Original Research

The Relationship Between Family Support and Medication Adherence in Type 2 Diabetes Patients at Cililin Hospital, Bandung, Indonesia

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ABSTRACT

Background: Diabetes mellitus is often called the silent killer and often causes complications for sufferers that require long-term treatment. Family support is the involvement provided by the family to the patient which includes a positive attitude, affirmation and assistance. Compliance is the degree to which patients carry out treatment methods and behavior recommended by health workers. This study aims to determine the relationship between family support and medication adherence to type 2 diabetes mellitus patients at the internal medicine polyclinic of Indonesian Hospital. **Methods:** Categorical comparative analysis in 2 groups was not paired with a cross-sectional approach. The population in this study is 325 respondents. Sampling was determined using the purposive sampling technique as many as 77 respondents who met the criteria. The instruments in this study used the Nursalam social family support questionnaire and the MMAS-8 (Morisky Medication 8-item Adherence Scale) questionnaire. Data analysis used univariate and bivariate analysis with the Fisher Exact test. **Results:** The results of the fisher exact test obtained a p-value of 0.00 or <0.05, namely there was a relationship between family support and medication adherence in type 2 diabetes mellitus patients. **Conclusion:** There is a significant relationship between family support and medication adherence in patients with type 2 diabetes mellitus at the internal medicine polyclinic of Cililin Hospital.

Keywords: Diabetes mellitus; family support; medication adherence

1. INTRODUCTION

Diabetes Mellitus is a metabolic disease characterized by hyperglycemia that occurs because the pancreas is unable to secrete insulin, insulin dysfunction, or both. Long-term damage and failure of various organs such as the eyes, kidneys, nerves, heart, and blood vessels can occur in a state of chronic hyperglycemia.[1] Diabetes mellitus is often referred to as silent killer and often causes various complications for the sufferer.

According to Basic Health Research data, the number of people with type II diabetes in Indonesia is + 12,191,564 people, the number of cases of type II diabetes mellitus is predicted to continue to increase, and also type II diabetes mellitus is the number 10 cause of death.[2] Specifically, the prevalence of DM cases in Indonesia increased from 5.7% to 6.5% in 7 years and about 90% of all cases of diabetes mellitus are Type II Diabetes Mellitus (DMT2). In West Java itself, the prevalence of Diabetes Mellitus increased from 1.3% to 1.7%.[2] The increase in the prevalence of DM cases goes hand

in hand with the increase in risk factors from DM itself.

The three main acute complications of diabetes related to glucose level imbalances that last in the short term are hypoglycemia, diabetic ketoacidosis (DKA) and hyperglycemic hyperosmolar non-ketotic syndrome. Long-term hyperglycemia can play a role in causing chronic microvascular complications (kidney and eye disease) and neuropathic complications. Diabetes is also associated with an increased incidence of macrovascular diseases, such as coronary artery disease (myocardial infarction), cerebrovascular disease (stroke) and peripheral vascular disease.[3]

One of the efforts made to reduce the number of complications of Diabetes Mellitus is by using the four pillars of DM, namely meal planning, physical exercise, medicine or pharmacology, and education.[4]. One of the parameters that is an indicator of the success of DM control is treatment or pharmacology.[5]

According to Andarmoyo et al., the definition of compliance in consuming drugs with the term adherence That is the behavior to obey advice and procedures from doctors about the use of drugs.[6] The compliance of people with diabetes mellitus in taking medication is influenced by many factors such as age, education, employment, information, motivation and the support of family members.

Based on a preliminary study conducted by researchers in March 2024 at the Internal Medicine Poly of Cililin Hospital, in the last 3 months of data, as many as 325 people with type 2 diabetes mellitus were obtained. It was found that of the 10 DM clients interviewed, 6 people who received good family support became obedient to take medication, 3 people with less family support became non-compliant, while the rest did not get family support but obeyed to take medication.

The research was conducted by Henny Kaseger et al. with the title The relationship between family support and medication adherence in patients with diabetes mellitus in the working area of the Tungoi health center.[7] This study uses a quantitative method with a study design cross sectional, The population in this study was all diabetic melitus patients and the number of samples was 50 0rang. The results showed that most of the patients who received family support and obeyed in taking medication were 34 respondents (87.2%) and a small number of others did not comply with taking medication as many as 4 respondents (12.8%). Meanwhile, most of the patients who did not

receive family support and did not comply in taking medication were 7 respondents (63.6%) and a small number of others were compliant in taking medication as many as 5 respondents (12.8%).

Based on a preliminary study conducted by researchers in March 2024 at the Internal Medicine Poly of Cililin Hospital, in the last 3 months of data, as many as 325 people with type 2 diabetes mellitus were obtained. It was found that of the 10 DM clients interviewed, 6 people who received good family support became obedient to take medication, 3 people with less family support became non-compliant, while the rest did not get family support but obeyed to take medication. Based on the background description and preliminary study, the author is interested in conducting a study to find the relationship between family support and drug medication compliance of type 2 diabetes mellitus patients at the Internal Medicine Poly of Cililin Hospital.

2. METHODS

This type of research is Comparative analysis with the approach cross sectional. The research method used was comparative in accordance with the research objectives, namely the relationship between family support and medication adherence to diabtedrops mellitus type 2 patients at the Internal Medicine Poly of Cililin Hospital which was measured using questionnaires/questionnaires at one time. The population contained in this study is 325 respondents who suffer from type II diabetes mellitus at the internal medicine polyclinic of Cililin Hospital. The sample in this study amounted to 77 respondents with sampling techniques using purposive sampling.

Inclusion criteria are characteristics that need to be met by each member of the population that can be taken as a sample, so the inclusion criteria are: a) Respondents are long-term patients with at least 2 visits; b) Respondents who take antidiabetic tablets; c) Respondents can read and write; d) Type 2 diabetes mellitus patients who are willing to be respondents and have signed informed consent.

The instruments used were a family support questionnaire from Nursalam and an MMAS-8 questionnaire (Morisky Medication 8-item Adherence Scale). This research will be conducted at the Internal Medicine Poly of Cililin Hospital on Jl. Cintakarya,

Cililin, West Bandung Regency, West Java 40562. This research was conducted on June 12-July 1, 2024.

Data analysis used univariate and bivariate analysis with the Fisher Exact test. This study was approved by Fakultas Keperawatan, Institute Kesehatan Rajawali with the reference no. 410/IKR/FKEP/V/2024.

3. RESULTS

3.1 Univariate Analysis

Univariate analysis is an analysis carried out to obtain an overview of each variable, frequency distribution of various variables studied, both bound variables and independent variables which are then displayed in the form of frequency distribution. Univariate analysis in this study, namely an analysis of "The Relationship between Family Support and Drug Compliance in Type 2 Diabetes Mellitus Patients at the Internal Medicine Polyclinic of Cililin Hospital in 2024"

Table 1. Family support frequency distribution

Family Support	Frequency	Percentage
Good	69	89.6
Less	8	10.4
Total	77	100.0

Based on Table 1, it shows the distribution of the frequency of family support at the Internal Medicine Poly of Cililin Hospital in 2024. Most of the respondents received good family support with a total of 69 people (89.6%) and a small number with less family support as many as 8 people (10.4%). The high amount of good family support is due to the support of the family in accompanying the treatment, the family plays a very active role in every treatment and the family always reminds to be obedient in taking medication and the re-control schedule.

Table 2. Distribution of medication compliance frequency

Medication compliance	Frequency	Percentage
Obedient	66	85.7
Non-compliance	11	14.3
Total	77	100.0

Based on Table 2, it shows that most of the respondents at the Internal Medicine Poly of Cililin Hospital are compliant with medication as many as 66 people (85.7%) and a small number are not compliant in taking medication as many as 11 people (14.3%). The data shows that the percentage of medication adherence is quite large. This shows that the percentage of medication adherence is quite large. The thing that can cause a high rate of patient compliance can be seen from the answers to the most questionnaires, namely patients continue to take medication even though their condition is healthy, patients still carry medication when traveling, and never forget to take medicine.

3.2 Bivariate Analysis

The results of the statistical test in Table 3 showed that the significant value with the calculation results obtained was p-value = 0.000 or less than the error level value or alpha value of 0.05 which means that there is a meaningful relationship between family support and medication adherence

Table 3. Relationship between family support and drug medication compliance at the Internal Medicine Poly of Cililin Hospital in 2024.

Family support	Medication compliance						P-value
	Obedient		Non-compliance		Total		
	N	%	N	%	N	%	
Good	65	84.4	4	5.2	69	89.6	
Less	1	1.3	7	9.1	8	10.4	
Total	66	85.7	11	14.3	77	100.0	

4. DISCUSSION

The results of the study on the relationship between family support and medication adherence in patients with type 2 diabetes mellitus at the internal medicine polyclinic of Cililin Hospital in 2024 contained in Table 3 show that the results of the statistical test or Fisher Exact test with a p-value = 0.000 or less than the

alpha value of 0.05 are drawn, so it is concluded that there is a relationship between family support and medication adherence of patients with type 2 diabetes mellitus.

According to Carpetino's theory in Anggraeni 's research which states that the factor that can affect an individual's level of compliance is family support.[8] Families need to provide positive support to involve the family as a support for treatment so that there is cooperation in monitoring treatment between staff and sick family members.[9]

Family is a basic system where a person's health behavior with health care has been regulated, carried out and secured by the family as a form of preventive care. Family support is a supportive activity provided by family members, so that the individual concerned feels that he or she is cared for and valued by his or her family.[10]

Supported by another research, stated that good family support can be associated with the role or status of the family.[11] Because the role of a good family describes the ability of the family to recognize health problems in every family member who experiences a change in health status. The family also pays attention by always asking about the circumstances and complaints experienced and evaluating the development of the disease of their family members. This proves that family support is a form of caring for the family to serve, both in the form of emotional support, appreciation support, information support, and in the form of instrumental support.

Factors that affect behavior related to medication adherence are influenced by 3 factors, namely, predisposing factors such as knowledge and attitude, enabling factors such as the availability of health facilities and ease of transportation, and driving factors such as family support and health workers.[12]

Based on the results of a study conducted by Anggraeni (2022) with the title The relationship between family support and medication adherence of DM patients in the internal medicine polyclinic of the hospital at Sukabumi City.[8] This study uses a correlational method with the cross sectional with a total population of 134 people and a sample of 100 people using accidental sampling. The results showed that there was a relationship between family support and medication adherence of DM patients at the Internal Medicine Poly of R. Syamsudin Hospital, S.H Sukabumi City, where most of the patients who received family support were compliant in taking DM medication as many as 55 people (75.34%) and a small number of other patients did not comply with taking DM medication as many as 18 people (24.66%). Meanwhile, most of the patients who did not receive family support did not comply in taking DM medication as many as 23 people (85.19%) and a small number of others complied with taking DM medication as many as 4 people (14.81%).

The research conducted by Olagbemide et al. with the title "*Family support and medication adherence among adult type 2 diabetes*".[13] This research uses an analytical method cross sectional with a population of 367 selected using a systematic random sampling method. The results of the study stated that respondents with strong family support had moderate-high compliance compared to respondents with weak family support.

In line with previous studies, the findings of this study underscore the significant role that family support plays in enhancing medication adherence among patients with Type 2 diabetes. Masruroh et al. demonstrated that patients with stronger family support were more likely to adhere to their diabetes medication regimens, as family members often provide encouragement and reminders, improving patients' self-management efforts.[14] Similarly, Siregar and Wahyuni found a positive correlation between family support and medication adherence in diabetes patients at Sawah Besar Hospital, reinforcing the importance of familial involvement in diabetes care.[15] Maymuna et al. further supported these findings, revealing that patients with adequate family support had higher adherence rates, particularly when family members actively participated in managing treatment plans.[16] Nurahmah et al. also highlighted the interaction between family support and patients' knowledge of diabetes, suggesting that informed family members can play a pivotal role in promoting adherence.[17] Pranata et al. emphasized the value of counseling programs for families, which can be an effective strategy to reduce the burden of diabetes through enhanced patient adherence.[18] Additionally, Sentiani et al. and Sasmita pointed out that family support, coupled with patient education, can substantially improve the medication adherence levels, particularly among elderly patients with Type 2 diabetes.[19,20] Collectively, these studies reinforce the critical role of family dynamics in supporting medication adherence, which can be a

crucial factor in managing chronic conditions like diabetes mellitus.

In the process of collecting data research, the research was carried out before the respondent was carried out a health check, precisely when the patient was waiting to be called for examination. The limitation experienced is that some respondents lack concentration in filling out the questionnaire because they are waiting to be called and are afraid of missing the queue number. Another limitation is that the researcher did not discuss the hospital program related to Diabetes mellitus.

5. CONCLUSION

Based on the results of the study, it can be concluded that most of the respondents have good family support. Most of the respondents had high medication adherence and there was a significant relationship between family support and medication adherence in patients with type 2 diabetes mellitus with a p-value of 0.000 or <0.05, meaning there was a significant relationship.

It is suggested that this study can provide input for the director and nurses of Cililin Hospital so that they can conduct health education for patients and family members on the importance of treatment. For the next researcher, it is expected to research knowledge factors or predisposing factors first before researching family support or reinforcing factors. The next researcher can also use a sample formula with an error rate of 5% so that the results obtained are more optimal and convincing.

Conflict of Interest

The authors declare no conflict of interest.

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