http://ejournal.seaninstitute.or.id/index.php/healt
Jurnal Eduhealt,Volume14,No.04 2023
E-ISSN.2808-4608

Effect of Chronic Disease Management Program (Prolanis) on Blood Sugar Levels in Patients with Diabetes Mellitus

Eliza Silvi[1], Safrizal[2], Siti Maisyaroh Siregar[3], Sufyan Anwar[4]
Teuku Umar University, Meulaboh[1,2,3,4]

ARTICLE INFO

Keywords:
Prolanis, Blood Sugar, Diabetes Mellitus

ABSTRACT

Diabetes Mellitus (DM) is a chronic disease that has a serious impact on public health throughout the world. The Chronic Disease Management Program (Prolanis) is a program designed to provide a comprehensive approach to the management of chronic diseases, including Diabetes Mellitus. The purpose of this study was to evaluate the effect of the Prolanis program on controlling blood sugar levels in people with Diabetes Mellitus. This study used an experimental method with a pre-test and post-test research design, in which the intervention group received the Prolanis program for a certain period, while the control group did not receive additional intervention. Data was collected by examining blood sugar levels before and after the intervention period. The research sample consisted of type 2 Diabetes Mellitus sufferers who had been enrolled in the Prolanis program. The results of this study indicate that the Prolanis program has a positive effect on controlling blood sugar levels in people with Diabetes Mellitus. The intervention group experienced a significant decrease in average blood sugar levels after participating in the Prolanis program. On the other hand, the control group that did not receive the intervention showed insignificant changes in blood sugar levels. These findings support the effectiveness of the Prolanis program in helping control blood sugar levels in people with Diabetes Mellitus. A comprehensive approach that includes education about diet, physical activity.

Email :
[1]elizaa4586@gmail.com
[2]safrizal@utu.ac.id
[3]sitimaisyaroh@utu.ac.id
[4]sufyan.anwar@utu.ac.id

1. INTRODUCTION

Diabetes Mellitus is a dangerous disease, often referred to as diabetes (Kristianto, 2021). This disease does not only affect the elderly, but also some people with a young age range. This disease also causes many deaths besides heart disease. Diabetes is a major health problem with a high level of risk. People with diabetes mellitus will suffer other complications such as retinal damage, chronic kidney failure and so on. Increased blood sugar levels in the body cause diabetes. Blood glucose levels are declared under control when they are in the range of 70-140 mg%.

Patients who have suffered from Diabetes Mellitus must be examined once a month (Lestari, 2021). This is done to maintain blood sugar stability in the patient's body. Low blood sugar levels can cause hypoglycemia while high sugar levels cause various diseases including diabetes mellitus, acromegaly and others. Poor diet can trigger diabetes or malnutrition, so diet and intake of nutrients that enter the body must be maintained properly.

Diabetes mellitus is a disease that can affect patients for a long time to a lifetime. Disturbed metabolism in the pancreas, characterized by increased blood sugar causes hyperglycemia (Fatmawati, 2017). This is caused by the amount of insulin from the pancreas that decreases from the amount needed by the body. So that fast and precise handling is needed to minimize the complex risks that will occur if it is too late to handle it. Indonesia is in fourth place as the most people with diabetes in the world and is expected to increase in the next 5 years by 2-3 times. This is of course related to people's lifestyles, where fast food is now easier to find and has become a daily habit.

There are 347 million people in the world have diabetes. In 2004 an estimated 3.4 million people died from high fasting blood sugar levels. In low- and moderate-income countries, the mortality rate is 80% due to DM. Indonesia is included in the 10 largest countries with Diabetes Mellitus in the world. To be precise, Indonesia's position is at number seven with a total of 8.5 million sufferers. The prevalence of diabetes is estimated to increase with increasing age of the population to 19.9% or 111.2 million people aged 65-79 years. The predicted number will continue to increase to reach 578 million in 2030 and 700 million in 2045.

Diabetes mellitus itself has 2 types or types, namely diabetes mellitus type 1 and 2. DM type 1 is the result of an autoimmune reaction to proteins in the pancreas. Type 2 diabetes mellitus is a genetic disease that can be passed from generation to generation in a family chain, this type is closely related to disorders of insulin secretion, insulin resistance and family factors. Obesity (overweight), overeating, nutritional deficiencies, stress and aging are some of the indicators that cause type 2 DM. The International Diabetes Federation states that 1 in 12 people do not realize that they have DM and only realize it when their body condition has experienced complications and this for a long time (Ekasari, 2022).

In this case the government experienced difficulties in terms of handling. Because of this, people who still do not live a healthy lifestyle are prone to diabetes mellitus. The government has launched and socialized the prevention of diabetes mellitus, but most of these have not received a good response. Most new sufferers have their disease checked if the disease they experience tends to be severe.

Sugar levels in a person's body must meet the adequacy rate in order to remain balanced in carrying out the body's metabolic pathways. Nowadays, there are more and more things that cause high blood sugar levels that cause diabetes. Among them is an unhealthy lifestyle, consuming more ready-to-eat food than self-processed food. The impact of ready-to-eat food is not good for the health of the body because of its ingredients, how it is processed and so on. Lack of physical activity, lack of exercise and longer intensity with cellphones causes a lack of physical activity that can improve blood flow and metabolism in the body. The burden of thoughts that accumulate and cause stress can also be a trigger for the onset of DM. This disease is also suffered by individuals with increasing age which causes a decrease in the function of organs in the body. Some of these things should be of particular concern as a preventive measure for diabetes mellitus.

The chronic disease management program (prolanis) is a service system that serves health financing activities (Kristianto, 2021). This service involves patients and BPJS Health to jointly take a proactive health approach in order to achieve optimal

quality of life. Through this Prolanis service, patients can register at the puskesmas or primary care doctor. The things that are done in this program are medical consultations, education, SMS gateway reminders and home visits. With this program, it is hoped that people with diabetes mellitus will pay more attention to things that need to be avoided and also what needs to be done to cure their disease (Syahid, 2021). This program is a form of support for sufferers to remain enthusiastic in undergoing healing therapy. The background of this research is to answer whether there is an influence of chronic disease management programs on blood sugar levels in people with diabetes mellitus. So, it is hoped that several hospitals and health institutions will implement this program as an effort to minimize deaths caused by diabetes mellitus (Primahuda, 2015).

2. METHODS

Literature study is used by researchers who are taken by collecting several references then analyzed and conclusions drawn. The results of a compilation of analyzes from previous references are used to conclude how chronic disease management programs affect blood sugar levels in people with diabetes mellitus.

Descriptive analysis was carried out to see the patient's demographics. Patient demographic data from this study were carried out in a descriptive observational manner. Data was taken retrospectively by taking data from patients who have suffered from Diabetes Mellitus.

The research steps in this literature study are selecting themes, exploring information related to this research, determining research objectives, collecting data sources, presenting data and compiling reports. Technical data analysis was carried out using the content analysis method of the references used.

In this research, research time is needed which is used to conduct research in the field, collect research data, then perform data processing and then conduct an analysis of research data. The deadline for writing this article was carried out after the conclusions in the research were carried out and this article was really considered good for publication.

3. RESULTS AND DISCUSSION

In this study found results using a search of 10 articles with a total of 9 articles discussing diabetes while totaling 6 articles discussing prolanis. In accordance with the research conducted regarding this discussion, there were 3,740 articles, but those that were relevant in this study totaled 10 articles. Vulnerable publication of journals or articles that are used as relevant research, which ranges from 2016 to 2021.

Table 1. Characteristics of the Articles Analyzed

Name	Year	Research Title	Research purposes	Method	Findings	Implications
Zaenab M. Syahid	2021	Factors Associated with Adherence to Treatment of Diabetes Mellitus	To determine the factors associated with adherence to treatment of diabetes mellitus	This study uses an electronic database	Factors related to adherence to diabetes mellitus treatment include age, knowledge,	Prolanis can be run well with reference to the compliance factor

					motivation, social, education, economy and access.	
Aditya Primahuda, Untung Sujianto	2016	The Relationship Between Adherence to Participating in the Bpjs Chronic Disease Management Program (Prolanis) and Blood Sugar Stability in Diabetes Mellitus Patients at the Babat Health Center, Laomgan Regency	To analyze prolanis compliance with blood sugar stability	The research design uses analytic correlation with cross sectional	There is a significant relationship between compliance with prolanis and blood sugar stability	Providing understanding to patients that prolanis affects the stability of blood sugar in DM patients
Franciscus Cahyo Kristianto, Devi Lina Sari, Aguslina Kirtishanti	2021	Effect of the Chronic Disease Control Program (PROLANIS) on Blood Sugar Levels in Type 2 Diabetes Mellitus Patients	To analyze the effect of prolanis on blood sugar levels in DM patients	Observation of two groups	There is a difference in blood sugar levels between patients who follow prolanis and those who do not	Prolanis is important in providing better treatment of DM patients
Elvera Juwita, Susilowati, Novie E Mauliku, Dyan K Nugrahaeni	2020	Factors Associated with Blood Sugar Levels in Patients with Type 2 Diabetes Mellitus at the Prolanis Health Center in Central Cimahi District	to determine the factors associated with blood sugar levels in type 2 DM patients who have controlled physical activity, carbohydrate intake, Body Mass Index, waist circumference, medication	The study design used in this study was a cross-sectional study. The dependent variable in this study was random blood sugar levels, while the independent variables in this study were physical activity,	There is a significant relationship between physical activity, carbohydrate intake, and adherence to taking medication with blood sugar levels. There is no significant relationship between body	The importance of maintaining medication adherence for people with diabetes and involving the participation of family members in reminding and monitoring the consumption of medication for people with diabetes.

			adherence during the Chronic Disease Management Program (PROLANIS)	carbohydrate intake, body mass index, waist circumference and medication adherence.	mass index and waist circumference with blood sugar levels. The most dominant factor related to blood sugar levels in this study was medication adherence.	
Ivonna Hasfika, Suci Erawati, Friska Ernita Sitorus	2020	Effect of Prolanis Exercise on Controlling Blood Glucose Levels and Blood Pressure in Type II Diabetes Mellitus and Hypertension Patients	The purpose of this study was to determine the effect of prolanis exercise on blood pressure and control of blood glucose levels in patients with Type II DM and Hypertension at the Aek Habil Sibolga Health Center.	The sampling technique used as respondents in this study was purposive sampling.	Exercising performed on DM sufferers can result in increased use of glucose by active muscles, so that exercise can directly lower blood glucose.	Prolanis programs such as exercise play an important role in lowering blood glucose.
Chilmia Nurul Fatiha, Farroh Bintang Sabiti	2021	Increasing Compliance with Taking Medication Through Pharmacist Counseling for Type 2 Diabetes Mellitus Patients at the Halmahera Health Center in Semarang City	To see the effect of pharmacist counseling on medication adherence using the Morisky, Green, and Levine Medication Adherence Questionnaire (MGL MAQ) and pill count instruments, in addition to seeing the effect on the patient's blood sugar levels.	Retrieval of data using nonprobability sampling technique, namely total sampling	One of the successes of treatment is influenced by patient medication adherence, in this study pharmacist counseling is expected to increase patient compliance. Information conveyed during pharmacist counseling includes drug names, drug indications, drug usage rules, side	Pharmacist counseling can significantly improve medication adherence in type 2 DM patients based on pill count and Medication Adherence Questionnaire

					effects, handling of problems faced by patients such as stress, and hypoglycemia.	
Nurul Patima, Dervish, Hasanuddin	2019	The Effect of Prolanis Gymnastics on Reducing Blood Sugar Levels in Type 2 Diabetes Mellitus Patients in the Elderly at the Binuang Health Center, Polman	Analyzing the effect of prolanis exercise on reducing blood sugar levels in diabetes mellitus patients in the elderly	The data taken in this research is primary data. Data collected by direct interviews by observing.	There is an effect of Prolanis gymnastics on reducing blood sugar levels in patients with diabetes mellitus in the elderly at the Binuang Health Center, Polman where in this case Prolanis exercises are able to provide changes in reducing blood sugar levels in type 2 diabetes mellitus patients.	Prolanis exercise has an effect on reducing blood sugar levels in patients with diabetes mellitus
Anjar Raraswati, Henhen Heryaman, Nanny NM Soetedjo	2018	The Role of the Prolanis Program in Reducing Fasting Blood Sugar Levels in Type 2 Diabetes Mellitus Patients at the Jatinangor District Health Center	The purpose of this study was to determine the role of the Prolanis program in reducing fasting blood sugar levels (GDP) in type 2 DM patients at the Jatinangor District Health Center, Sumedang.	The research conducted was a descriptive observational study with a cross-sectional study design.	The results of the study showed that most of the GDP of DMT2 patients was incomplete, home visits and SMS gate-away had not been carried out but other prolanis programs had been carried out.	Prolanis implementation and management must be improved
Vionita Gustianto, Djakfar Sadik, Yovita Tri Gusti	2020	The Relationship between Family Support in the Prolanis Program and Compliance	To examine the relationship between family support in the Prolanis program and adherence to	This type of research is a quantitative analytic design with a cross sectional approach.	Most patients with type 2 diabetes mellitus were non-adherent in taking medication, namely 26	There is a significant relationship between family support in the prolanis program and medication

		with Taking Medicine for Type 2 Diabetes Mellitus Patients at the Banjarsari Inpatient Health Center, Metro City in 2019	taking medication for Type 2 Diabetes Mellitus patients at the Banjarsari Inpatient Health Center, Metro City, 2019		patients (57.8%). Most of the type 2 diabetes mellitus patients had less family support in the prolanis program, namely 28 patients (62.2%).	adherence in Type 2 Diabetes Mellitus patients
Ibnu Syinna Alfiza, Isma Oktadiana	2020	The relationship between the level of adherence to treatment and the success of the Prolanis program in patients with type 2 diabetes mellitus at the Kroya I Public Health Center	This study aims to determine the level of adherence to treatment with the success of the prolanis program	This research is an analytic research with cross sectional design. The measuring tool used to measure the level of compliance is the MMAS-8. Data were analyzed using Pearson Chisquare.	The results of the study showed that high compliance was 29%, moderate compliance was 31.5% and low compliance was 39.5%. The patient's blood sugar levels were controlled by 52.6% and uncontrolled by 47.4%. Based on the results of the chi-square test, P value = 0.004 (P value <0.005) means that there is a relationship between the level of medication adherence and blood sugar levels.	The level of adherence to taking the drug affects blood glucose levels

Researchers discussed chronic disease management programs (prolanis) which are key in minimizing sugar levels in DM sufferers. DM is classified as a chronic disease, so efforts are needed to prevent further complications. Prevention that can be done to minimize this complication is to maintain blood glucose stability in diabetics. So, there is a prolanis system established by the government and in collaboration with the BPJS for people with diabetes mellitus to maintain the

stability of their blood sugar. The four pillars of the program implemented in Prolanis include education, Medical Nutrition Therapy (TNM), physical exercise, and pharmacological interventions. The level of adherence of DM sufferers in carrying out therapy will affect the success of this prolanis program. Compliance is an attitude shown by following the directions given by medical personnel relating to therapeutic measures. Prolanis (Chronic Disease Management Program) is a health service system and approach that is actively implemented in integrity involving participants, first level health facilities, and BPJS Health. Diseases listed on Prolanis include hypertension and diabetes mellitus (Pebriyani et al., 2022). The aim of this program is to reduce the risk of complications by utilizing affordable financing. Prolanis has 6 main activities consisting of health consultations, SMS services, debriefing on health, sports activities, visits to patient homes and health monitoring (Warti et al., 2022). Prolanis (Chronic Disease Management Program) is a health service system and approach that is actively implemented in integrity involving participants, first level health facilities, and BPJS Health. Diseases listed on Prolanis include hypertension and diabetes mellitus (Pebriyani et al., 2022). The aim of this program is to reduce the risk of complications by utilizing affordable financing. Prolanis has 6 main activities which consist of health consultations, SMS services, debriefing on health, sports activities, visits to patient homes and health monitoring (Warti et al., 2022). Prolanis (Chronic Disease Management Program) is a health service system and approach that is actively implemented in integrity involving participants, first level health facilities, and BPJS Health. Diseases listed on Prolanis include hypertension and diabetes mellitus (Pebriyani et al., 2022). The aim of this program is to reduce the risk of complications by utilizing affordable financing. Prolanis has 6 main activities which consist of health consultations, SMS services, debriefing on health, sports activities, visits to patient homes and health monitoring (Warti et al., 2022). Diseases listed on Prolanis include hypertension and diabetes mellitus (Pebriyani et al., 2022). The aim of this program is to reduce the risk of complications by utilizing affordable financing. Prolanis has 6 main activities which consist of health consultations, SMS services, debriefing on health, sports activities, visits to patient homes and health monitoring (Warti et al., 2022). Diseases listed on Prolanis include hypertension and diabetes mellitus (Pebriyani et al., 2022). The aim of this program is to reduce the risk of complications by utilizing affordable financing. Prolanis has 6 main activities consisting of health consultations, SMS services, debriefing on health, sports activities, visits to patient homes and health monitoring (Warti et al., 2022).

Diabetes Mellitus cannot be cured, but blood sugar levels can be controlled by early recognition and easier treatment to avoid complications. One of them is keeping blood sugar under control. Prolanis efforts are expected to reduce morbidity and mortality due to diabetes mellitus through promotive, preventive and curative. Therefore, the government through BPJS provides services to help maintain blood sugar stability by forming prolanis (Dewi & Muflihatin, 2019). Musfirah & Nurwahyuni's research (2018) concerning the correlation between the implementation of Prolanis and controlling blood sugar levels in type 2 DM sufferers obtained results showing that the maximum implementation of Prolanis was very effective for controlling blood sugar levels in type 2 DM sufferers.

Based on statistical tests on the research by Juwita et al. (2020), obtained a significant relationship between physical activity and blood sugar levels (p=0.019). The more physical activity, the lower the blood sugar level. Regular physical activity can delay or even prevent the development of type 2 diabetes, by directly increasing insulin sensitivity. When doing physical activity, insulin resistance decreases, while insulin sensitivity increases so that glucose uptake will be fulfilled into the cells. Control of blood glucose levels through the implementation of Prolanis gymnastics was also stated in the research by Hasfika et al. (2020). Exercise carried out in DM sufferers can result in increased use of glucose by active muscles, so that exercise can directly lower blood glucose. Similar results were also obtained in a study by Patima et al. (2019), which showed that there was a

significant effect between prolanis exercise on reducing blood sugar levels in people with diabetes mellitus. Drug non-adherence is one of the problems in the treatment of Diabetes Mellitus (DM). Compliance with taking medication for DM patients plays an important role in maintaining blood sugar levels within the normal range and preventing complications. Non-compliance with treatment will increase health problems and exacerbate diseases such as uncontrolled blood sugar levels (Fatiha & Sabiti, 2021). There are several factors that can influence changes in client behavior to become obedient or disobedient to the treatment program,

In a study conducted by Kristianto et al. (2021) showed that patients who have a high level of knowledge about the disease and its medication are more likely to show a better level of adherence to treatment compared to patients with lower knowledge. The level of knowledge affects patient adherence to Prolanis. The study also showed that the blood sugar levels of prolanis patients were different from those of non-prolanis. The risk of uncontrolled blood sugar in type 2 DM patients in prolanis participants was 0.53 times lower compared to non-prolanis patients. Primahuda & Sujianto (2016) in their research found that one of the factors influencing patient non-adherence to taking prolanis was a low level of education. This study shows that the lower the adherence of people with diabetes in managing DM prolanis, the more unstable blood sugar levels. In addition, Raraswati et al. (2018) revealed other factors that caused prolanis patients not to take part in activities that were already available, one of which was diabetes exercise due to the lack of awareness among prolanis participants of the importance of diabetes exercise, distance and the patient's socioeconomic status.

Alfiza & Oktadiana's study (2022) used the Pearson Chisquare statistical test showing a p value = 0.004 (P <0.05) so that it can be concluded that there is a relationship between the level of treatment adherence and the success of the prolanis program seen from the patient's controlled blood sugar levels. Uncontrolled blood glucose levels were found in research subjects with low levels of adherence. The level of treatment adherence in patients with prolanis diabetes will affect the clinical outcome, namely the patient's blood sugar level. The results of a survey of patients in the study stated that in addition to the drug therapy given, prolanis patients regularly exercise, always maintain a regular diet and rest because they have the motivation to recover so they can control their blood sugar levels. Besides that, Family support is also an important factor in implementing the Prolanis program for diabetes mellitus patients. Research by Gustianto et al. (2020) described that patients with type 2 diabetes mellitus who had less family support in the prolanis program were more disobedient compared to those who had good family support in the prolanis program. Researchers argue that family support in the prolanis program is the most important thing in medication adherence for people with type 2 diabetes mellitus. This is because family support can help to change the lifestyle of patients to be able to follow the prolanis program so as to prevent disease complications. Besides that, a harmonious and positive environment will also have a good impact on patients to be obedient in taking medication.

4. CONCLUSION

Based on a review of the entire article, it was concluded that there were significant differences in blood sugar levels in patients who took prolanis and non-prolanis. Non-prolanis patients have a risk of uncontrolled blood sugar. The level of patient compliance in taking medication is a factor supporting recovery in diabetes mellitus. In addition, prolanis activities in the form of gymnastics are proven to help control blood sugar in patients. Family is also one of the important factors needed to support the success of the Prolanis program.

REFERENCE

Alfiza, IS, & Oktadiana, I. (2022). Correlation between the level of adherence to treatment and the success of the Prolanis program in patients with type 2 diabetes mellitus at the Kroya I Public Health Center. Scientific Journal of Health, XVI(2), 14–19.

Dewi, FO, & Muflihatin, SK (2019). Correlation Between Compliance Level Following Prolanis Program and Blood Sugar Levels of Type 2 Diabetes Mellitus Patients at Ppk 1 Denkesyah Polyclinic. Borneo Student Research (BSR), 510–515. http://journals.umkt.ac.id/index.php/bsr/article/view/942

Ekasari & Dhanny, Devika Rhama. (2022). Factors Affecting Blood Glucose Levels in Type II Diabetes Mellitus Patients Age 46-65 Years In Wakatobi District. Journal of Nutrition College Vol 11 No (2).

Fatiha, CN, & Sabiti, FB (2021). Increasing Compliance with Taking Medication Through Pharmacist Counseling for Patients with Type 2 Diabetes Mellitus at the Halmahera Health Center, Semarang City. JPSCR: Journal of Pharmaceutical Science and Clinical Research. https://doi.org/10.20961/jpscr.v6i1.39297

Fatmawati, Atikah & Mustin. (2017). Analysis of the Dominant Factors Affecting Blood Sugar Levels in Patients with Type 2 Diabetes Mellitus. Journal of Nursing Aisyiyah Vol 4 No (1).

Gustianto, V., Sadik, D., & Gusti, YT (2020). The Relationship between Family Support in the Prolanis Program and Compliance with Taking Medication for Type 2 Diabetes Mellitus Patients at the Banjarsari Inpatient Health Center, Metro City, 2019. Indonesian Journal of Health Sciences (JIKMI), 1(1), 1–11.

Hasfika, I., Erawati, S., & Sitorus, FE (2020). Effect of Prolanis Exercise on Controlling Blood Glucose Levels and Blood Pressure in Type II Diabetes Mellitus and Hypertension Patients. BEST Journal (Biology Education, Science and Technology), 3(2), 184–190. https://doi.org/10.30743/best.v3i2.3226

Juwita, E., Susilowati, Mauliku, NE, & Nugrahaeni, DK (2020). Factors Associated with Blood Sugar Levels in Patients with Type 2 Diabetes Mellitus at the Prolanis Health Center in Central Cimahi District. Journal of Nutrition College, 9(4).

Kristianto, FC, Sari, DL, & Kirtishanti, A. (2021). The Effect of the Chronic Disease Management Program (PROLANIS) on Blood Sugar Levels in Type 2 Diabetes Mellitus Patients. CoMPHI Journal: Community Medicine and Public Health of Indonesia Journal, 2(1), 8–14. https://doi.org/10.37148/comphijournal.v2i1.36

Lestari, Zulkarnain & Suid, Siti Aisyah. (2021). Diabetes Mellitus: Review of Etiology, Pathophysiology, Symptoms, Causes, Methods of Examination, Methods of Treatment and Methods of Prevention. Gowa: Proceedings of Biology Achieving the Sustainable Development Goals with Biodiversity in Confronting Climate Change.

Patima, N., Darwis, D., & Hasanuddin, H. (2019). The Effect of Prolanis Exercise on Reducing Blood Sugar Levels in Type 2 Diabetes Mellitus Patients in the Elderly at the Binuang Health Center, Polman. Scientific Journal of Diagnostic Health, 14(4), 343–346.

Pebriyani, U., Utami, D., Agustina, R., & Mariyam, S. (2022). Analysis of the BPJS Kesehatan Chronic Disease Management Program (Prolanis) in Diabetes Mellitus Patients at the Uptd Puskesmas Kedaton Bandar Lampung 2021. Journal of Health Tambusai, 3(1), 301–311.

Primahuda, A., & Sujianto, U. (2016). Relationship Between Adherence to Participating in the Bpjs Chronic Disease Management Program (Prolanis) and Blood Sugar Stability in Patients with Diabetes Mellitus at the Babat Health Center, Laomgan Regency. Journal of the Nursing Department, 1–8.

Raraswati, A., Heryaman, H., & Soetedjo, NNM (2018). The Role of the Prolanis Program in Reducing Fasting Blood Sugar Levels in Type 2 Diabetes Mellitus Patients at the Jatinangor District Health Center. Journal of Health Systems, 4(2), 65–70.

Syahid, ZM (2021). Factors Associated with Adherence to Treatment of Diabetes Mellitus. Sandi Husada Scientific Journal of Health, 10(1), 147–155.

Warti, L., Laksmitawati, DR, & Sarnianto, P. (2022). The Effect of Application of PROLANIS in Type 2 Diabetes Mellitus Patients at the Bekasi City Health Center. Indonesian Pharmacy Journal, 19(2), 200–212.