

Quality of Life of Patients with Diabetes Mellitus Based on Their Characteristics

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Abstrak

Kualitas hidup pasien dengan diabetes melitus (DM) menggambarkan derajat kesehatan dan keterbatasan yang perlu dievaluasi untuk mengatur pengobatan. Tujuan dari penelitian ini adalah untuk mengidentifikasi kualitas hidup berdasarkan karakteristik pasien. Penelitian ini merupakan penelitian deskriptif dengan pendekatan cross sectional. Besar sampel yang digunakan adalah 87 pasien dewasa dengan DM yang ditentukan melalui teknik purposive sampling. Penelitian ini dilaksanakan pada bulan Desember 2021 sampai dengan Januari 2022 di Puskesmas Bangkingan Surabaya. Data dikumpulkan dengan menggunakan kuesioner dan dianalisis dengan menggunakan analisis deskriptif. Hasil penelitian ini menunjukkan bahwa pasien dengan DM yang memiliki kualitas hidup tinggi adalah 50,6% dan 49,4% menunjukkan kualitas hidup rendah. Berdasarkan identifikasi data karakteristik pasien yang menggambarkan kualitas hidup tinggi adalah pasien lanjut usia dini dengan rentang usia 46-55 tahun (25,3%), berjenis kelamin perempuan (39,1%), berpendidikan SMA (18,4%), dan tidak bekerja (33,5%). Data lain yang diperoleh adalah pasien tidak memiliki riwayat keluarga (31,1%), lama DM 1-5 tahun (26,5%) dan mayoritas menggunakan obat antidiabetes tunggal. Berdasarkan data tersebut, pasien masih perlu mendapatkan edukasi berkelanjutan agar dapat mengelola diabetes. kadar glukosa darah dan dapat meningkatkan kualitas hidup. Ciri-ciri penderita DM dapat menjadi alarm yang menyadarkan penderita akan perubahan yang terjadi pada dirinya. Penderita yang mampu mengenali ciri-ciri pada dirinya akan mampu mempertahankan kualitas hidup mereka

Kata kunci: Diabetes Mellitus; Kualitas hidup; Usia; Obat Anti Diabetes

Abstract

The quality of life of patients with diabetes mellitus (DM) describes the degree of health and limitations that need to be evaluated to administer treatment. The purpose of this study was to identify quality of life based on patient characteristics. This research is descriptive with a cross-sectional approach. The sample size used was 87 adult patients with DM determined through purposive sampling techniques. This research was carried out from December 2021 to January 2022 at the Bangkingan Surabaya Health Center. Data was collected using questionnaires and analyzed using descriptive analysis. The results of this study showed that patients with DM who had a high quality of life were 50.6% and 49.4% showed a low quality of life. Based on the identification of patient characteristics data that describe the high quality of life are early elderly patients with an age range of 46-55 years (25.3%), female (39.1%), high school education (18.4%), and not working (33.5%). Other data obtained were patients with no family history (31.1%), duration of DM 1-5 years (26.5 and the majority using a single antidiabetic drug. Based on these data, patients still need to get continuous education to manage diabetes. blood glucose levels and can improve quality of life. The characteristics of DM sufferers can be an alarm that makes sufferers aware of the changes that occur in them. Patients who can recognize the characteristics in themselves will be able to maintain their quality of life.

Keywords: Diabetes Mellitus; Quality of life; Age; Antidiabetic medication

INTRODUCTION

Diabetes mellitus (DM) is a chronic disease that occurs when the body is unable to produce enough insulin or cannot use insulin effectively. Diabetes is an important public health problem, being one of the four priority non-communicable diseases targeted for follow-up by world leaders. The number of cases and prevalence of diabetes have been steadily increasing over the last few decades (World Health Organization, 2016; Kementerian Kesehatan RI, 2019). The prevalence of DM sufferers in Indonesia aged ≥ 15 years has increased by 2% in 2018 compared to 2013. The prevalence of DM patients in East Java Province occupies the 5th position, while Surabaya occupies the 3rd position after the City of Madiun and the City of Mojokerto ('Laporan Hasil Riset Kesehatan Dasar (Riskesdas) Indonesia tahun 2018', 2018; Kementerian Kesehatan RI, 2018). Data on the number of patients with DM at the Bangkingan Health Center in Surabaya in 2019 were 422 and in 2020 there were 448 people. The data shows an increase in DM cases of 0.94% (Dinas Kesehatan Kota Surabaya, 2020).

Risk factors that can trigger DM are genetics, ethnicity, family history of diabetes, older age, overweight and obesity, unhealthy diet, lack of physical activity and smoking can increase the risk (World Health Organization, 2016). DM disease, in the long term, can cause macrovascular and microvascular disorders such as cardiovascular disease, nephropathy, retinopathy, and neuropathy (American Diabetes Association *et al.*, 2013). Patients with type 2 DM must carry out regular medication related to controlling blood sugar levels to manage the body's metabolism proper function and to reduce the risk of complications. Complications that occur in DM patients will affect the patient's quality of life. Complications that occur in DM patients will affect the quality of life of patients. Another study showed that DM patients who were participants in the chronic disease control program) at Dander Health Center who had a fairly high complication rate had poor quality of life scores (Ferawati and Hadi Sulisty, 2020)

Quality of life is an individual's perception of values and concepts about achieving life expectancy. The quality of life of diabetes mellitus patients is very important because the quality of life describes the patient's perception of satisfaction with the degree of health and limitations that need to be evaluated to improve treatment (Rehabilitation Institute of Chicago, 2014). The characteristics of patients with diabetes can also be a contributing factor to their quality of life. Based on existing research, factors such as age, sex, education, socioeconomics, duration of DM, complications, type of treatment, and marital status can affect the quality of life of patients with DM (Chusmewati, 2016) (Yuswar, Rizkifani and Sutanto, 2022). Other studies that also show factors related to the quality of life of DM patients are age, sex, education, occupation, duration of DM, complications, and self-care behavior (Dika Erniantin, Martini, Ari Udiyono, 2018)(Chaidir, Wahyuni and Furkhani, 2017). Based on the researchers' observation at the Bangkingan Health Center, no data has been found regarding the description of the quality of life in

diabetes mellitus patients. However, data about the quality of life of DM patients is essential to help health professionals carry out promotive and preventive measures. The purpose of this study was to identify the quality of life of patients based on their characteristics.

METHODS

This research is a descriptive study with a cross-sectional approach. The sample used in this study were DM patients who came to the Bangkingan Health Center, Surabaya City, selected using a purposive sampling technique. The inclusion criteria set were patients who had a diagnosis of Type 2 DM, were aged more than 30 years, and were able to communicate well. The research instrument is a questionnaire. This questionnaire contains data about the characteristics of the respondents which include: Age, gender, education, occupation, family history, the length of contracting DM, and drugs used. Data on quality of life using DQoL questionnaires was modified from questionnaires developed by Burroughs *et al.* (2004) and Chusmewati (2016). The quality-of-life questionnaire consists of 15 questions and the raters use a Likert scale with 5 categories: never (1), rarely (2), sometimes (3), often (4), and always (5). Based on those categories, the lowest score is 15 and the highest is 75.

Prior to data collection, the respondents were provided with information about the purpose of the study and ensured that written informed consent was obtained and that patient participation was voluntary. In addition, patients are reassured that they can choose to remain anonymous and have the option of declining or not completing the survey questionnaire. Assessment of quality of life uses 2 categories; high quality of life, if the score \geq mean and low quality of life if the score $<$ mean. Data on quality of life was analyze based on the patients' characteristics using a cross-tabulation table. This research was conducted with ethics approval from the Ethics Institute of the Surabaya Ministry of Health Poltekkes No. EA/728/KEPK-Poltekkes_Sby/V.2021 and approval from the Surabaya Health Office for the selected Public Health Center used for data collection.

RESULTS

The research data presented in this study are data on characteristics including age, gender, education level, occupation, family history of DM, the duration of suffering from DM and antidiabetic medication; and the quality of life of patients with DM, and cross-tabulation between characteristics and quality of life. Data on characteristics consisted of age, gender, education, occupation, family history, duration of DM, and oral drug use. The age of DM patients is mostly (46%) in the early elderly range of 46-55 years, and most gender (66.7%) is female. The highest percentage (32.2%) for patient education is high school. 52.9% of DM patients in the study were non-employed. Other data related to DM duration showed that 46%

had a duration of DM of 1-5 years and 73.6% took one oral anti-diabetic drug (table 1). Data related to quality of life was described in Chart 1, where the number of patients with DM who have a high quality of life and who have a low quality of life do not differ significantly.

The results of cross-tabulation between the characteristics of patients with DM and the quality of life of patients can be seen in Chart 1. The characteristics of DM patients who showed high quality of life were patients with an age range of 46-55 years (25.3%), female gender (39.1%), high school education (18.4%), not working (33.5%), no family history (31.1%), duration of DM 1-5 years (26.5%), and 39.1% taking 1 oral antidiabetic drug (table 1).

Table 1 Characteristics of patients with DM (n = 87)

No	Characteristics	Total	
		f	%
1	Age (years)		
	36-45	4	4,6
	46-55	40	46
	56-65	35	40,2
	>65	8	9,2
2	Gender		
	Male	29	33,3
	Female	58	66,7
3	Education		
	Not finished Elementary School	17	19,6
	Elementary school	19	21,9
	Junior High School	15	17,2
	Senior High School	28	32,2
	College	8	9,1
4	Occupation		
	Not working	46	52,9
	employees	26	30,2
	Soldiers	6	6,8
	civil servant	1	1,1
	Others	9	7,8
5	Family History		
	Yes	33	37,9
	No	54	62,1
6	Duration of DM (years)		
	1-5	40	46
	6-10	37	42,5
	> 10	10	11,5
7	Antidiabetic oral		
	Monotherapy	64	73,6
	Combination	23	26,4

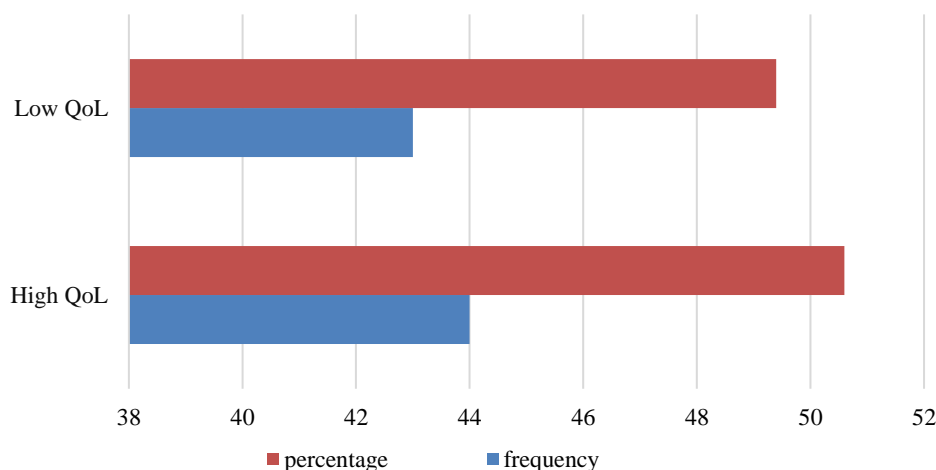


Chart 1. The QoL of patients with DM (n=87)

Table 2. Cross-tabulation between characteristics of patients with DM and quality of life

No	Characteristics	Quality of Life				Total	
		Low		High		f	%
		f	%	f	%	f	%
1	Age (years)						
	36-45	2	2,3	2	2,3	4	4,6
	46-55	18	20,7	22	25,3	40	46
	56-65	19	21,8	16	18,4	35	40,2
	>65	4	4,6	4	4,6	8	9,2
2	Gender						
	Male	19	21,8	10	11,5	29	33,3
	Female	24	27,6	34	39,1	58	66,7
3	Education						
	Not finished Elementary School	9	10,3	8	9,3	17	19,6
	Elementary school	9	10,3	10	11,5	19	21,9
	Junior High School	8	9,2	7	8,0	15	17,2
	Senior High School	12	13,8	16	18,4	28	32,2
	College	5	5,7	3	3,4	8	9,1
4	Occupation						
	Not working	17	19,4	29	33,5	46	52,9
	employees	18	20,9	8	9,3	26	30,2
	Soldiers	5	5,7	1	1,1	6	6,8
	civil servant	0	0	1	1,1	1	1,1
	Others	3	2,2	6	5,6	9	7,8
5	Family History						
	Yes	16	18,4	17	19,5	33	37,9
	No	27	31,0	27	31,1	54	62,1
6	Duration of DM (years)						
	1-5	17	19,4	23	26,5	40	46
	6-10	20	23,1	17	19,5	37	42,5
	> 10	6	6,9	4	4,6	10	11,5
7	Antidiabetic oral						
	Monotherapy	30	34,5	34	39,1	64	73,6
	Combination	13	14,9	10	11,5	23	26,4

DISCUSSION

This study has identified the quality of life of DM patients based on characteristics consisting of age, gender, education, occupation, family history, duration of DM, and drug use. The results of this study show almost the same percentage of data between patients with high and low quality of life. Based on these data DM patients still need high attention from health workers to improve their quality of life. The results of other studies show that the majority of DM patients have a high quality of life, which is equal to 44.7% (Chusmewati, 2016) and 66.3% have medium QoL (Umam, Solehati and Purnama, 2020). Patients with diabetes older than 56 years had a lower quality of life than the younger group because of most of the stressful life events they had gone through (Yuswar, Rizkifani and Sutanto, 2022). In contrast other studies show that the largest percentage of respondents who have high quality of life scores are DM patients at the age of the elderly or more than 60 years (Tamornpark *et al.*, 2022) (Chusmewati, 2016).-Other studies have shown that there is no relationship between age and quality of life in DM patients (Arda *et al.*, 2020). Age-related data as a factor affecting quality of life is still inconsistent. This is because the incidence of type 2 DM is mainly caused by family history and lifestyle of the patient before the patient was diagnosed with DM.

Quality of life by gender shows that most women have a high quality of life. This is because the number of DM patients in this study was mostly women. This study is in accordance with other studies that show that the sex of patients with DM with the highest number is female (Dika Erniantin, Martini, Ari Udiyono, 2018) (Joeliantina, 2021). Related to quality of life, there are studies that show that women have a better quality of life than men (Suwanti, Andarmoyo and Purwanti, 2021). The reason that can be proposed is that women have a tendency to be more obedient in managing their diseases, so that the quality of life becomes higher.

The largest percentage of education level in this study is high school and they have a high quality of life. Other studies have shown the same data as other studies, namely that most DM patients are female and have a high quality of life (Chusmewati, 2016). The majority of DM patients' education level is elementary school, where patients with this educational level have a low level of self-care (Joeliantina, dkk, 2021). Other research shows that there is a relationship between education level ($p=0.000$) and quality of life of DM patients (Erniantin, Martini, Udiyono, 2018). Therefore, DM patients with low education must get information that is easily understood by patients, so that patients can carry out self-care properly and regularly and can maintain their quality of life.

Based on the results of the study that almost half of DM patients who have a high quality of life are not working. Most of the patients who do not work are housewives. A person's occupation affects the level of physical activity. The physical activity carried out by housewives is likely to be less than people who have work activities outside the home. Light physical activity causes insulin to increase so

that blood sugar levels will decrease (Zainuddin, Utomo and Herlina, 2015). There is a different opinion from existing research, that housewives have a greater opportunity to participate in activities at posyandu or posbindu, so that housewives get more information to manage their illness. This study shows that most DM patients do not have a family history of DM. In addition, patients have the same quality of life, that is, some have a low quality of life and some have a high quality of life. The data from this study are in line with previous research which showed that most respondents did not have a genetic history of diabetes in their families and had no effect on blood glucose levels (Sovia, Damayantie and Nur, 2020). Blood glucose level is an indicator of quality of life that can be measured in DM patients. Patients with family history are expected to have a high quality of life because there is already experience in the family.

DM duration data in this study showed that most were more than 5 years. According to Chaidir's research in 2017, it was stated that Diabetes Mellitus is a chronic disease and requires long-term management, so DM patients need self-adjustment in carrying out activities in daily life (Chaidir, Wahyuni and Furkhani, 2017). Patients with DM who suffer less than 2 years tend not to be able to adapt well to the disease they are experiencing, so they cannot achieve a high quality of life. (Umam, Solehati and Purnama, 2020). In this study, the majority of DM patients had DM duration of more than 5 years. Patients already have experience in treating their disease and have been able to adapt.

Treatment of DM patients is one of the most important things for DM patients. Adherence in taking medication can maintain the patient's quality of life. This study did not explore patient adherence in taking the drug. Most of the patients taking these oral anti-diabetic drugs still have a low quality of life. DM patients as a chronic disease can choose other treatments such as herbs, in addition to medical drugs, but patients must consult with other health teams (Proboningsih *et al.*, 2020). To improve the management of chronic disease associated with CAM use, open dialogue between CAM practitioners and medical professionals can help improve decisions about the care of patients with various chronic conditions. (Joeliantina, Norontoko and Anugrahini, 2021).

CONCLUSION

This study is a basic-research that identifies the quality of life of patients based on patient characteristics. The results of this study showed that the number of patients with DM who had a high quality of life was no different from eating with those with a low quality of life. The characteristics of DM patients which include age, sex, education, occupation, family history, and duration of DM are indicators that can determine the quality of life of patients. This characteristic can be an alarm that makes the patient alert to the changes that occur in him. Further research related to behavioral patterns in managing the disease is needed to maintain quality of life. Based on these data, patients still need continuous education in order to manage their blood glucose levels and improve their quality of life.

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