause of death in the United States. Evidence from a statistical sample of 79,535 deaths lists diabetes as a cause of death (WHO, 2021).

Among the top three causes of death in Indonesia is diabetes mellitus, according to a survey conducted in 2018 and reported by the Ministry of Health of the Republic of Indonesia. The Ministry of Health (2018) estimates that 7.6 million Indonesians currently have diabetes, with a risk of more than 12.6 million. Based on the 2018 Riskesdas data, the prevalence of diabetes mellitus was 1.5% in all age groups. East Nusa Tenggara and Lampung provinces had the lowest

incidence rates, at 0.6% and 1% respectively. The highest incidence rate was in DKI Jakarta at 2.6% (Riskesdas, 2018). Bandar Lampung City with a prevalence of 1.63 per 100,000 population has the highest incidence of diabetes mellitus in Lampung Province, while Pesisir Barat Regency with a prevalence of 0.54 per 100,000 population, and Mesuji Regency with a prevalence of 0.96 per 100,000 population (Riskesdas Lampung, 2018). Diabetes is the most common disease in Indonesia, affecting 54% of people with the disease. These neuropathic complications increase the risk of poor health and premature death. Millions of people suffer from long-term and acute complications that can kill them (Massi, 2018). Treatment for diabetes mellitus is among the easiest. Consistent physical activity, a low- sugar diet, oral medications, and insulin injections are just some of them. Blood sugar levels can be managed if all these strategies are implemented (Putra and Berawi, 2015).

Proper management of diabetes mellitus can alleviate some of the physical and mental consequences of the disease. Symptoms of diabetes can be reduced and long-term complications avoided if blood glucose levels are kept within a healthy range . Lifestyle modifications, including a healthy diet and regular exercise, are the cornerstones of diabetes management. Self-management refers to a person's capacity to take charge of their health and reduce the effects of a chronic disease. When patients are able to take charge of their own healthcare while still receiving assistance from their healthcare team, this is known as self- management (Elkjaer in Adiatma, 2020). Preventing acute complications and reducing the risk of long-term complications requires patient self-management education and support (Saldy & Andi, 2019). Adiatma (2020) outlines several components of self-management, including paying attention to diet, blood sugar levels, physical activity, medication compliance, and feet. Cumayunaro's research (2019) found that patients with type II diabetes mellitus who are not good at self-care tend to be less compliant with their diet ($P = 0.038$). According to research conducted by Nurjanah, Diany, and Rizany (2018), type II diabetes mellitus patients who lack self-care have higher average blood glucose levels ($P = 0.03$). Ayu (2017) also found that people with diabetes mellitus who did not take care of their feet were significantly ($P 0.0001$) at higher risk of foot injury. Statistical analysis conducted by Adiatma (2020) resulted in a p value = 0.001. Diabetes mellitus patients in the working area of the Palaran Samarinda Health

Center found a positive correlation between self-management and the perception of their own role in care.

Self-management has a significant impact on the course and outcome of disease management (Sari, 2020). People with type 2 DM often struggle to maintain normal blood sugar levels and implement the 5 pillars of DM management. This requires a system that can modify their actions to better control their DM. Intervention in education is one example that can be done well. Diabetic patients who receive educational interventions are better able to avoid complications. To improve patients' understanding of treatment information, additional media should be used along with the intervention (Irawati Apoina & Sri, 2019). People with type II diabetes mellitus can benefit from the guidance and knowledge provided by diabetes booklets as part of diabetes self-management education . The many benefits of booklets include a more thorough presentation, the ability to be stored for a long time, easy to carry, and the provision of detailed information content that may not be obtained through oral delivery (Sari, 2020). Umaroh (2018) found that providing media to patients with type II diabetes mellitus in the form of a calendar as part of a diabetes self-management education intervention improved their foot care compliance with a p value of 0.000.

The results of a pre-survey conducted on 10 (100%) people at the Outpatient Clinic of the Mesuji Regional General Hospital showed that 3 (30%) people said they were aware of what they put into their bodies and had reduced sugary foods such as wet cakes and store-bought snacks. A total of 7 (70%) respondents still lack discipline related to food consumed, because sometimes they still like to consume the same food as family food without any restrictions, for example, still using sugar that is not specifically for diabetics, still consuming wet cakes that are served. As many as 60% of respondents said that sports participation was rarely done due to lack of motivation to exercise and because it would make them too tired to concentrate on their work, while as many as 40% still did light exercise such as walking or jogging. Respondents also mentioned seeking medical treatment (hospital), when they felt symptoms such as fatigue, weakness, thirst, frequent urination, numbness in the legs, bitter mouth, no taste in food, itching, and sleepiness.

Of the 10 respondents conducted an initial survey on June 16-25, 2024, as many as 40% of patients with type II diabetes mellitus in the Working Area of the Outpatient Clinic of the Mesuji Regional General Hospital were not compliant with proper self-care, such as the practice of foot care, the respondents only washed their feet, but still maintained that no wounds occurred in the foot area such as using sandals or shoes when leaving the house. In addition, overall respondents said they had never received counseling by being given counseling media such as booklets. According to interviews with nurses in the hospital as many as 1 person. Health education about type II diabetes mellitus has never been evaluated in the Outpatient Clinic of Mesuji Regional General Hospital, and many people do not know what happens when the disease develops into severe due to lack of knowledge. Based on these problems, the researcher conducted a study on "The Effect of Self Management Education Through Booklet Media on Self-Care Commitment for Type II Diabetes Mellitus Patients at the Outpatient Clinic of the Mesuji Regional General Hospital, Mesuji Regency in 2024".

METHOD

This type of research uses desalin pre-experiment based on the formalt one-group pretest- posttest . 134 populations included in this research are all suffering from type II diabetes mellitus in the area served by the Outpatient Clinic of Mesuji Regional General Hospital, Mesuji Regency in 2024, the sample to be taken is 57 people. By means of Purposive salmpling.

RESULT AND DISCUSSION

Univariate Analysis Table 1 1.

Average self-care commitment of patients with type II diabetes mellitus before self management education through booklet media

Commitment Self-care	Mean	SD	Min	Max	N
Before	61.5	5.5	51	72	57

The above table shows that before applying self-malngement education in the form of a booklet, type II diabetes mellitus sufferers had a self-malngement commitment rate of 61.5 with a stalndalr devialsi of 5.5 with a range of 51-72.

Table 2.

Average self-care commitment of patients with type II diabetes mellitus after self management education through booklet media

Commitment Self-care	Mean	SD	Min	Max	N
After	81.9	6.9	64	99	57

Based on the dialtals, it was found that the raltal-raltal commitment of type II diabetes mellitus sufferers after self-malngement education through medial booklet was 81.9, with a stalndalr devialtion value of 6.9, a minimum value of 64, and a minimum value of 99.

Table 3.
Data Normality Test

Variables	Media booklet	Kolmogorov- <i>nirnov</i>	Ket
Self-commitment	Before	0.166	Normall
	After	0.200	Normall

Based on the above table, the variables of the intervention group were tested for normality by using the Kolmogorov-Smirnov test. The results showed a significant value > 0.05 , which indicates that the variables are normal. Therefore, the next test is the Palired Salmples T-test.

Bivariate Analysis

The effect of self management education through booklet media on self-care commitment of patients with type II diabetes mellitus

Variabel	Media booklet	Mean	Beda mean	P-Value
Self-commitment	Before	61.5	20.4	0.0000
	After	81.9		

Based on the results of the paired salmples t-test, the p-value = 0.000 (p-value $< \alpha = 0.05$) means that there is an effect of self-malngement education through medial booklets on the commitment to self-malngement of type II diabetes mellitus sufferers.

Univariate Analysis

Average self-care commitment of patients with type II diabetes mellitus before self management education through booklet media

Based on the research results, it was found that the self-malignment commitment rate of type II diabetes mellitus sufferers before self-malignment education through medial booklet was 61.5, with a stalndalr devialtion score of 5.5, a minimum score of 51, and a maximum score of 72. Metabolism disorders associated with diabetes mellitus (DM) are characterized by abnormalities in lipid and protein metabolism and increased glucosal caloric intake (chronic hyperglycemia). Inadequate insulin secretion or activation, or both, and inadequate glucosal transport function, contribute to hyperglycemia. The body's inability to react back to insulin, the hormone that regulates the sugar calorie in the body, causes the development of diabetes mellitus (DM) (Susilo, 2021). (Etlidalwalti, 2024) For the intervention group, the raltal-raltal score of self-calre malnagement was ± 28.5 . Before the intervention of self-malnnutrition education using smalrt book, the intervention group's self-malnnutrition commitment score was 42.60, according to Salri (2021). The pre-test results of Sitalnggalng's research (2023) showed that the intervention group had the same number of respondents (22.73%) with the reverse self-caliber as the control group.

Based on the results of the questionnaire, it was found that most of the people with diabetes did not have their nails checked so there is a high risk for people with diabetes to have an increase in their blood sugar levels in the future, highlighting the importance of cutting nails properly to avoid cederal; on the other hand, diabetic patients still lack the knowledge and practice needed in this field. A person's actions in repairing the nails should be calibrated to avoid the alkaline balm of nail clippers. The lack of calculating the pain of alkibalt cederal kalki is caused by damage to the paldal salralf in the dalralh vessels in the results of this questionnaire dalpalt terlihalt balhwal type II DM sufferers need education from health workers so that self-malnagement has increased. Based on the results of the questionnaire, it is known that respondents have not planned to consume a diet / diet this is due to the limitations of the economy so that to regulate the malkaln halrialn polal depends on the dalnal yalng available in the halri. Likewise, to follow the healthy malkaln policy, there are still many respondents who have not followed the healthy malkaln policy based on the results of the observation, it can be found that the respondents consumed malkalnaln which was prepared by the kelualrgal with the menu Based on the results of the research, the physical laltihaln points were always illegal, raltal-raltal respondents still have not done ringalgal activities such as jogging, jallaln cepalt, berenalng hall this is because the respondents have not been able to divide the walk with the work done, Based on the research results, it was found that the respondents were more busy working so that after working the body was already tired and more time was used to walk for rest.

Based on the analysis of the behavior of DM sufferers in terms of self-regulation, there are still some respondents who have not done it properly. It is also important to provide education and informational activities related to the importance of self-malnutrition, such as maintaining a healthy diet, exercising olalhralgai, and exercising self-malnutrition, Consumption of obalt in a regulated manner and conducting regular monitoring to prevent the occurrence of complications, namely by conducting health counseling about preventing complications of DM disease. According to the researcher, the respondents still showed a lack of dedication to the medication in the oral routine due to the lack of motivation to follow the medication and the inconsistent adherence to the medication in the oral routine, which was caused by the lack of motivation to return to the oral health care system. According to the research, the two most important factors in regulating the calorie intake are physical activity (olalhralgai) and medication adherence (phalrmalkology).

Average self-care commitment of patients with type II diabetes mellitus after self management education through booklet media

Based on the results of this study, it was found that the self-reported commitment rate of type II diabetes mellitus sufferers after self-malnutrition education through the medial booklet was 81.9, with a stalndalr devialtion score of 6.9, a minimum score of 64, and a maximum score of 99. Proper management of diabetes mellitus can alleviate some of the physical and mental consequences of this disease. The symptoms of diabetes mellitus are minimized and the complications of diabetes mellitus can be avoided if glucosal caloric intake is maintained at a healthy level. Life style modifications, including healthy eating patterns in a regulated environment, can lead to malnutrition in diabetes management. Self-malnutrition refers to a person's ability to take charge of their own health and minimize the effects of chronic disease. When a patient takes all of their own health care tools while still receiving medication from their health care team, this is known as self-management (Elkjaler in ALdialtmal, 2020).

In line with Salri's research (2021), the self-management commitment score after the diabetes self-management education intervention through a smart book was 56.07. Researcher (Etlidawalti, 2024) self-care management for rational-rational intervention group after the intervention was $\pm 28,5$ and $\pm 38,6$. Sitalnggalng's research (2023) after initializing the post test, an increase in the number of respondents with a reverse self-caliber of 21 respondents (95.45%) was obtained in the intervention group.

based on the researcher's assumption that the respondents in the study directly analyzed the galmbalr in the writing that was explained. by the medial.

Based on the results of the research, it was found that there was an increase in the self-management value of the respondents' paldal, in this hall it was found that several items of statements related to self-malgement had a significant increase, such as the item of the self-malngment polal statement which had an increase in self-malngment, respondents have realized not to consume high-sugar foods such as cakes, biscuits or other snacks, and respondents have realized that they want to be active so that they can carry out illegal activities such as jogging around the home of the salmal hall, due to the inability of the dalnal to provide a balanced menu in the daily life. The self-malnutrition component of the booklet included informations about general diabetes mellitus, calcal policy management, physical exercise (and other physical activities that people with diabetes can do), calcium devices, hypoglycemic medication, and the use of sugar in the diet. In addition, respondents were given a booklet each day to inform them about the management of their diabetes mellitus. Based on the instructions given in the booklet, each respondent should read and use the booklet at least once a day to increase their knowledge about self-malnutrition. This hall, in turn, should lead to behavioral changes that improve their health.

Bivariate Analysis

The effect of self management education through booklet media on self-care commitment of patients with type II diabetes mellitus

Based on the results of the paired sample t-test, the p-value = 0.000 (p-value < $\alpha = 0.05$) means that there is a significant effect of self-management education through a medial booklet on the commitment to self-management of type II diabetes mellitus sufferers. One of the definitions of commitment put forward by Glickmaln (2007) is that it refers to the willingness to take action in order to achieve the desired goal. When a person performs the necessary work to achieve the goal that has been set, we know that they are committed. The health education that helps people with diabetes mellitus gain allalignment for self-repair is what Funnell et al. (2011) call DSME. (2011) call DSME. Counseling (both direct and non-direct) in the mental health work of clients with diabetes in their lives is an integral part of the Diabetes Self-Management Education (DSME) model (Umalroh, 2018). Diabetic self-management includes halls such as dietary habits (diet), regular exercise, monitoring caloric intake, taking prescribed medications, and taking calorie countermeasures (Eridal Silallalhi, 2021) Type II diabetes mellitus sufferers get malnfalalt from the guidance and knowledge provided by the diabetes booklet as well as from the diabetes self-management education. The benefits of booklets include a more comprehensive presentation, the ability to be stored in a portable, easy-to-dialogue format, and the provision of detailed informal content that may not be available through a traditional booklet (Salri, 2020).

(Etlidawalti, 2024) Statistical analysis, using independent t-test, showed a significant difference in the treatment of patients with diabetes mellitus ($p=0.00<0.05$). Study (Sitalnggalng, 2023) With

a p value of 0.000 at a significance level of $\alpha = 0.05$, the results showed that patients with type 2 diabetes mellitus in Kalralng ALsem Balralt Village could improve their self-care malnutrition and quality of life through the use of the SECALRIC Dialry booklet. According to Salri (2021), the paired t test results show that there is a significant effect of diabetes self-management education through smalrt book on the commitment of self-care malnutrition education for type II diabetes mellitus sufferers, with a p value of 0.000 which indicates a statistical significance of $p_{\text{dald}} = 0.05$. The assumptions made by the researchers indicate that the level of headache in diabetes mellitus influences the quality of life of patients; therefore, self-help booklets or selfhelp booklets for patients with type 2 diabetes mellitus can improve the quality of life of patients. Researchers believe that people with diabetes mellitus can improve their quality of life if they are provided with health education and a structured self help booklet. This can help them change their quality of life. Self-directed learning is a continuous process that requires offline learning. The results of this research give us confidence that the paldal galgalsaln balhwal malsyalralkalt in improving knowledge, ability, and health-related skills through health education.

Based on the results of the research, it was found that there was a change in the paldal diabetes self malnutrition education of the respondents, and there was an influence from the education provided by the researcher, The researcher believes that the education level of the participants in this research has a medium to high level of education (high school and junior high school), which is related to the effectiveness of the education provided, in addition to the instructor, materials, methods, and media used. Respondents with this level of education have a more open and structured worldview, which makes it easier for them to absorb counseling information, manage it, and then write it down. This is consistent with the theory that proper and consistent management of diabetes mellitus is required throughout a person's life. If lucky, a person with diabetes mellitus can keep the condition under control and live as normal a life as possible. Thus, the use of electronic smalrt book media led to an improvement in the self-management of DM patients before and after treatment in the intervention group. Due to the selection of appropriate methods, the respondents were able to learn informalities more effectively due to the involvement of the participants in the informalities, and the interest in the informalities increased, which ultimately led to the spread of knowledge about self-management. The penaltallalksalnalnnyal aldallalh is to reduce the occurrence of complications through practical peneralpaln in daily practice.

CONCLUSION

The 57 respondents were mostly aged 36-50 years, 84.2%, female gender 52.6%, junior high school education 42.1%, petalni occupation 50.9%, income < 2. 000,000,- (77.2%), diabetes mellitus > 3 years (50.9%), no complications (80.7%) and no smoking (59.6%). It was found that the raltal-raltal commitment of type II diabetes mellitus sufferers before self malnutrition education through medial booklet was 61.5. The number of self-reported commitment of type II diabetes mellitus sufferers after self-malnutrition education through medial booklet is 81.9. The effect of self-malnutrition education through medial booklet on self-malnutrition commitment of type II diabetes mellitus sufferers (p-value = 0.000).

REFERENCES

- Adiatma, S. N., & Asriyadi, F. (2020). Hubungan manajemen diri (Self Management) dengan peran diri pada pasien diabetes melitus di Wilayah Kerja Puskesmas Palaran Samarinda. *Borneo Studies and Research*, 1(2), 848-853.
- Ardiani, H. E., Permatasari, T. A. E., & Sugiatmi, S. (2021). Obesitas, pola diet, dan aktifitas fisik dalam penanganan diabetes melitus pada masa pandemi COVID-19. *Muhammadiyah Journal of Nutrition and Food Science (MJNF)*, 2(1), 1-12.
- Arikunto, S. (2017). *Prosedur penelitian suatu pendekatan praktik*. (Rineka Cipta (ed.); IV). Rineka cipta.
- Ayu, S. AL. (2017). Hubungan Perawatan Kaki Dengan Kejadian Luka Kaki Pada Penderita Diabetes Melitus Di RSUD Dr. H. Abdul Moeloek Propinsi Lampung Tahun 2015. *Holistik Jurna Kesehatan*, 11(2), 95-100.
- Azizah, N. (2020). Hubungan Indeks Massa Tubuh Dengan Kadar Gula Darah Puasa Pasien Rawat Jalan Diabetes Melitus Tipe 2 Di RSUD Dr. Wahidin Sudirohusodo Makassar Periode Januari desember 2018 (Doctora dissertation, Universitas Hasanudin).
- Cumayunaro, A. (2019). Hubungan Manajemen Diri Dengan Kepatuhan Diet Pada Penderita Diabetes Melitus Di Kelurahan Parak Karakah Wilayah Kerja Puskesmas Andalas Padang Tahun 2018. *Menara Ilmu*, 13(4).
- Etliawati, E., Romdhoni, M. F., Yulistika, D., & Linggardini, K. (2024). Self-Management Education pada Pasien Diabetes Melitus. *Faletehan Health Journal*, 11(01), 45-50.
- Febrianty, E. (2023). Pengaruh Diabetes Self Management Education (DSME) Melalui Kalender Terhadap Kepatuhan Manajemen Perawatan Diri Pasien Diabetes Melitus Tipe 2 di Puskesmas Tamalanreal Jaya= Effect of Diabetes Self Management Education (DSME) through Calendar on Self-Care Management Compliance of Type 2 Diabetes Melitus Patients in Tamalanreal Jaya Public Health (Doctora dissertation, Universitas Hasanudin).
- Fitrika, Y., Syahputra, K. Y., & Rizky, D. G. (2018). Pengaruh Diabetes Self Management Education (DSME) Terhadap Kejadian Ulkus Diabetik Pada Pasien Rawat Jalan DM Tipe 2 di RSUD Meuraxa Banda Aceh. *Jurnal Aceh Medika*, 2(1), 25-30.
- Hastono. (2016). *Analisa Data Pada Bidang Kesehatan* (Raja Grafindo Persada (ed.)). Raja Grafindo Persada.
- Ibrahim. (2018). Pengaruh Diet Terhadap Kadar Gula Darah Pasien Diabetes Melitus Tipe II. *Jurnal Kesehatan Salintika Meditory*
- Indonesia, P. E. (2021). *Pedoman pengelolaan dan pencegahan diabetes melitus tipe 2 dewasa di Indonesia 2019*. PB PERKENI. Jakarta: PB PERKENI.
- Irawati, H., Kartini, A., & Nugraheni, S. A. (2019). Pengaruh booklet terhadap pengetahuan dan sikap kesehatan reproduksi calon pengantin terkait pencegahan risiko kehamilan di Kabupaten Pemalang. *Jurnal Manajemen Kesehatan Indonesia*, 7(2), 124-131.

- Istiyawanti, H., Udiyono, A., Ginandjar, P., & Adi, M. S. (2019). Gambaran Perilaku Self Care Management Pada Penderita Diabetes Melitus Tipe 2 (Studi di Wilayah Kerja Puskesmas Rowosari Kota Semarang Tahun 2018). *Jurnal kesehatan masyarakat*, 7(1), 155-167.
- Kementrian Kesehatan RI (2018). *Data Riset kesehatan dasar Indonesia 2018*, Jakarta
- Kurniasari, S., Sriningsih, N., Antoro, B., & Efrifahriza, H. (2023). Pengaruh Hidroterapi Terhadap Penurunan Gula Darah Sewaktu (GDS) pada Pasien Diabetes Mellitus Tipe II. *An Idea Nursing Journal*, 2(01), 60-68.
- Mandasari, D. P. F., Sustini, F., & Krisnana, I. (2017). Pelaksanaan Diabetes Self-Management Education Berbasis Health Promotion Model Terhadap Perilaku Kepatuhan Klien Diabetes Melitus (DM) Tipe 2. *Jurnal Penelitian Kesehatan Suara Forikes*, 8.
- Notoatmodjo. (2018). *Metodologi Penelitian Kesehatan* (Rineka Cipta (ed.); 2 ed.). Rineka cipta.
- Nurjannah, AL. (2022). *Pengaruh Diabetes Self Management Education (Dsme) Melalui Whatsapp Di Masal Pandemi Covid-19 Terhadap Self Care Pasien DM Tipe 2 Di Puskesmas Seyegan* (Doctoral dissertation, Poltekkes Kemenkes Yogyakarta).
- Padila, P. (2012). *Buku Ajar Keperawatan Keluarga*. Yogyakarta: Nuha Medika.
- PERKENI. (2020). *Pedoman Pengelolaan dan Pencegahan Diabetes Melitus Tipe 2 Dewasa di Indonesia 2015*. (2015). PB PERKENI. Global Initiative for Asthma, 46. www.ginasthma.org.
- Price Syvia, AL., & Wilson Lorraine, M. (2016). *Patofisiologi: Konsep Klinis Proses-Proses Penyakit*. Jakarta: Egc.
- Sari, N., Fitri, E. Y., & Wahyuni, D. (2021, November). Pengaruh Diabetes Self Management Education Melalui Media Buku Pintar Terhadap Komitmen Perawatan Diri Penderita Diabetes Melitus Tipe II. In *Seminar Nasional Keperawatan “Strategi Optimalisasi Status Kesehatan Mental Masyarakat Dengan Perawatan Paliatif Di Era Pandemi Covid-19” Tahun*.
- Sari, N., Fitri, E. Y., & Wahyuni, D. (2021, November). Pengaruh Diabetes Self Management Education Melalui Media Buku Pintar Terhadap Komitmen Perawatan Diri Penderita Diabetes Melitus Tipe II. In *Proceeding Seminar Nasional Keperawatan* (Vol. 7, No. 1, pp. 124-132).
- Sepdianto, T. C. (2019). Pelaksanaan Self Monitoring of Blood Glucose pada Pasien DM Tipe 2 di Kota Blitar. *Jurnal Keperawatan Malang*, 4(1), 49- 56.
- Silalahi, L. E., Prabawati, D., & Hastono, S. P. (2021). Efektivitas Edukasi Self- Care Terhadap Perilaku Manajemen Diri pada Pasien Diabetes Melitus di Wilayah Puskesmas Sukapura Jakarta. *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*, 4(1), 15-22.
- Sitanggang, B. Y. E., Sari, A., & Syafei, A. (2023). Efektivitas SECALRIC Diary dalam Meningkatkan Self-Care dan Kualitas Hidup Penderita Diabetes Melitus Tipe 2. *Jurnal Pengabdian Ilmu Kesehatan*, 3(2), 01-18.

- Sugiyono. (2018). *Metode Penelitian Kuantitatif, Kualitatif dan R&D* (PT Alfabet (ed.)). PT Alfabet.
- Sunardo, T. A. (2015). *Pengembangan Buku Pintar Elektronik (BPE) Sebagai Media Pembelajaran Pada Siswa SD Kelas 4 Tema Selalu Berhemat Energi Kurikulum 2013*. Universitas Negeri Semarang.
- Susilo, Yekti dan Ari Wulandari. (2021). *Cara Jitu Mengatasi Kencing Manis*. Yogyakarta: Andi.
- Umaroh, L. (2018). *Pengaruh Diabetes Self Management Education (DSME) Melalui Media Kalender Terhadap Kepatuhan Perawatan Kaki Klien Diabetes Melitus Tipe 2 Di Balai Pengobatan Muhammadiyah Lamongan* (Doctoral dissertation, Universitas Airlangga).
- WHO. (2021). Diabetes. Dikses di https://www.who.int/health-topics/diabetes#tab=tab_1, pada tanggal 8 Agustus 2023.
- Widayati, D. (2020). Edukasi Managemen Diabetes Berbasis Kelompok Sebaya sebagai Upaya Meningkatkan Kepatuhan Diet dan Perawatan Mandiri Penderita Diabetes Melitus. *The Indonesian Journal of Health Science*, 12(2), 137-146.
- Widyanata, K. A. J. (2018). *Penerapan Kalender DM Berbasis Aplikasi Android Sebagai Media DSME (Diabetes Self Management Education) Terhadap Self Efficacy Dan Kadar HbA1c Pada Pasien Diabetes Melitus Tipe 2* (Doctoral dissertation, Universitas Airlangga)