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The relationship between the quality of life diabetic patients with family function and social support at the Endocrine Polyclinic of the Dr. Zainoel Abidin Regional General Hospital (RSUDZA), Banda Aceh

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ABSTRACT

Diabetes mellitus (DM) is a chronic, non-communicable disease that affects patients quality of life (QoL), which can be influenced by family function and social support. This study aimed to evaluate the relationship between family function social support, and QoL of patients with DM at the Endocrine Polyclinic of RSUDZA Banda Aceh. This was an analytical observational study with a cross-sectional design, employing convenience sampling methods of 96 respondents and using self-report instruments. Data were analyzed using the Spearman test at a 95% confidence interval and α=0.05. The results showed that 86.2% of respondents had good family function, 72.9% had good social support, and 82.3% had a good QoL. There was a significant relationship between family function, social support, and quality of life (p<0.05). In conclusion improving family functioning and social support may enhance the QoL of patients with DM.

ABSTRAK

Diabetes mellitus (DM) adalah penyakit kronis tidak menular yang mempengaruhi kualitas hidup pasien (QoL), yang dapat dipengaruhi oleh peran keluarga dan dukungan sosial. Penelitian ini bertujuan untuk mengevaluasi hubungan antara peran keluarga dan dukungan sosial, dengan QoL pasien diabetes di Poliklinik Endokrin RSUDZA Banda Aceh. Penelitian ini merupakan penelitian observasional analitik dengan desain potong lintang, menggunakan metode pengambilan sampel praktis sebanyak 96 responden dan menggunakan instrumen laporan diri. Data dianalisis menggunakan uji Spearman pada *confidence interval* 95% dan α = 0,05. Hasil penelitian menunjukkan bahwa 86,2% responden memiliki peran keluarga yang baik, 72,9% memiliki dukungan sosial yang baik, dan 82,3% memiliki QoL yang baik. Terdapat hubungan signifikan antara peran keluarga, dukungan sosial, dan kualitas hidup (p < 0,05). Kesimpulan bahwa meningkatkan peran keluarga dan dukungan sosial dapat meningkatkan QoL pasien dengan DM.

Keywords:
Diabetes mellitus;
quality of life;
family support;
social support

INTRODUCTION

Diabetes mellitus (DM) is a metabolic disorder characterized by abnormally high blood glucose levels. It is the ninth leading cause of death worldwide, and the number of affected individuals is projected to reach 642 million by 2040.[1-3] According to the International Diabetes Federation, Indonesia has the second highest number of diabetes cases in the Western Pacific region, following China. Aceh ranks seventh in DM prevalence in Indonesia, with a rate of 1.7%.[3] Diabetes mellitus is a chronic condition requiring ongoing medical care to avoid complications, which include an increased risk of cardiovascular diseases

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such as heart attack and stroke.[4,5] These complications significantly impact the quality of life (QoL) of the affected patients.[5,2]

The World Health Organization (WHO) defines QoL as an individual's perception of their position in life within the context of the cultural and value systems in which they live, as well as their personal goals, expectations, and concerns.[3] The QoL of individuals with diabetes can be influenced by numerous factors, both positively and negatively. These factors include demographic characteristics (such as age, gender, and marital status), lifestyle, family dynamics, employment status, retirement, socioeconomic and educational levels, treatment type and duration, and coexisting health conditions.[4]

Quality of life can be assessed using two primary approaches. subjective and objective. The subjective approach, focuses on an individual's personal feelings and life satisfaction regardless of external judgments. An objective approach, evaluates the extent to which a person's life aligns with societal norms of material well-being, social status, and physical health.[5] Robust family functioning and social support are particularly beneficial for individuals with DM, as they facilitate better disease management and ultimately enhance QoL, especially during periods of illness when support is most crucial. Regular QoL assessments can also strengthen communication between patients and healthcare providers, helping to identify problems that are often overlooked. QoL research assists clinicians in predicting treatment outcomes, comparing the effects of various therapies on patient well-being and satisfaction, and addressing both medical and psychosocial aspects of care.[6] Moreover, QoL measures serve as important indicators of a patient's capacity to manage their condition. Improving health-related quality of life (HRQoL) may reduce the frequency of hospital visits and admissions, thereby lowering healthcare costs.[7]

Family function and social support can influence the QoL of patients with DM. Family function has been introduced as one of the main factors affecting the quality of life.[8] Family function is characterized by the capacity to manage stress, resolve conflicts, and address problems effectively, enabling the family to fulfil its roles, responsibilities, and functions. It involves collaboration among members, successful adherence to disciplinary practices, recognition of individual boundaries, and respect for rules and principles that collectively safeguard the integrity of the family system.[8] A functional family is one that effectively meets the needs of all its members while managing stress and various challenges that arise. Conversely, a family is deemed dysfunctional when characterized by maladaptive behaviors, disorganization, and frequent conflicts. Tension within the family may increase when caring for a member with a chronic illness. In such circumstances, all family members are expected to dedicate time to the ill individual, offer support in terms of resources, and help maintain their psychosocial well-being. This resource support may include time, role-sharing, financial assistance, and other external aid. Importantly, this support must be provided in a manner that does not disrupt the care of the ill member or impede the growth and development of healthy family members.[9]

Social support involves interpersonal exchanges aimed at others, manifested through attention, recognition, and assistance—whether informational or material—that help recipients feel cared for, valued, and acknowledged.[10] The concepts of social support and social networks can be understood from two perspectives: structural and functional. From a structural viewpoint, social support pertains to the presence and size of an individual's social network, the degree of their connectedness within this network, and the nature of social interactions between individuals such as types of

support provided and the frequency of contact.[11,12] Conversely, functional social support relates to an individual's perception and evaluation of the support they receive, reflecting how well integrated they feel within their social network; essentially, it addresses the quality or depth of these relationships. Therefore, the functional or qualitative dimension of social support emphasizes the cognitive appraisal of social connections, focusing on the content and accessibility of meaningful relationships with significant others.[11,12]

Aceh ranks seventh nationwide due to the comparatively high prevalence of DM (1.7%). The RSUDZA referral hospital recorded 1,254 diabetes-related patient visits and 133 new cases, with complications affecting approximately 15% of patients.[13] Understanding family function and social support is essential for managing DM and improving patients' QoL. However, research focusing on these aspects is limited in Aceh. This study aimed to gather information on family dynamics and social support to better manage patients withj DM and enhance their QoL at RSUDZA. Evaluating QoL is valuable for understanding how new treatments, such as insulin pumps, medications, and care practices, impact patients' lives.

MATERIAL AND METHODS

Subject and design

This study used an analytical observational study with a cross-sectional design, was conducted at the RSUDZA Endocrine Polyclinic from July to September 2024. A total of 96 individuals with type-2 DM (T2DM) who lived with their families were recruited through purposive sampling.

Protocol

Data were collected using validated instruments, including the WHOQOL-BREF to measure QoL and the Family APGAR to assess family function.[3,14] Social support was evaluated using a structured questionnaire adapted from previously validated measures. Demographic characteristics such as age, sex, education, and income were also gathered. Trained enumerators collected the data to maintain consistency, and potential bias was reduced through systematic double-checking. The study protocol was approved by the RSUDZA Research Ethics Committee (Ethical approval No.139-Etik-RSUZA/2024).

Data analysis

Data were presented as frequencies and percentages. Univariate analysis was conducted to describe quality of life, family functioning, and demographic characteristics, while the Spearman test was used to analyze the relationship between family functioning, social support, and quality of life. A p value <0.05 was considered significance.

RESULTS

Data from 96 patients with T2DM were collected including patient characteristics, family functioning, social support, and quality of life. Among the 96 patients, 52 (54.2%) were women, 36 (37.5%) patients had an age range of 46-55 y.o., 45 (46.9.5%) had a higher education, and 50 (52.1%) earned above the minimum wage (TABLE 1). Most patients with T2DM had good family functioning (85.7%). A significant relationship family function and QoL of the patients (p=0.031) (TABEL 2). TABLE 3. shows that 84.8% of patients with T2DM had good social support. A significant association between social support and QoL of patients with T2DM was observed in the Endocrine Polyclinic RSUDZA Banda Aceh (p=0.012).

TABLE 1. Frequency distribution of respondent characteristics at the Endocrine Polyclinic RSUDZA, Banda Aceh

Characteristics	Frequency (n=96)	Percentage (%)	p
Gender			
Male	44	45.8	<0.05
Female	52	54.2	
Age (y.o.)			
26-35	0	0	<0.05
36-45	7	7.3	
46-55	36	37.5	
56-65	29	30.2	
>65	24	25	
Education			
Primary school	22	22.9	<0.05
Intermediate school	29	30.2	
University	45	46.9	
Income			
> average minimum wage	50	52,1	<0.05
< average minimum wage	14	14.6	
No income	32	32.3	
QoL			
Good	74	77.1	<0.05
Bad	22	22.9	
Family function			
Good	70	72.9	0.031
Not good	16	16.7	
Bad	10	10.4	
Social support			
Good	79	82.3	0.012
Not good	14	14.6	
Bad	3	3.1	

Note: No income: housewive and, informal sectors.

TABLE 2. Association between family function and QoL among patients with T2DM at RSUDZA Banda Aceh.

Variable	QoL [n (%)]			p	r
	Good	Bad	Total		
Family function					
Good	60 (85.7)	10 (14.3)	70 (100)	0.031	0.341
Not good	9 (56.3)	7 (43.7)	16 (100)		
Bad	5 (50.0)	5 (50.0)	10 (100)		
Total	74 (77.1)	22 (22.9)	96 (100)		

QoL: good if score ≥ 50; bad if score <50. Social support: good if score 25-36; not good if score 13 – 24; bad if score 0 – 12.

TABLE 3. Association between social support and QoL in patients with T2DM at RSUDZA Banda Aceh.

Variable	QoL [n (%)]			p	r
	Good	Bad	Total		
Social support					
Good	67 (84.8)	12 (15.2)	79 (100)	0.012	0.393
Not good	7 (50.0)	7 (50.0)	14 (100)		
Bad	0 (0.0)	3 (100.0)	3 (100)		
Total	74 (77.1)	22 (22.9)	96 (100)		

Note: QoL: good if score ≥ 50; bad if score <50. Social support: good if score 25-36; not good if score 13 – 24; bad if score 0 – 12.

DISCUSSION

Respondent characteristics.

The gender distribution of patients with T2DM revealed that 54.2% of the patients were female. This finding aligns with previous studies conducted in Gorontolo District, North Sulawesi that reported a higher prevalence of T2DM among female participants (71.6%).[15] Similar gender-related trends were also observed in studies in Medan and Deli Tua, North Sumatra, as well as in Jakarta, Indonesia.[16-18] The disparity in T2DM risk between genders can be attributed to multiple factors, including anatomical and physiological differences, variations in lifestyle behaviors, disparities in treatment awareness, and differences in diagnostic capabilities across diseases.[16-18]

The age distribution in the current study showed that the majority of respondents were early elderly aged between 46 and 55 years. This pattern corresponds with studies in Padang, West Sumatra, Deli Tua, North Sumatra, and Jakarta, Indonesia where the older people tend to experience hyperglycemia or DM.[17-19] In older adults, the phenomenon is physiologically attributable to age-related organ functional decline, most notably the diminished efficiency of pancreatic β-cells that mediate insulin secretion.

The majority of patients with T2DM in this study (46.9%, n = 45) had higher educational levels. This result is consistent with findings from a study conducted in South Sulawesi, Indonesia, where 31.6% of respondents had higher education.[20] Conversely, other studies conducted in Deli Tua, North Sumatra and Jakarta reported that the majority of diabetic patients had only primary education.[17,18,21] Education is often associated with greater knowledge and experience, which may help older people with diabetes maintain their activity and creativity.

Although this study did not directly examine the relationship between education and QoL among patients with T2DM, declines in QoL are frequently influenced by multiple factors. Lower educational levels, for example, are often associated with difficulties in securing stable employment and adequate income, which may lead to stress that adversely affects diabetes-related QoL, particularly among patients with T2DM and complications. de Jesus Pereira *et al*.,[22] reported that patients with diabetic foot ulcers experience greater feelings of anger, frustration, depression, and helplessness compared to diabetic individuals without foot ulcers, which substantially impacts their overall QoL.

The majority of patients with T2DM in this study had incomes above the minimum wage (52.1%), a pattern similarly reported by Suwanti *et al*.,[21] in Madiun, East Java and by Tamornpark *et al*.,[23] in Thailand. However, higher household income is frequently linked to dietary patterns marked by greater intake of starchy carbohydrates and reduced physical activity, factors that may elevate diabetes risk despite better economic standing.

The relationship between family function and QoL.

A significant correlation between family function and the QoL among patients with T2DM was observed in this study. These findings are consistent with previous studies conducted in Bandung, West Java,[24] Bombana, Southeast Sulawesi,[25] and Medan, North Sumatra.[16] Strong family functioning is closely associated with greater patient independence and improved QoL; the more effective the family functioning, the higher the patient's autonomy and QoL. Previous studies have also indicated that optimal family functioning and adequate support contribute to better recovery outcomes and fewer diabetes-related complications. Notably, family support is a key determinant of patients' adherence to dietary regimens.[24,26]

Support for individuals with T2DM extends beyond fulfilling material needs; it encompasses emotional and psychological care, as well as a comprehensive understanding of the disease. Attention to the involvement and encouragement from all family members is critical for enhancing the patient's health status and overall well-being.[16,24]

The relationship between social support and QoL

Social support refers to interpersonal transactions directed toward others in the form of attention, appreciation, and assistance, whether informational or material, which serve to make the recipient feel cared for, valued, and acknowledged.[10] A significant relationship between social support and QoL of patients with T2DM was observed in this study ($p<0.05$). This is in line with previous studies conducted in Jakarta, and in Denpasar, Bali.[18,27]

Social support refers to the presence and size of an individual's social network, the degree of their connectedness, and the nature of social interactions between individuals such as types of support

provided and frequency of contact. In the other words, social support emphasizes the cognitive appraisal of social connections, focusing on the content and accessibility of meaningful relationships with significant others.[11,12]

Social support provided by family or friends, in the form of attention and the provision of beneficial advice regarding health and self-acceptance of T2DM, plays a significant role in adherence to dietary regimens and the overall health of patients, which in turn impacts patients' QoL. The study's power and generalizability were limited by convenience sampling. This study used a cross-sectional design without a control group, which makes it impossible to identify a causal relationship and weakly validates the study findings.

CONCLUSION

In conclusion, the majority of the patients with T2DM at RSUDZA are female, aged 46–55 years, with higher education and income above the minimum wage. A sufficient relationship was found between family function social support and QoL of the patients. These findings suggest that psychosocial factors play a critical role in diabetes management. Further studies are needed to explore targeted family and social interventions to improve patient well-being.

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