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Analysis of Treatment Compliance Factors in Type 2 Diabetes Mellitus Patients

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Abstract

Non-compliance with taking medication in DM patients can reduce a person's quality of life and become the main cause of a number of microvascular problems. Therefore, complex problems related to diabetes are one of the global health problems that must be addressed immediately. The purpose of this study was to determine the factors related to medication compliance in type 2 DM patients. This study used a mixed method study approach or a combination of two types of research, namely quantitative research and qualitative research. The type of mixed method research design used is explanatory sequential design. The sampling method in this study was by proportional sampling. Furthermore, to determine the target sample, a simple random block sampling technique was used, namely 347 DM patients. The results of the analysis showed no significant relationship between gender p-value = 1,000 (> 0.05), education p-value = 0.232 (>, 0.05), knowledge p-value = 0.076 (> 0.05), dxuration of suffering p-value = 0.162 (> 0.05), belief p-value = 0.680 (> 0.05), access to health services p-value = 0.602 (> 0.05), and there was a significant relationship between family support and DM treatment compliance with p-value = 0.020 (<0.05). The conclusion of this study is that more than half of DM patients have low treatment compliance, are female, have low education, have a duration of <5 years, have access to health that takes a long time, and lack of family support. More than half of DM patients have high knowledge and positive beliefs.

Introduction

Globally, the number of people with diabetes mellitus continues to increase from year to year, the number of deaths due to cardiovascular disease and diabetes occurs more in developing countries. The International Diabetes Federation (IDF) (2021) confirmed that more than half a billion people from all over the world live with diabetes, or to be precise 537 million people, and this number is projected to reach 643 million in 2030, and 783 million in 2045. In addition to the large number of people with diabetes, it is estimated that the number of people with blood glucose levels that are starting to increase or in the prediabetes phase, namely impaired glucose tolerance in 2021 is around 541 million ('International Diabetes Federation', 2021).

Based on the data and information center of the Indonesian Ministry of Health (2018), it is known that the prevalence of DM based on a doctor's diagnosis in the population aged ≥ 15 years according to the 2018 Riskesdas increased to 1.0% compared to 2013, which was 0.9% (Ministry Of Health Of The Republic Of Indonesia, 2018). Jambi Province is a province where the incidence of Diabetes is among the 10 most common diseases in Jambi Province that must be addressed and is also one of the provinces experiencing an increase in Diabetes Mellitus

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problems. The prevalence of Diabetes Mellitus in 2020 was 4.37%, increased in 2021 to 5.48%, and increased again in 2022 to 6.05% (Jambi Provincial Health Office, 2022).

Kerinci Regency is one of the regencies in Jambi Province that has a high number of diabetes mellitus sufferers. The prevalence of diabetes mellitus in Kerinci Regency based on dataKerinci Regency Health Office 2023reached 5.98% ('Kerinci District Health Office', 2023). Various efforts have been made by the government to control blood sugar levels, one of which is controlling risk factors for non-communicable diseases.The government program is still unable to control blood sugar levels, due to the community's non-compliance in carrying out DM treatment, such as not being compliant in taking medication.

Non-compliance with treatment causes an increase in HbAIc values in people with type 2 diabetes. Therefore, this is something that must be done to control blood sugar levels (Eze et al., 2022). Non-compliance with taking medication in DM patients can reduce a person's quality of life and become the main cause of a number of microvascular problems. Therefore, the complex problems associated with diabetes are one of the global health issues that must be resolved immediately (Kanter & Bornfeldt, 2016).

Treatment compliance based on Lawrence Green's theory in (Green, 1974; Imelda et al., 2022) can be influenced by predisposing factors consisting of gender, education level, and level of knowledge, duration of suffering and beliefs. Enabling factors consisting of access to health services and reinforcing factors consisting of family support. Based on the problems above, researchers feel it is important to conduct research that analyzes medication compliance in diabetes mellitus patients in Kerinci Regency.

Literature review

Diabetes Mellitus or what is often called diabetes is a chronic metabolic disorder caused by the insulin hormone in the body which cannot be used effectively to regulate blood sugar balance, thereby increasing the concentration of sugar levels in the blood (hyperglycemia) (Febrinasari et al., 2020). There are 2 types of diabetes management, namely:

Non-pharmacological therapy

Non-pharmacological therapy is self-monitoring of blood glucose levels and ongoing education on diabetes management in patients. For example, how to treat wounds on the feet that have ulcers and always use footwear. Furthermore, medical nutrition, just like the recommended diet for the general public, the recommended diet for DM patients is a balanced diet that adjusts to the nutritional and calorie needs (Widiasari et al., 2021).

Pharmacological therapy

Pharmacological therapy for type 2 DM is given along with diet, physical exercise, and a healthy lifestyle. Pharmacological therapy consists of oral and injected drugs (Widiasari et al., 2021). Diabetes mellitus often causes macrovascular and microvascular complications. Here are some complications caused by DM Eva (2019): a) Complications of diabetic foot ulcers; b) Complications in the kidneys; c) Complications in the kidneys.

Based on data from the 2015 Consensus on Management and Prevention of Type 2 Diabetes Mellitus, prevention of type 2 DM consists of primary, secondary, and tertiary prevention (Soelistijo et al., 2015).

Primary prevention

Primary prevention is the prevention of microvascular complications which must address intensive management of modifiable risk factors, such as weight loss programs, physical exercise, stopping smoking, and in high-risk groups pharmacological interventions are required, consisting of taking medication or insulin injections.

Secondary prevention

Secondary prevention measures can be carried out by means of routine monitoring and routine management of risk factors to prevent and reduce the development of complications.

Tertiary prevention

Tertiary prevention requires comprehensive and integrated health services between related disciplines, especially in referral hospitals. Good cooperation between medical experts is essential to support the success of tertiary prevention.

Treatment compliance in Diabetes Mellitus patients is important in achieving treatment targets and is effective in preventing several complications in Diabetes Mellitus, where good and correct treatment therapy will be very beneficial for patients, both in terms of health or healing of the disease suffered, namely with patient compliance in consuming the drug, especially for patients who have to consume drugs for a long time, even for the rest of their lives in diabetes mellitus (Hannan, 2013).

Methods

This study uses a mix method study approach or a combination of two types of research, namely quantitative research and qualitative research. The type of mix method study design used is explanatory sequential design. The population in this study were all people living in Kerinci Regency, aged ≥ 15 years and diagnosed with Diabetes Mellitus recorded in the visit list in 2023 as many as 2,802 people. The number of samples in this study was calculated using the formula from Hosmer et al. (1997) which was 347 people.The sampling method in this study is by Proportional Sampling. Furthermore, to find out the target sample, a simple random block sampling technique is used.namely the sampling technique by grouping patients into two groups, namely the group of patients who come in odd and even order. The odd group is determined as a sample, and the even group is not a sample. The selection of research informants is determined based on accidental sampling, namely DM patients aged15 yearsas the main informant and cadres who are part of the community and health workers as triangulation informants. Informants in this study were taken from one health center as a representative to dig up in-depth information.

This research was conducted in Kerinci Regency which includes 21 Health Centers. The research instrument in quantitative research used a questionnaire and for qualitative researchThe instrument or research tool is the researcher himself. Therefore, the researcher as an instrument must also be validated to what extent the researcher is ready to conduct research.In quantitative research, data analysis uses the chi-square test with univariate and bivariate analysis to see the variables that have a relationship with DM patient treatment compliance, then the variables that have a relationship inqualitative analysis with descriptive discussion.

Result and Discussion

Research result

Table 1. Univariate analysis

Variables	Frequency	%
Compliance Level		
Low	301	86.7
Tall	46	13.3
Gender		
Man	167	48.1
Woman	180	51.9
Education		

Low	132	38.0
Intermediate	108	31.1
Tall	107	30.8
Knowledge		
Low	96	27.7
Currently	81	23.3
Tall	170	49.0
Long Suffering		
< 5 years	245	70.6
>= 5 years	102	29.4
Belief		
Negative	172	49.6
Positive	175	50.4
Access to Health Services		
Long	299	86.2
Fast	48	13.8
Family Support		
Not enough	206	59.4
Enough	26	7.5
Good	115	33.1

Based on table 1, it is known that more than half of DM patients have low compliance (86.7) compared to high compliance levels of (13.3%). More than half of DM patients are female (51.9%) compared to male (48.1%). DM patients have more low education (38.0%) compared to secondary education (31.1%) and high 107 (30.8%). DM patients have more high knowledge (49.0%) compared to moderate knowledge (23.3%) and (27.7%). More than half of DM patients have suffered for <5 years (70.6%) compared to >= 5 years (29.4%). More than half of DM patients have positive beliefs (50.4%) compared to negative beliefs (49.6%). More than half of DM patients have access to long-term health services (86.2%) compared to fast access to health services (13.8%). DM patients have more inadequate family support (59.4%) compared to those with adequate family support (7.5%) and good family support (33.1%).

Table 2. Bivariate Analysis

Variables	**Medication Compliance**				**Total**		**P-value**
	Low		**Tall**				
	f	**%**	**f**	**%**	**f**	**%**	
Gender							
Man	145	86.8	22	13.2	167	100	1,000
Woman	156	86.7	24	13.3	180	100	
Education							
Low	116	87.9	16	12.1	132	100	
Intermediate	97	89.8	11	10.2	108	100	0.232
Tall	88	82.2	19	17.8	107	100	
Knowledge							
Low	89	92.7	7	7.3	96	100	
Currently	71	87.7	10	12.3	81	100	0.076
Tall	141	82.9	29	17.1	170	100	
Long Suffering							
<5 years	208	84.9	37	15.1	245	100	0.162
>=5 years	93	91.2	9	8.8	102	100	
Belief							
Negative	151	87.8	38	12.7	299	100	0.680
Positive	150	85.7	8	16.7	48	100	

Access to Health Services							
Long	261	87.3	38	12.7	299	100	0.602
Fast	40	83.3	8	16.7	48	100	
Family Support							
Not enough	170	82.5	36	17.5	206	100	
Enough	24	92.3	2	7.7	26	100	0.020
Good	107	93.0	8	7.0	115	100	

Based on table 2, the analysis results show p value = 1,000 (> 0.05), so there is no significant relationship between gender and DM treatment compliance. The analysis results show p value = 0.232 (> 0.05), so there is no significant relationship between education and DM treatment compliance. The analysis results show p value = 0.076 (> 0.05), so there is no significant relationship between knowledge and DM treatment compliance. The analysis results show p value = 0.162 (> 0.05), so there is no significant relationship between duration of suffering and DM treatment compliance. The analysis results show p value = 0.680 (> 0.05), so there is no significant relationship between belief and DM treatment compliance. The analysis results show p value = 0.602 (> 0.05), so there is no significant relationship between access to health services and DM treatment compliance. The statistical test results obtained p value = 0.020 (<0.05), so there is a significant relationship between family support and the level of DM treatment compliance. The results of in-depth interviews also showed that non-compliance with DM patient treatment was related to a lack of family support for DM patients.

Univariate Results

More than half of DM patients have low compliance (86.7) Some respondents have low levels of compliance. This study is in line with research conducted by Damayanti (2021)which stated that compliance with taking medication was low, namely (55%). This research is different from the research conducted by Ali et al. (2020) of which (72.2%) respondents were compliant in taking medication.

Compliance with taking anti-diabetic medication affects the patient's blood sugar levels, therefore compliance with taking anti-diabetic medication can be a choice for patients in controlling their blood sugar (Nanda et al., 2018). This non-compliance can be overcome by involving family support. This is in accordance with the opinion Hasibuan (2021)who said family support is important in managing and controlling diabetes. Family support is one factor that can increase patient compliance in undergoing care and treatment, such as reminding patients if they forget to take their medicine (Pourhabibi et al., 2022).

More than half of the DM patients in this study were female (51.9%). The results of this study are in line with research conducted by Almira et al. (2019) which states that most of the respondents to the research conducted at Teluk Dalam Banjarmasin Health Center were mostly women (60%). The researchSari, Ilma W & Afifah (2019)got different results, namely the percentage of respondents who took part in the study were male more (51%) than female and the characteristics of respondents in the study conducted in the Tabanan II Health Center work area in 2019 were male (53.62%)The Last Supper (2019).

Gender is related to the different life roles and behaviors of men and women in society (Anggraini & Rahayu, 2017). Respondents with female gender usually have busy activities that make them forget to take their medicine and are late in getting their medicine.(Julaiha, 2019)for that reason, family support is needed to remind DM patients to take their medication. This is in line with (Putri, 2020) who said family support plays a role inprovide support to DM patients by reminding and motivating patients to exercise, regulate their diet, and take medication regularly.

More than the majority of DM patients have a low level of education (38.0%). ResearchThe Last Supper (2019) also stated that most respondents had a low level of education (did not go to school, did not finish elementary school, elementary school, junior high school), namely 45 respondents (65.22%). This study is not in line with the study conducted by Boscardin & Gonzales (2021) stated that patient characteristics in the education level variable were higher in college respondents or 88.7%.

Education is one of the factors that can influence the quality of life of DM patients because education is identical to the ability to absorb the information received and plays a role in the patient's ability to receive, understand, and apply the information received about DM management (Nam et al., 2011). It is better to conduct counseling to increase the absorption of the information received. This is in line with Saritessa et al. (2025) which states that counseling such as providing clear, simple and easy-to-understand information for DM sufferers can help DM sufferers in understanding the message conveyed, so that it can help in treatment compliance.

More than most DM patients have a high level of knowledge. This study is in line with research conducted by Hasbi (2017) which shows that most respondents have good knowledge, namely 83.3%. This research is not in line with research conducted by Lenny & Fridalina (2018) which states the relationship between patient knowledge and compliance with outpatient treatment shows that more than the majority of respondents have insufficient knowledge (53.6%).

Knowledge is the result of "knowing" which is very important for forming a person's actions. Good knowledge of the disease is very important to achieve a better quality of life. This is in line with Parmin & Safitri (2022) which states that a good understanding of DM has the potential to make patients adhere to treatment. Health promotion efforts are one of the efforts that can be made to further improve patient knowledge about DM. This is in line with Koelen & Van den Ban (2023) who said that efforts that can be made to increase knowledge are by conducting health promotions to provide health information to the community so that the community is willing and able to maintain and improve their health.

More than most of the DM patients have had DM for a long time, namely <5 years. This study is in line with the study conducted by Nugroho et al. (2018) Most respondents have a long history of suffering from DM with a range of <5 years (89.7%). This study is not in line with the study conducted byNenny et al., (2020)which stated that the respondents had suffered for > 5 years (76.7%).

Duration of suffering is the time span between the patient's first diagnosis and the current time expressed in years (Hariani et al., 2020). Patients with a long duration of suffering >= 5 years are more compliant with treatment because they have adapted to their disease condition. Patients who have suffered from DM for a long time are more experienced in dealing with DM. This is in line with the statement Astuti et al. (2024) which states that patients who suffer from DM for longer will be better able to understand the conditions they feel, both in terms of physical, psychological, social relationships, and environment. Patient education is one of the important pillars in the management of DM to optimize treatment therapy, especially in patients with a duration of <5 years. This is in line with Koivunen et al. (2008) who said that the use of education with counseling in health service facilities can help or make it easier for patients to receive information.

More than most DM patients have positive beliefs about adherence to taking DM medication. This study is supported by research conducted by The Greatest Showman (2019) which stated that most respondents had positive beliefs (53.85%). Different results were found in the study Wahidah et al. (2024) which explains that respondents have a negative level of belief in treatment, namely (79.7%).

Belief is a very effective aspect to assess a change in human behavior. This is supported by (Astuti et al., 2022) which says that belief or trust determines the behavior of each individual, especially in carrying out compliance with scheduled checks to health care facilities to monitor blood sugar levels. The higher a person's level of trust, the higher their level of compliance in the treatment they are undergoing. Efforts that can be made include self-management to increase the confidence of DM patients. This is in line with Agustina et al. (2009) who said that self-management training is one of the efforts that can be done to ensure that respondents' beliefs remain positive, such as increasing the self-confidence of DM sufferers towards treatment, as well as consultations with health workers, medical personnel coming to the homes of those suffering from diabetes, group activities, monitoring the health status of patients, and distribution of drugs carried out according to schedule.

More than most DM patients need a long time to reach health facilities. This study is in line with research conducted by Karim et al. (2022) said that as many as (67.9%) of their access to health services was poor and different results were found by Ansyar & Abdullah (2022)which said as many as (62.2%) had access to health services.

Access to health services is the community's affordability in obtaining health facilities. This is supported by Firda Maulany et al. (2021) which states that access to health services can be interpreted as a form of health service with various types of services that can be reached by the community. lGulliford et all describe the idea of measuring access to health services based on their utilization, namely depending on the accessibility of health facilities (Laksono et al., 2018). The availability of equitable health facilities is something that makes it easier for DM patients to achieve health. This is supported by Adrianto (2021) which states that the strategy that can be implemented to gain access to services is to increase development, namely by increasing the supply (availability) of evenly distributed health facilities.

More than most DM patients lack family support. This study is in line with research conducted by Rika Damayanti (2021) which stated that more than half of the respondents had low family support (53%). Different results were obtained byKarolus Siregar et al. (2022) which said that more than half of the respondents (80.0%) had received family support.

Family support is the assistance that patients receive from interactions with family members that foster feelings of comfort, security and care for the patient in providing care or in meeting the patient's needs Djannah et al. (2023). Education is one way that can be done to increase knowledge for patient D's family. This is supported by Pranata et al. (2023) which states that education for families of diabetes mellitus patients is a form of activity to increase family awareness that must be done. Providing education can be in the form of counseling accompanied by the presentation of booklets and discussing treatment (Viviandhari & Wulandari, 2017).

Bivariate Analysis

DM medication compliance has no relationship with the gender of DM patients with a p-value >0.05 (1,000). This study is in line with research conducted by Yakub et al. (2023)which shows no significant relationship between gender factors and DM treatment compliance with p-value = 0.503. Different results were obtained by Della et al. (2023)which states that there is a relationship between gender and medication compliance in type 2 diabetes mellitus patients at Panti Rini Hospital Yogyakarta with a p-value = 0.045.

Patient gender is not a problem in managing DM, because respondents who are female or male are very important in managing DM in order to prevent complications (Sasmita, 2021). Counseling is one alternative that can be done to improve medication compliance. This is supported by Putri & Isfandiari (2013) which states that improving compliance with treatment can be done by conducting health education activities in the form of education or training regarding knowledge and skills in managing Diabetes Mellitus through group education and

mass education, while the activities are carried out by Community Health Centers, Hospitals and Health Services or other institutions.

Compliance with DM treatment has no relationship with DM patient education p-value > 0.05 (0.232). The results of this study are in line with research conducted byDella et al. (2023)stated that there was no relationship with a p value of 0.673 between education and medication compliance in type 2 diabetes mellitus patients at Panti Rini Hospital, Yogyakarta. Different results were found in the study Arini et al. (2023) which shows that there is a significant but weak relationship between education level and medication adherence p = 0.042.

The higher a person's level of education, the broader the knowledge they have and their self-awareness in maintaining health. This is supported by Zulfhi (2020) which states that a person's education influences knowledge, where knowledge is the key to a person's success in improving their health status, preventing the onset of a disease, maintaining health levels, and trying to maximize existing health functions. Providing information using counseling methods can be used to increase patient knowledge even more about compliance in DM treatment. This is supported by Sofiyatin (2022) which states that the counseling method is an effective method in increasing health knowledge by providing information to the community which will later have a significant impact on knowledge and understanding of drugs.

Compliance with DM treatment has no relationship with DM patient knowledge p-value > 0.05 (0.076). Tamamaung Research Darmawan et al. (2023) also obtained the results of bivariate analysis using somer's d gamma with a p value of 0.6 (p>0.05). This can be interpreted that the hypothesis is rejected, which means that there is no relationship between knowledge about diabetes and compliance with taking medication in type II Diabetes Mellitus patients at RSPAD Gatot Soebroto. Different results were obtained by Husnah et al. (2014)which states that there is a relationship between knowledge and compliance of DM patients in undergoing drug therapy p value 0.015 ($\alpha < 0.05$)

Knowledge is a very important domain in forming a person's behavior, where the level of knowledge greatly influences the process of accepting and rejecting innovation.(Notoatmodjo, 2014). Knowledge is obtained from experience or information that has been conveyed by other people (Nenny Triastuti et al., 2020). The absence of a relationship between knowledge and compliance with DM treatment is caused by other factors such as support from family and friends, groups. With the support of family and friends, support groups can be formed to help understand compliance with the treatment program (Astuti et al., 2016).

Compliance with DM treatment has no relationship with the length of time suffering from DM patients p-value > 0.05 (0.162). This research is in line with research conducted byAstuti et al., (2024)which found that there was no significant relationship between the length of the respondent's illness and the respondent's medication compliance in controlling blood sugar levels. Different results were obtained by Rizal & Hariawan (2024) which found that there was a relationship between the duration of suffering and treatment compliance behavior in type 2 diabetes mellitus patients at the Cempaka Banjarmasin Health Center with a value of $\rho=0.027$ ($\rho<0.05$).

The duration or length of the disease affects treatment compliance. This is supported by(Sari, Ilma W & Afifah, 2019)which states that the longer a person suffers from DM, the lower the level of compliance, this is because most sufferers will feel bored to take medication. Providing education is one effort so that DM patients who have suffered from DM for a long time remain compliant in undergoing their treatment. This is supported by (Rochani & Pamboaji, 2022) which states that providing education through flipchart media displays images and explanations that are more interesting and easier for the public to understand, can increase public understanding so that they comply with treatment.

Compliance with DM treatment has no relationship with DM patient beliefs p-value > 0.05 (0.680). This study is in line with research conducted by The Greatest Showman (2019)which states (r = 0.507) there is no significant correlation between the two variables tested/ there is no relationship between beliefs and treatment compliance. Different results were obtained by Wahyudi et al. (2021)which shows that there is a relationship between belief and treatment compliance 0.004 < 0.05.Belief is a factor related to the motivation of a person or group to carry out any action, based on assumptions about behavioral change (Notoadmodjo, 2012). Self-efficacy training is an effort made to increase a person's self-confidence which is expected to influence behavioral changes for the better. This is supported by Yaqin et al. (2018) which says that self-efficacy training is an activity or training carried out by a trainer to a person or group so that the person or group is able to have confidence (belief) in their ability to achieve a goal such as being compliant with treatment.

DM medication compliance has no relationship with access to health services p-value > 0.05 (0.602). This study is in line with research conducted by Ansyar & Abdullah (2022) which states that there is no relationship between access to health services and compliance with DM treatment p = 0.397. Different results were obtained by Hutasuhut (2024) which states that there is a relationship between access to health services and the level of compliance in taking medication for DM patients with a p value of 0.018.

Access to health services is the ability to obtain health services when needed (Laksono et al, 2018). The ability to obtain health services in question is the accessibility of access in terms of distance, travel time to reach health services. This is supported by Firda et al. (2021) which states that public access to health facilities must be easy so that people can obtain the desired health services. Efforts that can be made are by building health facilities. This is supported by Cahya et al. (2023) who said that building good, effective and efficient health facilities for the entire community can be one effort to ensure that the community can easily access health services.

DM medication compliance has a significant relationship with family support p-value < 0.05 (0.020). This result is in line with research conducted by Sari et al. (2023) which states that there is a strong and significant relationship between family support and compliance with drug consumption in diabetes mellitus patients at the Kembaran 1 Health Center, Banyumas with a P-value of 0.000 (p<0.05).

The family has an important role in influencing compliance with treatment for diabetes mellitus sufferers, because with family support it can provide motivation and will also have a positive impact on diabetes mellitus sufferers so that they comply with treatment so that they can prevent complications from arising (Azizah et al., 2023). Good family support will affect the implementation of the diabetes mellitus treatment program that the patient undergoes so that the patient becomes compliant with the treatment. This is supported by Arini et al. (2022)which states that DM patients with good family support have better compliance in treatment and blood sugar control than patients without family support. Education for families is one way to increase family support for patients so that patients can be motivated and compliant in undergoing treatment. This is supported by Damayanti & Rahmawati (2021) which states that routine education with easy-to-understand language to family members in managing DM can help patients to comply with treatment. The form of family support given to patients is in the form of informational support, namely the family functions as a collector and disseminator of information about the world (Diantari & Sutarga, 2019).

Qualitative Discussion

Based on the results of in-depth interviews from several questions above, it can be concluded that the average patient who is not compliant in taking medication is due to forgetfulness and lack of family support in reminding patients to take medication. Family is a group of

individuals who are closely related continuously and interact with each other both individually and together.

This research is in line with research conducted by Priscayanti et al. (2023). Family support given by the family to type II DM patients plays a very important role in the management of diabetes treatment. Compliance in self-care management is carried out correctly and regularly, so that patients do not feel too burdened by diabetes but feel enthusiastic in carrying out daily activities, this will result in a good quality of life for type II DM patients.

Having good family support will help people with type 2 diabetes mellitus to increase their confidence in their ability to undergo treatment (Azizah et al., 2023). Study The Greatest Showman (2023) said the role of the family in compliance with treatment for family members with DM is useful for providing health support at home, so that health workers play a role in providing education and assignments to families toas a drug swallowing supervisor (PMO) who can encourage patients to take their medication regularly and alsoMotivating sufferers to be able to manage themselves, namely by being required to adapt to their illness, both in managing and handling changes in their own lifestyle and changing their behavior (Karolus Siregar et al., 2022). Education or counseling in the form ofThe delivery of diabetes mellitus material was carried out by distributing booklets to participants and providing educational material on DM disease, symptoms, characteristics of people with DM, types of DM drugs, rules for taking, side effects, and handling of side effects (Sabiti et al., 2023).

Posyandu Lansia is one of the drivers of development, especially in the health sector. Posyandu Lansia is an integrated service post for the elderly in a certain area that has been agreed upon, and is driven by the community where they can get health services. Activities like this can be done in collaboration with cadres. Health cadres at the Elderly Posyandu are one of the drivers of development, especially in the health sector. Health cadres are tasked with carrying out education for the elderly such asassisting health workers in conducting blood sugar checks, measuring height and weight, and no less importantly, providing education to the local communitywhich is at the Elderly Posyandu. The implementation of educational interventions for families is carried out based on the problems that occur at the Elderly Posyandu, namely the need to increase understanding of diabetes mellitus (Hasana & Ariyanti, 2021).

Conclusion

More than half of DM patients have low medication compliance, are female, have low education, have suffered for <5 years, have access to health care that takes a long time, and lack family support. More than half of DM patients have high knowledge and positive beliefs. There is no relationship between gender, education, knowledge, duration of suffering, belief in access to health services and compliance with DM treatment in the work area of the Kerinci District Health Office. There is a relationship between family support and compliance with DM treatment in the work area of the Kerinci District Health Service.

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