



THE ROLE OF FAMILY SUPPORT ON DIETARY ADHERENCE IN PEOPLE WITH DIABETES MELLITUS

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Abstract

Diabetes Mellitus (DM) is a chronic metabolic disease characterized by high blood sugar levels due to impaired insulin secretion or function, and it is one of the leading causes of morbidity and mortality worldwide. One of the important components in managing DM is adherence to a regular and recommended diet. This study aimed to determine the relationship between family support and dietary adherence in people with Diabetes Mellitus. The study used a correlational analytical design with a cross-sectional approach, involving 50 individuals with DM as respondents. Data collection was carried out using questionnaires, and the data were analyzed using the chi-square test. The results showed a relationship between family support and dietary adherence in patients with Diabetes Mellitus with a p-value of 0.002 ($\alpha = 0.05$). These findings indicate that family support plays an important role in improving dietary adherence in people with Diabetes Mellitus and emphasize the need for family involvement in diet management education and interventions to optimize disease control.

Keywords: Diabetes Mellitus, Backing, Compliance

Introduction

Diabetes Mellitus is one of the health problems that continues to increase and has a wide impact on the quality of life of sufferers. In the management of this disease, dietary regulation is an important aspect because the success of blood sugar level control is highly dependent on the patient's consistency in following dietary recommendations. However, various studies show that there are still many sufferers who have difficulty maintaining dietary adherence, as reported. Elsayed et al., (2023) which highlights the challenges of glycemic control when patients do not follow a regular diet. This condition not only complicates the disease control process, but also increases the risk of serious complications. Anjani & Gayatri, (2018) Affirms that although patients understand the importance of diet, its daily application remains an obstacle that requires attention from patients, families, and healthcare workers.

Globally, Diabetes Mellitus (DM) is a health problem whose prevalence continues to increase from year to year. Based on the 2019 International Diabetes Federation (IDF) report, the number of people with diabetes in the world reached around 463 million people in the age group of 20–79 years, a sharp increase from only 108 million people in 1980. In fact, the IDF projects that this number will increase to 700 million people by 2045 if a more comprehensive intervention is not carried out. Nationally, the problem of Diabetes Mellitus is increasingly worrying with the number of sufferers continuing to increase. According to the latest data from *the International Diabetes Federation (IDF) 2024*, the prevalence of diabetes among Indonesian adults reached 11.3%, which is equivalent to around 20.4 million adults suffering from diabetes in 2024 (Indonesian Ministry of Health, 2023).

Meanwhile, in East Java Province and especially in Malang City, the burden of Diabetes Mellitus is also felt. Based on the Health Profile and other studies, the number of diabetics in Malang City in 2021–2022 reached more than 23,000 people. In the health profile of East Java, there are 22,227 diabetics in Malang City. Meanwhile, according to the 2018 East Java Riskesdas data, the prevalence of diabetes throughout East Java is 2.6%, while in Malang City it is 1.4%, with one of the health centers recording 2,879 cases of type 2 diabetes—the most in the region. This high number of sufferers shows that diabetes is one of the main public health problems in Malang City, which further emphasizes the need for the important role of the family in helping increase patient dietary adherence (Malang City Health Office, 2024).

The family has a very important role in the process of managing chronic diseases, including Diabetes Mellitus. Family support can be manifested in various forms, such as emotional support through encouragement and motivation, informational support in the form of imparting knowledge about healthy eating, and instrumental support in the form of providing food in accordance with medical recommendations. People with DM who receive family support tend to have an easier time adhering to a predetermined diet because they feel cared for and do not go through the disease management process alone. This confirms that family involvement has a great influence on the success of disease control (Gaspardo et al., 2018).

Based on this phenomenon, researchers are interested in researching the relationship between family support and dietary adherence in patients with diabetes mellitus at RSUD Kanjuruhan. This study is expected to provide an empirical picture of the role of social factors in the successful management of DM among DM sufferers.

Method

This study is a quantitative research with a correlational analytical approach and a cross sectional design. The time for this research was conducted from October 10 to November 14, 2025. This research was conducted at RSUD Kanjuruhan Malang. The population of this study was 50 people with diabetes mellitus at RSUD Kanjuruhan for 1 month. The sampling technique in this study is total sampling, with a sample of 50 people.

The research instrument used family support and dietary adherence questionnaires that have been tested for validity and reliability by Ewardus Aristo & Juniarto Mario (2019). All items are declared valid because the calculated r value is greater than the table r (0.632) at a significance level of 0.05. Family support scores were categorized into poor (16–32), adequate (33–48), and good (49–64). Meanwhile, the diet adherence scores were divided into poor (10–20), adequate (21–30), and good (31–40). This score category is used for the analysis of respondents' level of support and compliance in the study.

Data collection begins with taking care of research permits to related agencies until approval of the research location. After that, the researcher distributes a questionnaire to the respondents, checks the completeness of the answers, and enters the data into a worksheet to be coded. The collected data is then analyzed using the Chi-Square test. This research has been declared ethically feasible by the Health Research Ethics Committee (KEPK) of the RSUD Kanjuruhan with No: 072.1/EA. KEPK-047/35.07.302.101/2025.

Results

Table 1. Characteristics of Respondents with Diabetes Mellitus at RSUD Kanjuruhan

Respondent Characteristics	Frequency (F)	Percentage (%)
1. Age		
Middle age	34	68%
Elderly	16	32%
Old Age	0	0%
2. Gender		
Man	14	28%
Woman	36	72%
3. Level of Education		
Elementary	27	54%
Middle	17	34%
High	6	12%
4. Work		
Not working	40	80%
Official	2	4%
Farmer	1	2%
Private	7	14%
Total	50	100%

Source : (Primary Data, 2025)

Based on table 1, it shows that most of the respondents are in middle age, namely 43 (68%) people. Most of them have a female gender of 36 (72%) people. Most of them are educated in elementary school, 27 (54%) people. And almost all respondents did not work as many as 40 (80%).

Table 2. Distribution of Family Support Frequencies at RSUD Kanjuruhan

Family Support	Frequency (F)	Percentage (%)
Less	0	0%
Enough	37	74%
Good	13	26%
Total	50	100%

Source : (Primary Data, 2025)

Based on table 2, it shows that most of the respondents have a sufficient level of family support, which is 37 (74%) people.

Table 3. Distribution of Dietary Adherence Frequency at RSUD Kanjuruhan

Diet Adherence	Frequency (F)	Percentage (%)
Less	3	6%
Enough	46	92%
Good	1	2%
Total	50	100%

Source : (Primary Data, 2025)

Based on table 3, it shows that almost all of them have a sufficient level of dietary adherence to 46 (92%) people.

Table 4. Relationship between Family Support and Dietary Adherence in Patients with Diabetes Mellitus at RSUD Kanjuruhan

Family Support	Diet Adherence						Total		P Value
	Less		Enough		Good		f	%	
	f	%	f	%	f	%			
Enough	0	0%	43	86%	0	0%	43	86%	0,002
Good	1	2%	5	10%	1	2%	7	14%	
Total	1	2%	48	96%	1	2%	50	100%	

Source : (Primary Data, 2025)

Based on table 4, almost all respondents have sufficient dietary adherence and sufficient family support for 43 (86%) people, while a small number of 7 (14%) people are in the good category. The Chi square test was obtained with a *p* value of 0.002 that was smaller than $\alpha=0.05$ which means that there is a significant relationship between the level of family support and dietary adherence in patients with Diabetes Mellitus at RSUD Kanjuruhan.

Discussion

1. Level of Family Support for Diabetic Mellitus Patients at RSUD Kanjuruhan

Based on table 2, the results of this study show that family support for people with diabetes mellitus at RSUD Kanjuruhan almost all have a sufficient level of dietary adherence of 43 (86%) people, while a small proportion have a good category of 7 (14%) people. These findings illustrate that family involvement in supporting diabetes management is still not optimal for the majority of respondents.

According to AlHaidar et al. (2020), family support is one of the most important external factors in the successful management of diabetes mellitus. Family support assists patients in carrying out self-care such as dietary arrangements, medication adherence, and regular monitoring of health conditions. This is in line with Olagbemide et al. (2021) who stated that strong family support is able to improve patient adherence and is associated with better glycemic control (Mphasha et al., 2022).

These results are different from the study conducted by Olagbemide et al. (2021), which showed that most patients with diabetes mellitus actually have family support strong. Strong family support in the study was shown to be associated with higher levels of adherence to medication and better glycemic control (Della et al., 2023).

According to a study by Wilson et al. (2024), middle-aged patients tend to receive and respond better to family support than elderly patients due to differences in cognitive capacity and motivation; This explains the field finding that the 36–55 age group is more likely to report real family involvement in dietary regulation and medication supervision (Ridwan & Dewi, 2024).

According to Ridwan et al. (2024), the education level of family members has an impact on the quality of support: families with secondary/higher education levels are better able to understand medical recommendations and put them into practice (e.g., preparing low-sugar menus, reminding them of meal schedules), while families with low education tend to provide emotional support but lack specific instrumental support. In addition, family members' work determines the availability of time for family supervision with non-working members having a greater chance of providing daily assistance than families with full-time working members. The findings of this finding are in line with research field data at RSUD Kanjuruhan which shows the distribution of majority family support in the sufficient category (Ridwan & Dewi, 2024).

The researchers assumed that the sufficient category of family support was due to the limited involvement of families in consistently accompanying patients in the management of diabetes mellitus.

2. Diet Adherence Level in Diabetic Mellitus Patients at RSUD Kanjuruhan

Based on Table 3, the results of the study show that the level of dietary adherence in patients with diabetes mellitus at RSUD Kanjuruhan, the majority of respondents are in the category of adequate, almost all of them have a sufficient level of dietary adherence of 43 (86%). These results show that some patients have followed the recommendations of the diabetic diet, but there are still a number of patients who have not been able to apply the diet pattern consistently.

According to the theory (Nooriani et al., 2019), adherence to the diet is influenced by the individual's perception of perceived benefits and disease threats. Patients who understand that improper diet can lead to serious complications such as nephropathy, retinopathy, cardiovascular disease, and hard-to-heal diabetic wounds, tend to have higher adherence. Conversely, if patients are unaware of the threat, they are more likely to ignore dietary recommendations.

This research is in line with research conducted by Zulkarnain & Sahriana, (2021).which found that dietary adherence had an effect on blood sugar levels, in DM patients in the work area of the Ngali Health Center. Patients who do not adhere to the diet tend to have unstable blood sugar levels, thus increasing the risk of diabetes complications. The main factors that lead to low dietary adherence are the patient's lack of understanding as well as boredom in restricting favorite foods. In the journal, it was explained that dietary non-compliance was caused by patients' difficulties in restricting the intake of sugary and high-carbohydrate foods, as well as difficulties in measuring portions as recommended.

The results of this study are also supported by research (Nursyifa et al., 2023) which shows that most of the respondents are not compliant with the diet, and this condition is significantly related to blood sugar levels at any time. The study explains that dietary non-compliance factors are often associated with low motivation, unhealthy eating habits, and lack of support from the environment. Patients with poor dietary adherence were 44,686 times more likely to experience uncontrolled blood sugar levels compared to adherent patients.

Therefore, differences in dietary adherence can be understood as the result of interactions between health perceptions, individual characteristics, and family support that influence each other, so that each person shows different responses to dietary recommendations.

According to Wilson et al. (2024), patients of productive age show relatively better dietary adherence than the elderly group, who often face obstacles such as long eating habits, memory problems, and physical limitations that make the implementation of dietary recommendations difficult. In addition, the study also found that patients who were working often experienced dietary adherence barriers due to irregular meal times and limited healthy food options in the work environment (Baral et al., 2022).

According to Mansour et al. (2023) the results of other family intervention studies, concrete family support such as helping to prepare meals as recommended, reminding portions, and accompanying controls significantly increases dietary adherence so that the effects of patient education become more pronounced when families are also involved. From this perspective, low dietary adherence may be related to a combination of patient knowledge, family support, and occupation/age constraints (Mansour et al., 2023).

The researchers assumed that dietary adherence was influenced by family support, as seen from the majority of respondents who had family support and dietary adherence in the adequate category.

3. The Relationship Between Family Support and Dietary Adherence in Patients with Diabetes Mellitus at RSUD Kanjuruhan

Based on the results of the study in table 4, almost all respondents have sufficient dietary adherence and sufficient family support of 43 (86%) people, while a small number of 7 (14%) people are in the good category. The Chi square test was obtained with a *p* value of 0.002 that was smaller than $\alpha=0.05$ which means that there is a significant relationship between the level of family support and dietary adherence in patients with Diabetes Mellitus at RSUD Kanjuruhan.

Another study by Knafl et al. (2021) also supported this association which found that with family support both had high dietary adherence, while with low support showed dietary non-adherence, by showing a significant relationship between family support and dietary adherence. This finding is strengthened by research by Herawati (2021) which reported that with family support, good adherence to diet, while family support is less likely to be non-compliant, meaning that there is a meaningful relationship between family support and diet adherence.

Therefore, variations in dietary adherence can be understood as a result of differences in family support levels, where the quality of support also determines the extent to which a person is able to consistently implement dietary recommendations. In addition, this research is also relevant to the results of the research (Stuart, 2021) stating that family support has a significant relationship with the dietary adherence of people with diabetes mellitus, In the study it was found that patients who received good family support, were better able to follow dietary recommendations consistently compared to those who were less supported. Family involvement in the form of food monitoring, motivation, and assistance during health control, plays an important role in increasing dietary adherence.

Research by Knafl et al. (2018) also shows that good family support contributes to patient adherence in the management of chronic diseases, including diabetes mellitus. The study states that family-based interventions improve consistency of dietary regulation and disease control behaviors, and the results show statistical significance to patient adherence in disease management.

According to (Baral et al., 2022), the strength of such relationships is influenced by moderation variables such as age and education: in patients with higher education, family support tends to be more easily translated into correct dietary practices due to the shared understanding between the patient and the family; Whereas in elderly patients, despite high family support, physical and cognitive barriers can reduce the effectiveness of support to real adherence.

According to Mansour (2023), interventions involving families (family-centred education/empowerment) improve dietary adherence and glycemic outcomes are greater than interventions that only target patients; This indicates that practice recommendations such as involving key family members in diet education sessions, developing meal plans together, and adapting plans to family members' work conditions can strengthen the compliance support relationships you find at RSUD Kanjuruhan. (Mansour et al., 2023).

Based on these findings, the researcher assumes that the high proportion of respondents with sufficient family support accompanied by the level of dietary adherence which is also in the sufficient category indicates the direct influence of family support on dietary behavior in patients with diabetes mellitus. The better the support provided by the family, the higher the patient's motivation to follow the diet according to medical recommendations, thus having an impact on disease control and the prevention of long-term complications.

Conclusion

Most of the patients with Diabetes Mellitus at RSUD Kanjuruhan Malang have a sufficient level of family support, while almost half receive good family support. Almost all respondents showed adequate levels of dietary adherence, although there were a small percentage who had less knowledge and low dietary adherence. This study also showed a significant relationship between family support and dietary adherence in people with Diabetes Mellitus, as evidenced by the p value = 0.002 ($p < 0.005$).

It is hoped that health facilities will increase facilities, educational media, and coordination between health workers, patients, and families to support dietary compliance for people with Diabetes Mellitus. Respondents are expected to improve dietary adherence through the implementation of dietary patterns as recommended, regular consultations, and additional knowledge from trusted sources by involving families. Researchers are further expected to expand the research variables and use different designs to obtain more comprehensive results, including assessing the effectiveness of interventions on dietary adherence.

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