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Family Support for Adherence to Routine Checkups in Patients with Diabetes Mellitus

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Abstract

Introduction: Diabetes mellitus (DM) is known as the "Mother of Diseases" among various incurable chronic conditions. Adherence to routine check-ups is a crucial component of effective diabetes management and treatment. One factor influencing adherence is family support. Objective: To determine the relationship between family support and adherence to routine check-ups among diabetes mellitus patients. Methods: The study design employed a correlational analytical approach using a cross-sectional design. The sample consisted of 80 respondents selected via simple random sampling. Data were collected through a family support questionnaire and secondary data (medical records) from the community health center. Data analysis used the Spearman rank test with a significance level of $\alpha < 0.05$. Results: This study found that 90% of participants had good family support, 10% had adequate family support, 88% adhered to routine check-ups, and 12% did not adhere to routine check-ups. Based on the Spearman's rho correlation test, the significance value (two-tailed) was $0.001 < 0.05$, indicating a significant association between family support and adherence to follow-up visits. Discussion: Family involvement in patient care is crucial for the management and control of diabetes mellitus (DM). Families can foster positive behaviors, such as enhancing motivation and improving adherence among DM patients.

Keywords: *Adherence; adherence to routine check-ups; diabetes mellitus; family support*

INTRODUCTION

Diabetes mellitus is often referred to as the "Mother of Disease"—the root cause of various chronic conditions that cannot be cured, though serious complications can be prevented through diet, physical activity, and strict blood sugar control (Ri, 2016). However, in reality, adherence among people with diabetes remains very low, as evidenced by the fact that they do not always monitor their blood sugar levels regularly. One factor influencing adherence is family support. The lower the level of family support, the lower the level of adherence to routine monitoring.

In 2021, 463 million people aged 20–79 worldwide had diabetes, representing a prevalence rate of 9.3% of the total population in that age group. This prevalence is projected to rise with age, reaching 19.9% or 111.2 million people. This figure is projected to continue rising, reaching 578 million by 2030 and 700 million by 2045 among those aged 65–79 (Federation & Atlas, 2021).

Family support can influence people's adherence to routine checkups at available healthcare facilities (Nugroho et al., 2018). This is because family members are the closest people to the patient and play an active role in ensuring treatment adherence and success among people with diabetes. Many people with diabetes do not adhere to regular check-ups and do not understand the four pillars of diabetes management, which include monitoring blood sugar levels, following a diet, exercising, and taking medication regularly. This is due to a lack of self-awareness and insufficient support from family members (Jaya et al., 2022).

Diabetes management must be maintained for life, and people with diabetes are expected to adapt to their condition so they can shift their lifestyle from maladaptive to adaptive behaviors. However, patients often experience burnout and non-adherence (Federation, 2017).

Regular check-ups play a crucial role for people with diabetes in normalizing insulin function by ensuring they adhere to their medication regimen without causing hypoglycemia, thereby helping to reduce the risk of complications. However, the prolonged and complex nature of treatment can lead to burnout and non-adherence (Fandinata & Darmawan, 2020).

METHODS

This study employed a correlational analytical design with a cross-sectional approach. The study was conducted in the service area of a community health center in Surabaya in August 2022. The study population consisted of all patients with diabetes mellitus in the service area of one of the community health centers in Surabaya. The study sample comprised 80 respondents selected using simple random sampling.

The independent variable of the study was family support, while the dependent variable was adherence to routine check-ups among patients with diabetes mellitus. Data collection was conducted using a family support questionnaire and secondary data in the form of health center medical records. Data analysis was performed using univariate and bivariate methods, employing the Spearman Rank test with a significance level of $\alpha < 0.05$.

RESULTS

Table 1 Characteristics of Respondents by Age, Gender, Education Level, Occupation, Duration of Diabetes, and Marital Status in the Service Area of a Community Health Center in Surabaya

Variables	Category	n	%
Age	35–45 years	22	27.5
	46–70 years	58	72.5
Gender	Male	42	52.5
	Female	38	47.5
Education Level	Elementary School	3	3.8
	Junior High School	14	17.5
	Senior High School	56	70.0
	Diploma	1	1.2
	Bachelor Degree	6	7.5
Occupation	Unemployed	3	3.8
	Housewife	27	33.7
	Private Employee	35	43.8
	Entrepreneur	14	17.5
	Civil Servant	1	1.2
Duration of Diabetes Mellitus	1–5 years	63	78.8
	6–10 years	11	13.7
	>10 years	6	7.5

Variables	Category	n	%
Marital Status	Married	79	98.8
	Unmarried	1	1.2
	Junior High School	3	3.8
	Senior High School	60	75.0
	Bachelor Degree	14	17.5
	Diploma	3	3.7
	< 1.5 Million	9	11.3
	1.5 – 3 Million	33	41.2
	3 – 5 Million	30	37.5
	>5 Million	8	10.0

The table above shows that of the 80 respondents, the majority—58 people—were aged 46–70 years, or 72.5%; by gender, the majority were male, totaling 42 people (52.5%). Based on educational level, the majority had a high school education, totaling 56 people (70%); based on employment, the majority worked in the private sector, totaling 35 people (43.8%); based on duration of diabetes, the majority had had the condition for 1–5 years, totaling 63 people (78.8%); and the majority were married, totaling 79 people (98.8%).

Based on the data above, the educational level of the families is predominantly high school, with 60 respondents (75.0%); and the family income is predominantly between 1.5 and 3 million rupiah per month, with 33 families (41.2%).

Table 2 Specific data on family support and adherence to routine checkups among patients with diabetes mellitus at a community health center in Surabaya

Variables	Category	n	%
Family Support	Good	72	90.0
	Fair	8	10.0
	Poor	0	0.0
Compliance with Routine Inspections	Non-Routine Inspections	10	12.0
	Routine Inspections	70	88.0

The data shows that 72 people (90%) received good family support, while 8 people (10%) received adequate family support.

The table above shows that 70 people (88%) attended routine checkups regularly, while 10 people (12%) did not attend routine checkups.

Table 3
The Relationship Between Family Support and the Level of Compliance with Routine Checkups.

Variables	Non-Adherent n (%)	Adherent n (%)	Total n (%)	p value
Sufficient Family Support	3 (4.9)	5 (7.8)	8 (12.7)	
Good Family Support	7 (14.6)	65 (72.7)	72 (87.3)	0.001*

The table above shows that, with good family support for routine checkups, 65 respondents (72.7%) demonstrated high compliance (compliant), while the remaining 7 (14.6%) demonstrated low compliance (non-compliant). Conversely, for the level of compliance with check-ups with adequate family support, there were 8 respondents, or 12.7%. Among these, 5 respondents, or 7.8%, had a high level of compliance (compliant), and the remaining 3, or 4.9%, had a low level of compliance (non-compliant).

Based on the Spearman's rho correlation test table above, the significance value (sig., two-tailed) was 0.001 < 0.05, indicating a significant relationship between the family support variable and control compliance.

DISCUSSION

The research findings indicate that family support was generally good. In this study, some respondents received good family support and demonstrated high levels of adherence. A supportive family role reflects the family's ability to recognize health issues in any family member experiencing changes in health status. This can be linked to the family's marital status. Based on the data were married. Families also showed concern by continuously asking about the condition and complaints experienced by family members every day and observing the progression of their illnesses (Siregar & Siregar, 2022).

According to Friedman (2013) as cited in (Oktavia, 2024), family support includes

informational, instrumental, emotional, and self-esteem support. The family serves as a source of information, providing advice, suggestions, and information that can be used to address problems faced by families living with diabetes mellitus. The family is a source of practical and concrete help, including in terms of financial needs, food, drink, and rest. The family participates in managing the financial needs of the family with DM. The family also helps with emotional control by providing attention, listening to complaints, guiding and mediating in finding solutions to problems, and providing support for people with DM.

According to (Nugroho et al., 2018), the factors influencing family support include both internal and external factors. Internal factors include age, educational level, emotional well-being, and spirituality. External factors include family support, socioeconomic status, and culture. Based on the research findings, the educational level of the family is predominantly high school.

The discussion section in a scientific article is a crucial element that addresses the interpretation, implications, and context of the research results. Firstly, the discussion begins by explaining the research findings and interpreting the existing results. It is important to demonstrate whether the hypothesis is proven or not and why the results are relevant in the context of the research. Next, a comparison with previous research is conducted to show how the current research results support, supplement, or even contradict findings from previous research. Differences in methodology or context that may influence the results should also be discussed.

The theoretical and practical implications of the research findings also need to be explained in the context of existing theories and practices within the field of study. Discussing how the findings can enrich understanding of the topic and how these results can be applied in practice is essential. Moreover, acknowledging limitations in the research, such as sample size, methods used, or unmeasured variables, is necessary. An explanation of how these limitations may affect the interpretation of results and the generalization of findings should be provided.

Suggestions for further research that can help address limitations in the study or answer unanswered questions also need to be included. This may involve using different methods, larger samples, or further research on relevant variables. Lastly, a summary of the main points discussed in the discussion section and a strong conclusion about the importance of research findings should be provided to close the discussion section. In this way, readers will gain a better understanding of the context and implications of the research that has been conducted. According to (Agustina, 2024), cognitive abilities shape a person's way of thinking, including their ability to understand factors related to illness and to use health knowledge to maintain their own health. Families who are knowledgeable about their family members' health will always provide support to family members who are undergoing treatment.

According to the results of a study on routine follow-up visits, the majority of respondents were compliant in attending routine follow-up visits at the community health center. This was demonstrated by their attendance at routine follow-up visits at least once a month or more; in contrast, respondents who received.

Green (2005) as cited in (Tjokroprawiro, 2015) states that adherence is a change experienced by an individual from non-compliance with regulations to compliant behavior. According to(Syahid, 2021), factors associated with adherence to diabetes mellitus treatment include age, knowledge, motivation, social factors (family and healthcare provider support), education, economic status, access, and psychological factors. Based on educational level, the majority were high school graduates. Based on age, the majority of patients were aged 46–70 years. Most patients had been living with the condition for 1–5 years. According to Notoatmodjo (2014) as cited in (Syahid, 2021), knowledge is one of the predisposing factors influencing behavioral formation in an individual. People with DM need to receive at least the minimum information provided after the diagnosis is confirmed, including basic knowledge about DM, self-monitoring, causes of high blood glucose levels, oral hypoglycemic agents, meal planning (diet), care, physical activity, signs of hypoglycemia, and complications.

People with diabetes who already have sufficient knowledge about the condition and have long-term experience living with it will subsequently change their behavior so that they can manage their condition and enjoy a better quality of life. The working-age population—specifically those aged 45–65—is the demographic most active in driving the family economy. Enhancing the knowledge and skills of residents, particularly those in the working-age group, is crucial to supporting the success of efforts to improve the health of the community (Syahid, 2021).

Economic support significantly influences adherence among people with diabetes; those with higher economic status are better able to manage their

health through regular checkups and a diet that can be easily controlled. According to the study on family incomeearned between 1.5 and 3 million per month. Many patients with diabetes often face financial challenges, such as the high cost of medication and transportation expenses required to visit the doctor; low income will certainly affect treatment adherence (Yulianti & Anggraini, 2020).

Social support, particularly from family and partners, also improves patients' adherence to diabetes management programs. Family support is one of the factors influencing the consistency of blood glucose control. Support from family (emotional, appreciative, instrumental, and informational dimensions) is associated with quality of life; the higher the level of family support, the higher the quality of life for patients with diabetes. The closeness of the relationship between patients and healthcare providers is one of the social factors identified through interviews with participants.

The results of the Spearman rank correlation analysis (rho) indicate a relationship between family support and adherence to routine checkups.

Diabetes management is quite complex and requires special care beyond glycemic control. Diabetes mellitus care is almost entirely carried out in the home environment, and this influences diabetes management behavior. Family members' involvement in patient care is crucial for managing and controlling the prevalence of diabetes mellitus (DM) (Mphasha et al., 2022). Families can encourage positive behaviors, such as improving self-care management, in people with diabetes (Ansari et al., 2021). Family support serves as a source of motivation and improves self-care behaviors in patients with diabetes (Mokhtari et al., 2023).

Family support can influence people's adherence to routine checkups at available healthcare facilities (Nugroho et al., 2018). This is because family members are the people closest to the patient and play an active role in ensuring treatment adherence and success for people with diabetes. Family members help remind people with diabetes of behaviors that worsen their health and assist in explaining aspects they may not yet understand (Jaya et al., 2022).

Families also play a role in carrying out nursing care practices, specifically to prevent health problems and to care for family members when they are ill. A family's ability to maintain health can be seen in the family health tasks they have carried out. Families that are able to carry out these tasks are capable of addressing the health issues they are currently facing.

CONCLUSION

Strong family support has a significant impact on patients' adherence to routine diabetes management. Effective family involvement demonstrates the family's ability to understand each family member's health issues as their health status changes, as well as their commitment to providing emotional support, encouragement, information, and practical assistance.

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