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THE RELATIONSHIP BETWEEN FAMILY SUPPORT AND ADHERENCE TO ANTI-DIABETIC MEDICATION IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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ABSTRACT

Introduction: Diabetes mellitus is a metabolic disorder with hyperglycemia caused by abnormalities in insulin secretion, insulin action, or both. Diabetes mellitus can be controlled if the patient regularly controls it and adheres to treatment to prevent complications. There are several factors that influence compliance, one of which is family support. The purpose of this study was to analyze the relationship between family support and adherence to anti-diabetic medication in patients with type 2 diabetes mellitus.
Methods: This study uses a correlational analytic design with a cross-sectional approach. Sampling using the purposive sampling method with a total sample of 70 respondents. The instruments used were the family support questionnaire and the MMAS-8 questionnaire. Data analysis using Spearman rho test.
Results: There was a relationship between family support and adherence to taking anti-diabetic medication in type 2 DM patients. Based on the statistical results of family support and adherence to taking anti-diabetic medication (p = 0,020) and the correlation coefficient was 0,277. This result is positive, which means the higher the family support, the greater a person's compliance with taking medication.
Conclusion: In this case, family support is important for type 2 DM patients because it will help improve the patient's quality of life and help type 2 DM patients improve treatment adherence.

Keyword: Family Support; Medication Compliance; Type 2 Diabetes Mellitus

INTRODUCTION

At this time, technological developments have become very influential in all aspects of human life. Food production that changes people's lifestyles causes many people to consume fast food with low nutritional value, which will result in overweight and obesity and influence the development of degenerative diseases, one of which is diabetes mellitus. Diabetes mellitus is a metabolic disorder with hyperglycemia (high blood sugar levels) and disorders of carbohydrate, fat and protein metabolism caused by abnormalities in insulin secretion, insulin action or both.

According to data on from WHO (2016), diabetes mellitus in the Southeast Asia region occurs 10 years faster than in Europe with an increase in prevalence of 8.6% in 2014. More than 60% of men and women before the age of 70 die from diabetes mellitus. In 2012, in the Southeast Asia region around one million adults died either directly due to diabetes mellitus or as a result of complications of diabetes mellitus. Based on data from the IDF in 2019, the number of diabetes mellitus cases was around 463 million people, where this figure has increased from 10.4 million people in 2010 (IDF, 2019).

WHO (2016) estimates that there will be an increase in the number of diabetes mellitus

sufferers in Indonesia from 8.43 million people in 2000 to 21.257 million people in 2030. This is confirmed by data from Basic Health Research (RISKESDAS) in 2018 by the Ministry of Health which explains Indonesia has a prevalence of people diagnosed with diabetes mellitus aged ≥ 15 years and tends to experience an increase in prevalence from 5.7% (2007) to 6.9% (2013) and to 8.6% (2018). The prevalence of diabetes mellitus in West Java increased from 1.3% to 1.7%. (Indonesian Ministry of Health, 2018). Based on data from the Depok Health Service in 2018, the prevalence of diabetes mellitus in Depok City reached almost 27,000 sufferers.

WHO (2016) explains that diabetes mellitus can be controlled if sufferers carry out routine control and adhere to treatment to prevent complications. Diabetes mellitus sufferers need systematic, regular and organized care provided by health service providers. This can be improved at the primary level with interventions such as medication, health and lifestyle education, and education about the disease with appropriate follow-up (IDF, 2017).

Adequate therapeutic management is needed for DM sufferers to achieve normal blood sugar levels and reduce the risk of cardiovascular disease and complications. Diabetes mellitus is a chronic, chronic disease so compliance with taking medication is very important in managing diabetes mellitus. Compliance can be determined through a person's behavior during the treatment period, following a diet, and implementing lifestyle changes in accordance with the recommendations of health workers (Fatmawati et al., 2017).

Based on research by (Saibi et al., 2020) with the title "Compliance with Treatment of Type 2 Diabetes Mellitus Patients at the East Jakarta Community Health Center" the results showed that 71 respondents (40.6%) had a moderate level of compliance in taking anti-diabetic medication. The main reason for respondents' non-compliance was boredom or boredom with treatment (43.6%).

There are several factors that cause non-compliance in DM sufferers including demographic factors (low education level, low economic status, and ethnic background), psychological factors, family support, health workers and the health service system. Family support is one of the factors that influences DM sufferers in terms of care and treatment as well as the health values of DM sufferers. Sufferers with good family support will help in healthy behavior so that the management of diabetes mellitus will be in accordance with the recommendations of medical personnel such as taking medication regularly, maintaining a diet and doing physical activity which can reduce the risk of complications, while the lack of family support can affect the coping mechanisms. This will indirectly affect the compliance of DM sufferers when undergoing treatment therapy.

Based on a preliminary study conducted by researchers at one of the Community Health Centers in Depok, obtained from medical record data, the number of people suffering from type 2 DM in the period November 2022 – January 2023 was recorded as 687 people experiencing type 2 DM. Results of short interviews conducted on In June 2022, of 5 type 2 DM patients, 3 of them admitted that there was a lack of family attention during the patient's treatment period, while 2 of them admitted that the family sometimes gave attention to the patient. Some of them also said that they were lazy and bored of taking medicine and only took medicine if their family reminded them, but there were also those who said they still adhered to taking medicine because of their own self-awareness. Based on the existing problems, the purpose of this study to find the relationship between family support and adherence to anti-diabetic medication in patients with type 2 diabetes mellitus.

METHODS

Study Design

In this study the research method used is correlational analytic design with a cross-sectional approach.

Population, Samples, and Sampling

The population in this study were type 2 DM patients who received a prescription for therapy or treatment at one of the Community Health Centers in Depok. The total population of type 2 DM patients in the General Polyclinic at one of the Community Health Centers in Depok in 1 month is ± 169 patients. The sample in this study was calculated using the Slovin formula with a total of 70 respondents with purposive sampling. Inclusion criteria in the study were type 2 DM patient who lives at home with family, type 2 DM patients receiving anti-diabetic treatment at one of the Community Health Centers in Depok, type 2 DM patients aged 35-55 years. Duration of suffering > 1 year, composment awareness and can communicate well, and willing to be a research respondent. The exclusion criteria in this study were type 2 DM patients who have complications, patients who have mental disorders, and uncooperative patient.

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Instruments

Family support using a family support questionnaire with the type of questions in this questionnaire, namely multiple choice with 4 criteria starting from the option always to never (Nursalam, 2016). The highest total score was 48 and the lowest was 12. In the family support questionnaire, there were 12 question items covering 3 family support domains, namely the informational support domain, the instrumental support domain and the emotional support and self-esteem domain. The medication adherence instrument uses the MMAS-8 (Morisky Medication Adherence Scales-8) which contains 8 question items regarding adherence to taking anti-diabetic medication with assessment categories of high adherence (score >7), moderate adherence (score 6-7), and low adherence (score <6).

Procedure

Data were collected using a questionnaire to respondents who have signed an informed consent.

Data Analysis

The analysis aims to determine whether there is a relationship between two variabels, namely the relationship between family support and adherence to taking anti-diabetic medication in type 2 DM patients using the Spearman test.

Ethical Clearance

The research has been ethically tested at the Health Research Ethics Commision of Binawan University with the number 059/PE/FKK-KEPK/X1/2022.

RESULTS

Based on table 1 the results showed that 59 respondents (84.3%) received high family support.

Table 1. Frequency distribution of family support in type 2 DM patients

Family Support	n	%
High	59	84,3%
Moderate	11	15,7%
Total	70	100%

Table 2. Frequency distribution of family support domains in type 2 DM patients

Family support domains	High	Moderate	Mild
Informational domain	56 (80%)	12 (17,1%)	2 (2,9%)
Instrumental domain	57 (81,4%)	10 (14,3%)	3 (4,3%)
Emotional and self-esteem domain	63 (90%)	7 (10%)	0 (0%)

Based on table 2, the results show that respondents received high family support in the emotional support and self-esteem domains, while some respondents received low family support in the instrumental domain. These results show that the emotional domain and self-esteem have a significant influence on family support.

Table 3. Frequency distribution medication adherence to taking anti-diabetic in type 2 DM patients

Medication Adherence	n	%
High	13	18,6%
Moderate	48	68,6%
Mild	9	12,9
Total	70	100%

Based on table 3, the results showed that 48 respondents (68.6%) had moderate levels of compliance with taking anti-diabetic medication, 13 respondents (18.6%) had high compliance, and 9 respondents (12.9%) had low compliance.

Based on table 4, it was found that the relationship between family support and adherence to taking anti-diabetic medication in type 2 DM patients as many as 59 respondents (84.3%). As many as 45 respondents (64.3%) received high family support and had moderate medication compliance, and 12 respondents (17.1%) had high compliance. Respondents who received moderate family support with moderate medication compliance were 3 respondents (4.3%), high compliance was 1 respondent (1.4%), and low compliance was 7 respondents (10.0%).

Table 4. Analysis of the relationship between family support and medication adherence to taking anti-diabetic in type 2 DM patients

Family support	Medication adherence			Total	Spearman Rank Test
	High	Moderate	Mild		
High	12 17,1%	45 64,3%	2 2,9%	59 84,3%	p = 0,020
Moderate	1 1,4%	3 4,3%	7 10,0%	11 15,7%	r = 0,277

The results were obtained from the Spearman test with a probability value of 0,020 and a correlation strength value of 0,277. This result is positive, which means that there is a strong relationship between family support and compliance with taking anti-diabetic medication in type 2 DM patients at the Pancoran Mas Community Health Center, Depok City. The higher the family support provided, the more adherence to taking anti-diabetic medication.

DISCUSSION

Family support for type 2 DM patients

The results showed that respondents who received high family support were 59 respondents (84,3%), while several other respondents received moderate family support were 11 respondents (15,7%). According to Taylor (2006) in Sulanjari (2018), family support is a form of assistance and support provided by other family members to related individuals who need psychological and physical support. Individuals who receive high family support will feel more confident in their ability to overcome their illness and follow the recommendations or advice given by their family in managing their illness (Sulanjari, 2018).

According to Patt's (1977) theory in Friedman (2014), family support is a basic form of a person's attitude towards health care that has been regulated, implemented, and protected through preventive care by the family. The results of this research are in line with one of the basic functions of the family, according to Friedman (2014), who explains that the family has a health care function by providing care for sick individuals, providing a place to live, and meeting physical needs.

Based on the results of research regarding the family support domains, the results showed that the highest domain was found in family support is the emotional and self-esteem domains of 63 respondents (90%). The emotional and self-esteem domain is a form of family support that involves expressions of empathy and concern for DM patients so as to provide confidence and motivate DM patients to improve their health status.

The results also show that the mild family support domain was found in family support with the informational domain in as many as 56 respondents (80%). The informational domain provides support and assistance in the form of providing information, advice, and guidance to DM patients in solving their health problems (Friedman, 2014). Family support in the instrumental domain is also important for DM patients. The instrumental domain includes support in the form of the active role of the family, which can help patients obtain facilities, personnel assistance, health financing, and information that can support the care and treatment process (Choirunissa, 2018).

Compliance with taking anti-diabetic medication for type 2 DM patients

Based on the results of research regarding compliance with taking anti-diabetic medication, it was found that 48 respondents (68,6%) had moderate levels of compliance. Health behavior theory according to Lawrence Green (1980) in (Zelika et al., 2018) explains that compliance is a form of change in individual attitudes and behavior from non-compliance to compliant behavior. Care and treatment can be successful if individuals have a high level of compliance with it and think that their health is important (Becker, 1990) in (Choirunissa, 2018).

The results of this research are in line with the theory of Lawrence Green (1980) in (Zelika et al., 2018) which explains that there are several factors that influence a person's level of compliance that are predisposing factors (motivating factors), including belief or religion, attitudes, and knowledge. Strengthening factors (supporting factors) include support from health workers and family support, and enabling factors include facilities and infrastructure such as public health facilities, the provision of food needs, and physical needs.

The relationship between family support and adherence to anti-diabetic medication in patients with type 2 diabetes mellitus.

The results of data analysis using the Spearman Rank Test showed that the majority of respondents with high family support had a moderate level of compliance with taking anti-diabetic medication, while respondents with moderate family support had a low level of compliance with taking anti-diabetic medication.

Based on the theory of Carpenito (2006) in Choirunissa (2018) explains that the level of compliance can be influenced by several factors, such as family support, level of education, pain and treatment, economic level, healthy behavior, and support from the health profession. According to Munir (2021), family support is important for DM patients because it will help to improve the patient's quality of life, both physical and psychological. Support from family can also influence the patient's stress level, help maintain blood sugar levels, and increase patient compliance while undergoing DM treatment.

Based on the results of research regarding the family supports domains, results were obtained that showed that the highest domain as found in family support with the emotional and self-esteem domains of 63 respondents (90%). The emotional and self-esteem are forms of support provided through affection, trust, and attention (Ratnasari, 2022). The emotional support and self-esteem provided by families to DM patients can improve their social and psychological status, determination, and enthusiasm because they are considered valuable for the family, so it is hoped that they can create healthy behavior in DM patients in an effort to achieve a level of health in the form of complying with treatment and undergoing treatment.

The lowest family support domain found in this study was the informational domain, with 56 respondents (80%). Informational support is a form of support that contains advice, suggestions, and information given to type 2 DM patients so that it can influence their level of understanding and knowledge about DM, treatment methods, and the complications of taking medication irregularly (Damayanti et al., 2021).

Based on the results of the Spearman Rho test analysis, it shows that there is a relationship between family support and adherence to taking anti-diabetic medication. This result is positive, which means that there is a strong relationship between family support and compliance with taking anti-diabetic medication in type 2 DM patients at the Pancoran Mas Community Health Center, Depok City. The higher the family support provided, the more adherence to taking anti-diabetic medication.

This results in line with research by Damayanti et al., (2021) which showed that respondents with high family support had a high level of medication adherence. This show that family support provides DM patients with a sense of comfort and confidence in carrying out their treatment. The results of research by Keseger et al., (2023) explain that there is a relationship between family support and adherence to taking medication because a person's can be influenced by the surrounding environment, one of which is family support. Based on the results, it can be concluded that the higher the family support given to type 2 DM patients, the higher the level of compliance of type 2 DM patients with taking anti-diabetic medication.

CONCLUSIONS

This study demonstrates a significant positive relationship between family support and adherence to anti-diabetic medication among patients with Type 2 Diabetes Mellitus. Patients who receive strong emotional, informational, and practical support from their families are more likely to follow their prescribed treatment regimens consistently. Enhancing family involvement in diabetes care can serve as an effective strategy to improve treatment adherence, reduce complications, and ultimately enhance the overall quality of life for individuals living with Type 2 Diabetes Mellitus. Health professionals should consider involving family members in diabetes education and care plans to maximize patient outcomes.

DECLARATION OF CONFLICTING INTEREST

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AUTHORS' CONTRIBUTIONS

All authors contributed equally to the conception, design, data collection, analysis, and writing of this manuscript.

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