

Original Article

Quality of Life among Patients with Type 2 Diabetic Mellitus in Out Patient Department, General Public Hospital, West Java

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Abstract

Background: Diabetic Mellitus is one of significant disease caused many complications and affected critical aspect of patients' lives, including physical, psychological, and social. These complications are debilitating and significantly impair their quality of life. However, little is known about the quality of life of patients with type 2 diabetic mellitus in West Java Province, Indonesia.

Objectives: To investigate the quality of life among patients with Type 2 diabetic mellitus.

Methods: A cross-sectional survey was conducted in a sample of 73 adults diabetes patients under the outpatient department of a general public hospital in West Java. The survey questionnaire included a demographic data and the WHO quality of life in brief version.

Results: of 73 patients with type 2 diabetic mellitus agreed to join this study, 76.7% were age over 45 years old, and 68% were female. The majority of the patients with type 2 diabetic mellitus were reported had a poor quality of life in 3 domains, physical domain (64.4%), psychological domain (53.4%), and environmental domain (52.1). The only social domain was reported good by 54.8% of patients with type 2 diabetic mellitus.

Conclusions: Poor quality of life among patients with type 2 diabetic mellitus was found in three major domains, namely physical, psychological, and environmental domains. This study indicates the importance of achieving better disease management to improve patient' quality of life.

Keywords: Type 2 diabetic mellitus, quality of life, WHOQOL-BREF

Introduction

Diabetes mellitus (DM) is a universal problem with increasing prevalence, and it is projected to affect 529 million people worldwide by 2035 (WHO, 2016). In Indonesia, diabetes is the sixth leading cause of the death, accounting for 12.9% of the total mortality in Indonesia in 2014 (Indonesian Ministry of Health, 2015). It's estimated that in 2025, Indonesia became the fifth highest of diabetic prevalence and predicted to be 12.4 million people diagnosed with DM (Indonesian Ministry of Health, 2015). West Java province indicated a second highest for prevalence of diabetes in Indonesia with total number adults diagnosed was 418.110 persons. Type 2 diabetes become the important type of DM.

Diabetes mellitus (DM) is a chronic metabolic disease that occurs due to the pancreas unable to produce enough insulin or the body cannot use the existing insulin efficiently (Indonesian Ministry of Health, 2014). Insulin hormone serves to regulate blood sugar levels; if the hormone insulin fails to work, then there is an increase in blood sugar levels. Clinical manifestations of diabetes mellitus include increased urinate (polyuria), arousal (polydipsia), and increased hunger (polyphagia) (Prince & Wilson, 2006). Clinically there are four types of diabetes: 1) type 1 diabetes (insulin-dependent DM), 2) type 2 diabetes mellitus (non-dependent on insulin / non-insulin DM), 3) DM associated with other conditions or syndromes, and 4) DM gestational (Smeltzer & Bare, 2004). The most commons

were typed two diabetic due to associated with lifestyle.

Diabetes has a significant impact on many aspects of patients' lives such as physical, psychological, and social. Diabetes is commonly associated with many short-term complications such as hypoglycemia, fatigue, and frequent infections and with long-term complications such as vision loss, ketoacidosis, kidney damage, cardiovascular disease, and nerve damage that can lead to impotence and gangrene with the risk of amputation (Hermawan, 2009). Individuals diagnosed with diabetes mellitus will experience changes in their daily activities. These changes include physical changes, lifestyle, and psychological conditions (Smeltzer & Bare, 2008). Patients require to overcome and adapt to diabetic management throughout life, including changes in dietary restrictions, exercise, and blood sugar control. If they cannot follow the diabetic management properly, it may lead to complications. Sudden changes in people with diabetes mellitus can cause changes in psychological conditions. The changes also included psychological aspect as reported by the previous study that patients with diabetes showed some negative psychological reactions such as rejection, anxiety, anger, and feel guilty (Darmono, 2007). Problems in psychological aspect can affect adherence in the treatment of diabetes and result in poor blood sugar control (Glasgow, Toobert, & Gillette, 2001). These complications and life changes are debilitating and greatly impair patients' quality of life (QoL)

QoL defined as a state of complete physical, mental and social well-being, and not merely the absence of disease and infirmity (WHO, 1993). According to the WHO (1993), QoL has six domains, including physical, environmental, social, psychological, level of independence, and spiritual which is narrowed down to four domains in the brief version of QoL measurement and excluded level of independence and spiritual added an environmental domain. Physical health domain refers to everything that can affect the ability of individuals to perform activities, while psychological domains are aspects related to the mental state of the individual. Moreover, a social domain defines the relationship between two or more individuals in which the individual's behavior will affect each other, change, or improve the behavior of other individuals. The

last is environment domain as the individual's residence, including the availability of a place to live to conduct all life activities. QoL is a final goal of the care goals (Mandagi 2012). Therefore, assessment of the quality of life is essential to do in a clinical setting, and routine practices are imperative.

Several studies conducted both in developing and developed countries reported that patients with DM have a poor quality of life. Another study conducted by Isa & colleagues (2006) showed that 20.7% of patients with DM had good QoL, 65.4% with good enough QoL, and 13.9% with poor quality of life. In Indonesia, a study was conducted to explore QoL among patients with DM but not specific for type 2 DM, found that 58% of patients had poor quality of life and 42% had good QoL. Research exploring QoL among type 2 DM was limited. Thus, the purpose of this study was to investigate the quality of life among patients with type 2 DM.

Methods

Study design and sample: A cross-sectional study design was used to investigate the quality of life among patients with type 2 DM in the outpatient department of a general public hospital in Cimahi, West Java. This hospital is one of the educated hospitals which supports research. This study was conducted from Mei 9th to 17th, 2017. The inclusion criteria were adults aged, diagnosed with type 2 DM, able to read and write in Bahasa, and willing to join this study. A consecutive sampling technique was used to select participants due to resource constraint. A sample size calculation was determined based on the estimation of the proportion. Until January 2017, there were 231 patients diagnosed with type 2 DM visited the outpatient department of a general public hospital in Cimahi.

Instrument: The World Health Organization Quality of Life (WHOQOL)-BREF questionnaire was used to measure QoL in patients with type 2 DM. The WHOQOL-BREF contains 26 questions version that was identified from the WHOQOL-100 questionnaire as a short version (Skevington, Lotfy, & O'Connell, 2004). It addresses four domains of quality of life: 1) 7 items for physical domain (activities of daily living, dependence on medical substances and medical aids, energy, and fatigue, mobility, pain, and discomfort, sleep and rest and work

capacity); 2) 6 items for psychological domain (bodily image and appearance, negative feelings, positive feelings, self-esteem, spirituality/religion/personal beliefs and thinking, learning, memory and concentration); 3) 3 items for social relationships domain (personal relationships, social support, and sexual activity); and 4) 8 questions for environment domain (financial resources, freedom, physical safety and security, health and social care: accessibility and quality, home environment, opportunities for acquiring new information and skills, participation in and opportunities for recreation/leisure activities, physical environment: pollution/noise/traffic/climate and transport) (WHOQOL, 1998). The score range using Likert-type rating for each item is 1 to 5. The WHOQOL addresses four domains, seven questions for a physical domain with a score range 7-35, six items for a psychological domain with a score range 6-30, three items for social relationships domain with a score range 3-15, eight items for environment domain with a score range 8-40.

Procedure and ethical consideration: Ethical clearance was obtained prior study from the study hospital. The researcher was collaborated with the head nurse in the outpatient department of the studied hospital to get information about eligible participants. Participants were asked to sign a consent form to be a participant. To

maintain the confidentiality of the participants, the researcher would not include the name of the participants, only using initials or symbols. Participants completed all questionnaires in a closed room to ensure the privacy. The researcher stayed during the process and participant can ask researcher about the unclear question. After participant complete all questionnaires, the participant returned the completed questionnaire to the researcher.

Results

Demographic characteristic of patients with type 2 DM: The majority of our respondents were female (68%), age over 45 years old (76.7%), with education level was a senior high school (52.1%). Duration of being diagnosed with type 2 DM was 5 to 10 years (51.1%). Above 32% of them were work as a business person with the monthly income on average above Rp 1,500,000.-. More than half of patients with type 2 DM in this study had macrovascular complications.

Quality of life of patients with type 2 DM: Table 2 described quality of life among patients with type 2 DM. The majority of participants (64.4) had a poor QoL in the physical domain, and above half were had poor in psychological and environmental. Conversely, the social domain showed good in more than 64% of patients with type 2 DM.

Table 1. Demographic characteristics of patients with type 2 DM (n=73)

Characteristics	n	%
Gender		
Male	27	37
Female	46	68
Age		
< 45 years old	17	23.3
≥ 45 years old	56	76.7
Education level		
Elementary school	9	12.3
Junior high school	16	21.9
Senior high school	38	52.1
University/Instituted	10	13.7
Years living with type 2 DM		
<5	22	30.1
5-10	38	51.1
≥10	12	17.8

Employment status		
Business	24	32.9
Farmer	8	11.0
Household	14	19.2
Private employee	4	5.5
Retired	11	15.1
Government employee	6	8.2
Factory labor		
Monthly income (IDR)		
< 1.500.000	29	39.7
≥1.500.000	44	60.3
Complications		
No	6	8.2
Microvascular	26	35.5
Macrovascular	41	52.2

Tabel 2. QoL domain among patients with type 2 DM(n = 73)

QoL domain	n	%
Physical domain		
Good	16	21.9
Enough	10	13.7
Poor	47	64.4
Psychological domain		
Good	16	21.9
Enough	18	24.7
Poor	39	53.4
Social domain		
Good	40	54.8
Enough	17	23.3
Poor	16	21.9
Environmental domain		
Good	16	21.9
Enough	19	26.0
Poor	38	52.1

Discussion

The physical domain included daily activities, dependence on drugs, energy, and fatigue, pain, and discomfort, mobility, sleep or rest and a person's working capacity of patients with type 2 DM. We found that the physical domain was the worse domain of QoL experienced by many patients with type 2 DM. Physical health determines the quality of life of a person, the physical condition of a person will vary according to the level of illness and other factors.

One of the factors affected the physical domain is age. The majority of respondent were over 45 years old, increased age follows by the decline in body function. Age was closely related to rising blood glucose levels and impaired glucose tolerance. It's certainly can disrupt the daily activities, energy use and mobility of patients with type 2 DM.

In addition to age, this type of work affects a person's physical health. In this study, the majority of participants were worked as a

business person (32.9%). According to Smeltzer and Bare (2008), exercise is essential in the management of diabetes mellitus, especially the work or specific activities of patients with type 2 DM because it can lower blood glucose and reduced cardiovascular risk. Increased mortality and morbidity of diabetes mellitus patients caused by various complications, including macrovascular and microvascular. In this study, most of the respondents had macrovascular complications of 56.2%. This complication can reduce physical health such as a person's ability to perform activities or work. Based on the condition of patients with type 2 DM, diabetes often disrupts activity and sleep due to insulin deficiency that disrupts metabolism process. As results, patients often feel fatigue, weakness, and feeling lethargic which affects their activity to the fullest. Glucosuria is also a common symptom that affects the quality of rest and sleep of patients with type 2 DM. The psychological domain health is the condition of one's feelings and soul within itself, including the individual's feelings toward himself, negative and positive feelings, spiritual, ability to think and ability in concentration. Psychological health affects the quality of life and provides various reactions for the individual. Study finding found that most respondents 53.4% were in poor quality of life. In people with diabetes mellitus with a decrease in physical function indirectly affect the psychological state such as feelings of anxiety, depression, and frustration. In the psychological health domain, diabetes mellitus patients have negative feelings about themselves. These feelings include worry about his health condition, saturated against continuous treatment, fear of complications that accompany the patient. A disruption in daily function causes the negative perception of diabetes patients. The poor of psychological domains may associate with longer duration living with type 2 DM, which majority of our participants were above five years diagnosed with DM. The period diagnosed with type 2 DM may result in the feeling of full treatment and long-suffering to their health condition. Patients do the routine therapy at least once a month, which may substantially affect the mood of the patient or anxiety, both short and long-term. Yusra (2010) emphasized that duration of living with type 2 DM associated with anxiety levels and resulted in decreased quality of life. Another factor may influence poor in the psychological domain was

education level, which majority of our participants (52.1%) graduated from senior high school. Education refers to the ability to absorb the information received and the ability to develop coping in the face of stressors. The level of patient education plays a role in the patient's ability to obtain, understand, and apply the information about the management of DM. Sufficient knowledge may reduce psychological problems. Otherwise, inadequate knowledge will cause the patient cannot use the information so that patients are less able to perceive the problem correctly so that often appear psychological health problems. Social domain associated with social activities involving relationships to themselves and the social, social support and sexual activity. The result of this study found that most respondents 54.8% had a good quality of life in the social domain. Factors that can affect social relationships were age and duration diagnosed with type 2 DM. A person with age over 45 years old more likely to have a longer duration of living with type 2 DM for more than five years and had a high score of social domain. The longer period of living with type 2 DM associated with the higher knowledge and experience in the treatment and management of DM. Patients with diabetes mellitus over 45 years old tend to have more experiences both happy and sad about their illness. In the domain of social relationships, diabetes mellitus patients feel satisfaction for the support received from family, friends, or relatives. A person with a chronic illness such as diabetes mellitus desperately needs the help from mother people or the environment; it will be useful to improve the spirit and motivation of patients to follow adherently the management and treatment of the disease. The presence of the closest people who always accompany and provide support when patients experienced problems was related to the improvement of health conditions because patients feel optimistic in their life. This is in line with the research conducted by Yusra (2010) stated that someone who has a good social relationship and received support would impact on the quality of life. The environmental domain is an assessment of the activities of daily activities in the home, outdoors and physical environment. It's included financial resources, freedom, security and physical safety, the urgency of getting new information and transportation. The result of univariate analysis of quality of life-based on the domain of

environmental sound that most respondents 52.1% were in the category of low quality of life. Factors affecting the domain of the environment is income, it is known that most respondents (60.3%) have an average monthly income more than Rp. 1,500,000,00. A higher income associated with higher need and ability of a person in access better health services for treatment management even prevention. Also, patients with type 2 DM experienced less satisfied with the access to health services provided by the hospital especially long waiting for each time visited the clinic. According to Rahmat (2010), the good the environment associated with improvement of the quality of life.

Conclusion: In conclusion, the majority of patients with type 2 DM were experienced poor quality of life in the physical, psychological, and environmental domain. The social domain was the only domain that patients with type 2 DM satisfied with. Further efforts toward improvement of QoL for patients with type 2 DM is warranted, mainly promote self-care management for DM. Future research exploring different of QoL among type 1 and type 2 DM and factors associated with poor or better QoL may need to understand more comprehensively about QoL in Patients with DM.

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