





The Relationship Between Family Support and Dietary Adherence in Patients with Diabetes Mellitus

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Abstract

Background: Dietary adherence is an important effort to control blood sugar and cholesterol in patients with diabetes mellitus (DM). Good family support can improve dietary adherence, so complications due to DM can be prevented.

Objective: This study aims to determine the relationship between family support and dietary adherence in DM patients.

Methods: This study used a descriptive analytic method with a cross-sectional approach. The population was recorded as 526 DM patients at RS Bhakti Asih Brebes, where the collected sample was 227 DM patients selected using purposive sampling technique. Family support and dietary adherence were measured using valid and reliable questionnaires. The analysis was carried out using the Gamma Correlation Test to determine the relationship between family support and DM dietary adherence.

Results: A total of 154 patients (67.8%) had sufficient family support and 202 patients (89%) adhered to the DM diet. The analysis showed that there was a significant relationship between family support and DM dietary adherence with a value of 0.0001.

Conclusion: There is a relationship between family support and DM dietary adherence in DM patients at RS Bhakti Asih Brebes. Patients and families are expected to establish good communication, so that harmonious family support is created.

Keywords:

Adherence; Diabetes Mellitus; Diet; Family Support

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Introduction

Estimates from the World Health Organization (WHO) indicate a projected significant increase in cases of diabetes mellitus (DM) in Indonesia, reaching 21.3 million individuals by 2030. The International Diabetes Federation (2021) reported that 537 million adults (aged 20-79 years) globally, or approximately 10% of the world's adult population, are living with DM. Prevalence data for DM in Indonesia in 2018, based on gender, showed figures of 1.2% in the male population and 1.8% in the female population. According to the 2018 consensus, the prevalence of DM in residents aged ≥ 15 years was recorded at 10.9% (Perkumpulan Endokrinologi Indonesia, 2021). DM is also the cause of 6.7 million global deaths, with an estimated one death every 5 seconds. Indonesia ranks 5th in the world with 19.47 million people with diabetes. With an Indonesian population of 179.72 million, the national diabetes prevalence is 10.6%

(Kementerian Kesehatan RI, 2018). Furthermore, at the regional level, 12,563 DM cases were recorded in the population of Brebes Regency.

Potentially fatal complications can occur in individuals with diabetes mellitus (DM) who do not adhere to recommended dietary management. Hutagalung et al. (2023) state that to minimize the risk of complications in DM patients, crucial preventive measures include regular blood glucose monitoring, adherence to a low-sugar diet, routine blood sugar checks, regular physical activity, and diabetic foot care. Consistent with this, Oktavera et al. (2021) emphasize that adherence to a DM diet is a critical strategy in reducing the risk of complications and recurrence of DM. Dietary adherence in DM plays a significant role in stabilizing blood glucose levels towards the normal range and preventing the development of further complications.



Adherence to a diabetes mellitus (DM) diet is a crucial aspect in managing glycemia, lipid profiles, and triglycerides to approach the normal range. This effort is essential to minimize the risk of chronic complications, such as diabetic foot ulcers. Compliance with a dietary regimen in individuals with Diabetes Mellitus (DM) plays a crucial role in regulating body weight towards the ideal range, reducing blood glucose levels, improving serum lipid profiles, lowering systolic and diastolic blood pressure, increasing insulin receptor sensitivity, and optimizing the coagulation system (American Diabetes Association, 2020). Determinants of diet adherence in Diabetes Mellitus patients can be classified into two major groups: internal factors and external factors. Internal factors that play a role include education level, knowledge, belief systems, and individual personality characteristics. Meanwhile, external factors encompass the quality of interaction between professional healthcare providers and patients, environmental aspects, and support provided by family (Nasution et al., 2021).

Families play an essential role in the spectrum of family healthcare, covering strategic stages through rehabilitation phases (Salamung et al., 2021). Social support from family members such as parents, children, partners, or siblings manifests in various forms, including informational support, specific behavioral support, or material support. These forms of support contribute to an individual's perception of acceptance, attention, and affection (Astutisari et al., 2022). A positive correlation has been observed between the quality of family support and the level of patient dietary adherence. Adequate family support correlates with better dietary adherence, while a deficiency in family support is associated with decreased dietary adherence (Nasution et al., 2021).

Research by Mela & Barkah (2022) indicates a significant relationship between family support and individual adherence to dietary plans. This suggests that individuals who perceive stronger family support are more likely to comply with their prescribed diet. Similarly, a study by Sa'adah et al. (2023) also identified a positive correlation between family support and the level of individual compliance in performing routine check-ups. The findings of this research demonstrate that a higher level of family support is associated with increased individual compliance in maintaining routine health controls. This study aims to analyze the relationship between patient motivation and the level of dietary adherence among hypertensive patients at RS Bhakti Asih Brebes.

Methods

Research Design and Approach

This study utilized a cross-sectional research design to explore the relationship between family support and dietary adherence among patients with Diabetes Mellitus. The research was conducted at RS Bhakti Asih Brebes in 2024. A total of 120 participants were recruited using purposive sampling to ensure that the sample included individuals who met the specific criteria for the study.

Participants

The study included 120 patients diagnosed with Diabetes Mellitus who were receiving treatment at the selected healthcare facility. Inclusion criteria required participants to be adults aged 18 years and older, diagnosed with Diabetes Mellitus for at least one year, and able to provide informed consent. This selection process aimed to ensure that the participants had relevant experience with the condition and could provide valuable insights into the study.

Instruments and Measurement

Data were collected using two validated instruments:

1. The Family Support Scale (FSS) to assess the level of family support provided to patients.
2. The Dietary Adherence Questionnaire (DAQ) to evaluate the adherence of patients to dietary recommendations.

The FSS was designed to measure various dimensions of family support, including emotional, informational, and practical assistance. The DAQ assessed participants' adherence to dietary guidelines specific to Diabetes Mellitus management.

Data Collection

Data collection was conducted over a period of 3 months, during which participants were approached in outpatient clinics and diabetes education programs. After obtaining informed consent, participants completed the FSS and DAQ questionnaires. The data collection process was standardized to ensure consistency and reliability in responses.

Ethical Considerations

Ethical approval for the study was obtained from the Institutional Review Board (IRB) prior to the



commencement of the research. Informed consent was secured from all participants, ensuring their voluntary participation and understanding of the study's objectives and procedures. Confidentiality and anonymity were maintained throughout the research process to protect the identities of the participants.

Results

A total of 227 respondents were obtained. The research results show the characteristics of respondents in the research, that the highest distribution of respondents was concentrated in the 30 to 40-year-old age group, with a frequency of 81 respondents, representing 35.7% of the total sample. The respondent demographics were also predominantly female, accounting for 122 respondents or 53.7%. Furthermore, the highest level of education, Higher Education, was the most frequently observed category, with 59 respondents or 26%.

Based on Table 1, it can be explained that the largest number of respondents were in the "moderate" family support category, totaling 154 respondents or 67.8%. Similarly, the highest number of respondents in DM diet adherence were in the "adherent" category, reaching 202 respondents or 89%.

Based on Table 2, the Gamma correlation test with a significance level of 5% ($\alpha = 0.05$) yielded a p-value of 0.0001. Because this p-value is less than 0.05, it is concluded that family support has a significant relationship with the level of dietary compliance of DM patients at RS Bhakti Asih Brebes.

Table 1
Respondent Characteristics, n=227 respondents

Indicators	n	%
Age (year)		
30-40	81	35.7
41-50	75	33.0
51-60	71	31.3
Gender		
Male	105	46.3
Female	122	53.7
Level of Education		
Elementary	56	24.7
Middle	51	22.5
High	61	26.9
College	59	26.0
Family Support		
Low	21	9.3
Moderate	154	67.8
High	52	22.9
Diet Adherence		
Non-adherent	25	11.0
Adherent	202	89.0
Total	227	100

Table 2
Relationship Between Family Support and Dietary Adherence (n = 227)

Indicators	Coefficient of correlation	p
Family Support - Diet Adherence	0,929	0,0001

Discussion

Family support is a continuum process that occurs throughout an individual's lifespan, with the characteristics and forms of support diversifying as life cycle stages progress. Although social support can originate from various relationships, support from family holds crucial significance, particularly for family members experiencing compromised health conditions. Manifestations of family support can be categorized into internal social support, which encompasses relationships within the nuclear family unit such as spouses and siblings, and external family support originating from kinship networks outside the nuclear family. The presence of family support contributes to the optimization of family functions in various cognitive and affective aspects. The positive consequence of this is the holistic improvement of family health status and the family's adaptive capacity to life's dynamics (Kaakinen et al., 2018).

A total of 202 respondents demonstrated good adherence to the diabetes mellitus (DM) diet. Additionally, 154 other respondents reported adequate family support. These results indicate that the majority of respondents in this study perceived significant family support during the DM management process.

The provision of emotional support by families plays a role in promoting patient communication regarding personal issues, which in turn contributes to reducing the personal burden experienced. This emotional support can be manifested through forms such as attention, affection, and empathy (Savioh et al., 2021).

Evaluative support, which includes the affective dimension of family, plays an important role in improving the psychosocial status of DM patients. This form of support manifests in family efforts to guide and resolve patient problems, through providing support, validation, appreciation, and attention (Sa'adah et al., 2023).

Instrumental support that can be provided by families to individuals with diabetes mellitus (DM) includes actions such as taking or accompanying DM patients when accessing health services. In addition, instrumental support can also be realized in the provision of nutritional needs, where families



facilitate the purchase of food ingredients that are in accordance with the therapeutic diet recommendations undertaken by DM patients (Mela & Barkah, 2022).

Informational support from the family can take the form of verbal reminders to DM patients to maintain adherence to the established diet plan. Furthermore, informational support can also be implemented through the delivery of comprehensive information related to the rationale, benefits, and consequences of medical interventions or dietary modifications applied to patients (Sa'adah et al., 2023).

Based on research data, it was found that a total of 21 respondents reported receiving insufficient family support. In addition, 25 respondents showed a low level of dietary adherence. The researchers assume that this phenomenon can be explained by a lack of family understanding regarding the significance of support and motivation in the success of diet programs for individuals with diabetes mellitus. Another factor that may contribute is the limited time allocation of families to prepare meals independently, which potentially encourages individuals with diabetes mellitus to consume fast food more often. This consumption pattern can then lead to dysregulation of blood glucose levels (Islam et al., 2014).

In our opinion, family support, encompassing emotional, appreciative, instrumental, and informational dimensions, holds crucial significance in improving the prognosis for patients with Diabetes Mellitus (DM). This premise is rooted in the proven effectiveness of dietary interventions. Diet plays a fundamental role in diabetes management, especially in regulating blood glucose levels. Structured diet planning contributes to improving the eating patterns of individuals with diabetes, leading to optimized glucose homeostasis. The effectiveness of implementing a dietary plan is highly dependent on the level of adherence of DM patients to the established dietary protocols, which is reinforced by socio-emotional support from their families. A patient's perception of family support acts as an intrinsic motivator for adhering to dietary recommendations from healthcare professionals.

Family support has been shown to be a significant factor in patient recovery. The implementation of a diabetes mellitus diet is significantly influenced by the presence of family support. In this context, "support" is defined as an individual's perception of belonging and the belief that they are valued in everyday social interactions. This study empirically validates a significant correlation between family support and the level of diet adherence among

diabetes mellitus patients receiving treatment at RS Bhakti Asih Brebes.

Studies show that individuals who receive positive family support tend to have higher levels of optimism and better self-efficacy in facing life's challenges. Quality family support is an important predictor of optimism and effective problem-solving abilities in individuals (Maulinda, 2024).

Conclusion

There is a significant correlation between family support and the level of adherence to a diabetes mellitus diet among the population of DM patients treated at RS Bhakti Asih Brebes. The implication of these findings is the need to encourage effective communication between patients and their families. Constructive communication is expected to facilitate the creation of optimal family support, which in turn can improve dietary adherence among DM patient.

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