

# Analysis of the Quality of Life of Type 2 Diabetes Mellitus Patients Undergoing Outpatient Care at Griya Rasika Yogyakarta

Chotijatun Nasriyah<sup>1</sup>, Amanda Marselin<sup>2</sup>

<sup>1</sup>Pharmacy, Notokusumo College of Health Sciences, Yogyakarta, Indonesia

<sup>2</sup>Pharmacy, Notokusumo College of Health Sciences, Yogyakarta, Indonesia

Email address: chotijatunnasriyah(at)gmail.com

**Abstract**— *Diabetes Mellitus (DM) is a chronic metabolic disorder with multiple etiologies as a result of insulin deficiency. Diabetes mellitus has a fairly high prevalence. The results of Riskesdas 2018, DM in Indonesia aged 15 years is 2%, an increase from the prevalence in 2013 which was 1.5%. DM has a poor prognosis, but if the glucose levels can be controlled properly, complications can be prevented. Another factor is the quality of life of a person affected by DM which was poor, causing metabolic problems in the body and having an impact on the emergence of complications. The purpose of this study was to examine the quality of life of type 2 DM patients in Griya Rasika for the period of July 2021. This type of research was descriptive, taking total sampling. Measurement of quality of life using the SF-36 questionnaire. Data analysis with SPSS obtained 26 respondents with the results of an average score of good quality of life on social function that is  $58.65 \pm 23.21$ . The average score for poor quality of life is physical role which is  $20.19 \pm 33.93$*

**Keyword**— *quality of life, diabetes mellitus, SF-36.*

## I. INTRODUCTION

Diabetes mellitus (DM) is a disease or chronic metabolic disorder with multiple etiologies characterized by an increase in blood sugar levels accompanied by disturbances in carbohydrate, lipid and protein metabolism as a result of impaired or deficient insulin production by the beta cells of Langerhans in the pancreas, or caused by the body's cells are less responsive to insulin.<sup>1</sup> The World Health Organization or WHO predicts that in 2004 the number of people with diabetes mellitus in Indonesia will increase from 8.4 million people in 2000, to around 21.3 million people in 2030. International Diabetes Federation (IDF) also predicts an increase in people with diabetes mellitus from 7 million in 2009 to 12 million in 2030. Based on the report, it shows that there will be an increase in the number of people with diabetes mellitus in Indonesia by 2-3 times in 2030.<sup>2</sup>

DM can have an impact in the form of blood vessel disorders, the nervous system problems and can affect a person's quality of life.<sup>3</sup> Quality of life such as social and psychological factors can be affected as a result of lifelong treatment and strict diet. Measurement of the value of the quality of life of a person who has diabetes mellitus is a subjective assessment of each individual.<sup>4</sup> The measurement of the quality of life includes physical health, psychological status, level of freedom, social relationships and the environment in which they are located.

WHO defines health as a state in which there is not only free from diseases, but also a balance between physical, mental, social and economic functions. A high quality of life will increase work productivity, so that targets can be met.<sup>5</sup> The Short Form Health Survey 36 (SF-36) questionnaire is one of the international standards used to measure health-related quality of life. The SF-36 itself is a quality of life measurement tool made by RAND Health Care in California in an English version. However, the questionnaire has been widely used for research in the Indonesian version as in the study by Melani (2016) on quality of life in hypertension patients.<sup>6,7</sup> The instrument consists of 36 questions divided into 8 scales related to health function and well-being scores (function physical limitations, emotional control, energy-fatigue, mental health, social function, body pain, and general health), health conditions and quality of life of patients in chronic disease management.

Some areas in Yogyakarta Province such as Yogyakarta City and Wonosari implement the Community Activity Restriction Enforcement (PPKM). Therefore, the role of health workers is needed to improve the quality of life for people with diabetes mellitus, especially in the Yogyakarta area because it is one important factor of a successful therapy. Thus, researchers are interested in knowing the quality of life of people with diabetes mellitus who undergo outpatient treatment at Griya Rasika Yogyakarta, so that it can help preventing complications.

## II. METHOD

This research was conducted at Griya Rasika Yogyakarta in July 2021. The research method is descriptive, and the samples of the study is type 2 diabetes mellitus patients who were treated at Griya Rasika Yogyakarta. The sampling was carried out with a total 26 respondents, then the data were analyzed by SPSS. The purpose of this study was to determine the quality of life of diabetes mellitus patients undergoing outpatient treatment at Griya Rasika Yogyakarta. The inclusion criteria of this study were patients with type 2 diabetes mellitus who underwent outpatient treatment, while the exclusion criteria of this study were respondents who were not willing to fill out the informed consent form and data collection questionnaire. The research procedure was carried out by giving an informed consent form to the respondents

before being given a quality of life questionnaire. Measurement of the quality of life of respondents using the SF-36 questionnaire which has been validated. It takes only 10 to 15 minutes for respondents to fill out the questionnaire form.

III. RESULT

The characteristics of respondents with type 2 diabetes mellitus undergoing outpatient treatment at the Griya Rasika clinic Yogyakarta can be seen in table I.

TABLE I. Characteristics of Research Respondents (n=26)

No.	Characteristics	Total (%)	Mean ± SD
1	<b>Gender</b>		
	Male	13 (50,0)	1,5±0,5
	Female	13 (50,0)	
2	<b>Age</b>		
	< 40 years	1 (3,8)	2,5±0,8
	40 – 59 years	14 (53,8)	
	60 – 75 years	7 (26,9)	
	> 75 years	4 (15,4)	
3	<b>DM duration</b>		
	< 5 years	7 (26,9)	1,7±0,5
	> 5 years	19 (73,1)	
4	<b>Education</b>		
	Elementary	10 (38,5)	2,3±1,3
	Junior High School	4 (15,4)	
	Senior High School	5 (19,2)	
	Undergraduate	7 (26,9)	

The quality of life scores for 26 respondents were calculated by converting the scores on the questionnaire questions according to each domain with a score between 0-100. The results of the average quality of life score can be seen in table II.

TABLE II. The Quality of Life Score

No.	Domain	Mean±SD
1	Physical Function	46,92±30,33
	Physical Role	20,19±33,93
	Pain	47,85±19,07
	General Health	54,08±10,21
	Vitality	49,23±16,59
	Social Function	58,65±23,21
	Emotional Role	21,77±37,65
	Mental Health	55,08±16,64

IV. DISCUSSION

The results of table I show that amount of the subjects (Male and Female) is the same which is 13 respondents (50%) with a total of 26 (100%). Theoretically, men have a greater risk of developing diabetes mellitus (DM) than women, but obesity is a strong risk factor for type 2 DM, and is more common in women after diagnosis. The results of this study indicate the same percentage between male and female; this can be caused by the obesity factor in female more than men.<sup>9</sup> Based on the age, the 14 respondents were between 40-59 years or (53.8%) while 7 respondents were between 60-75 years or (26.9%), and 4 respondents were more than 75 years

or (15.4%) and 1 respondent was less than 40 years or (3.8%). Based on the existing theory, the risk factor for type 2 diabetes mellitus is experienced by the age of 45 years or older.<sup>10</sup> The age is one of the risk factors that can affect the incidence of diabetes, because increasing age will increase impaired glucose tolerance. Over the age of 30 years, blood glucose levels will rise 1-2mg/dl/year when fasting and increase by 5-13mg/dl at 2 hours post prandial.<sup>11</sup> In line with research by Ningtyas (2013) regarding the quality of life of patients with DM 2 in In the Pasuruan area, the majority of patients aged between 40-59 were 18 (58.07%) and a study by Salcha (2015) on the quality of life of DM 2 patients, the majority of patients aged between 46-65 years were 26 (59.1%).<sup>12,13</sup>

The results of the study of the DM duration was that 7 (26.9%) respondents experienced DM for less than 5 years, while the duration that was more than 5 years was 19 (73.1%). This is related to the results of the quality of life scores in this study obtained with low results. In line with the research by Saputro (2008) that long suffering from diabetes mellitus can affect the patient's quality of life. Yusra (2011) states that the duration of suffering from DM can affect the patient's confidence in carrying out treatment which can result in a decrease in quality of life.<sup>14,15</sup>

The highest education level in this study was elementary schools, namely 10 (38.5%) respondents. The level of undergraduate education was 7 (26.9%) respondents, the education level of high school and junior high school respectively showed the number of 5 (19.2%) and 4 (15.4%) respondents. Diabetes mellitus (DM) can be influenced by the level of education. Having a high level of education will certainly be different from someone with low education in terms of knowledge, especially in the health sector. With a broad knowledge of health, a person will have a good awareness and understanding to maintain his health. The higher the level of education will be proportional to the awareness to live healthy and pay attention to diet and lifestyle. Someone who has low education has a risk of not understanding and paying attention to lifestyle and diet and what to do in preventing diabetes mellitus.

Table II on the results of the quality of life scores of DM patients in this study had a low average quality of life. This quality of life score was measured using a validated SF-36 questionnaire. The results of the questionnaire validation in each domain obtained valid results by showing the calculated r value is greater than the r table (0.388). While the results of the reliability test of this questionnaire obtained reliable results with the value of the Cronbach Alpha determination of 0.946, which means that the reliability of the questionnaire is very high. So, according to the results of the validity and reliability tests for the SF-36 questionnaire used in this study, it is declared valid and reliable so that it can be used to measure the quality of life of DM patients. The result of the high quality of life score in this study was that social function obtained an average value of 58.65±23.21 and the lowest quality of life score was physical role with a score of 20.19±33.93. For mental health and general health scores, each has a score of 55.08±16.64 and 54.08±10.21. Meanwhile, for vitality or energy, a score of 49.23±16.59 was obtained; for

pain has a score of  $47.85 \pm 19.07$ ; physical function obtained a score of  $46.92 \pm 30.33$  and a score of  $21.77 \pm 37.65$  for the role of emotion. The SF-36 questionnaire resulted in an average  $\pm$ SD normative value of  $50 \pm 10$  for each quality of life domain. A score above 50 means a good quality of life, while a score below 50 means a poor quality of life. This study had good quality of life scores on social functioning and poor quality of life scores on physical roles. The quality of life component itself can be divided into two, namely the physical component and the mental component. Physical components include physical functions, physical roles, pain and general health, while mental components include vitality/energy, social functions, emotional roles and mental health. The low physical role in the quality of life of DM patients can be caused by age. Increasing age can lead to a decline in both cognitive and physical function in the elderly. In this study, the majority of respondents were over the age of 40 years, according to the Ministry of Health, the age range of 46 to 55 years was the category of the early elderly who had a lower quality of life when compared to the productive age.<sup>17</sup>

The social role or mental component of this study tends to be higher than other functions, in line with research by Bolhke (2008), which states that most respondents have a high mental component score.<sup>18</sup> According to Rahman (2013), the mental component can be influenced by adaptation and motivation factors. This adaptation factor where the patient has started to accept the reality of the current condition and with positive thoughts on the patient himself will also give the biggest impact on the adaptation process.

#### REFERENCES

- [1] World Health Organization (WHO), 1999. Department of Noncommunicable Disease Surveillance Geneva. Definition, Diagnosis and Classification of Diabetes Mellitus and its Complications. Report of a WHO Consultation Part 1: *Diagnosis and Classification of Diabetes Mellitus*. Accessed : 08 Agustus 2021, <https://apps.who.int/iris/handle/10665/66040>
- [2] Perkumpulan Endokrinologi Indonesia (PERKENI), 2011. Konsensus pengendalian dan pencegahan diabetes mellitus Tipe 2 di Indonesia. Jakarta : PB Perkeni
- [3] Castro S.M de Oliveira, Coutinho R.M., 2011. Quality of life of patients with hypertension. Journal of School Nursing, University Paulista, Campinas-SP. Brazil
- [4] Wahyuni Y., Nursiswati, Anna A., 2014. Kualitas Hidup berdasarkan Karakteristik Pasien Diabetes Mellitus Tipe 2, Jurnal Keperawatan Padjadjaran, Vol. 2, No. 1, April 2014
- [5] Pusat Komunikasi dan Informasi Publik Universitas Airlangga, 2021. *Bagaimana Mengukur Kualitas Hidup Tenaga Kesehatan Selama Bekerja di Masa Pandemi COVID-19*, dari : <http://news.unair.ac.id/>, diakses tanggal 28 Juli 2021
- [6] RAND Health Care, *36-Item Short Form Survey (SF-36)*, dari : [https://www.rand.org/health-care/surveys\\_tools/mos/36-item-short-form.html](https://www.rand.org/health-care/surveys_tools/mos/36-item-short-form.html), diakses: tanggal 14 Agustus 2021
- [7] Melani F. 2016. *Evaluasi Kualitas Hidup Responden Hipertensi Menggunakan Instrumen SF-36*: Kajian Faktor Usia dan Tingkat Penghasilan di Kecamatan Kalasan, Fakultas Farmasi USD, Yogyakarta
- [8] Putri D, Handayani S, Ekayafita Z, Lestari D., 2021. The Indonesian Version of SF-36 Questionnaire: Validity and Reliability Testing in Indonesian Healthcare Workers Who Handle Infectious Diseases, *Indian Journal of Forensic Medicine & Toxicology*, April-June 2021, Vol. 15, No. 2
- [9] Pinchevsky Y., Butkow N., Raal J.F., Chirwa T., Rothberg A., 2020. Demographic and Clinical Factors Associated with Development of Type 2 Diabetes: A Review of the Literature, *International Journal of General Medicine*, 2020:13 121–129
- [10] Center for Disease Control and Prevention (CDC), 2021. *Diabetes Risk Factors*, dari : <https://www.cdc.gov/diabetes/basics/risk-factors.html>, diakses tanggal 13 Agustus 2021
- [11] Mutmainah N., Ayubi M., Widagdo A., 2020. Kepatuhan dan Kualitas Hidup Pasien Diabetes Mellitus Tipe 2 di Rumah Sakit di Jawa Tengah, *Pharmacon: Jurnal Farmasi Indonesia*, Vol. 17, No. 2, (2020). e-ISSN 2685-5062
- [12] Ningtyas W., Wahyudi P., Prasetyowati I., 2013. *Analisis Kualitas Hidup Pasien Diabetes Mellitus Tipe II di RSUD Bangil Kabupaten Pasuruan*, Fakultas Kesehatan Masyarakat, Universitas Jember
- [13] Salcha A., 2015. Analisis Kualitas Hidup Pasien Diabetes Mellitus Tipe 2 di RSUD Labuang Baji RS Ibnu Sina Kota Makasar tahun 2015, *Tesis*, Universitas Hasanuddin Makasar
- [14] Saputro, 2008. Evaluasi Kualitas Hidup Pasien Diabetes Mellitus Tipe 2 Rawat Jalan di RSUD Wirosaban Yogyakarta, *Skripsi*, Yogyakarta: Universitas Islam Indonesia
- [15] Yusra A., 2011. Hubungan Antara Dukungan Keluarga Dengan Kualitas Hidup Pasien Diabetes Mellitus Tipe 2 di Poliklinik Penyakit Dalam Rumah Sakit Umum Pusat Fatmawati Jakarta, *Tesis*, Depok: Fakultas Ilmu Keperawatan Universitas Indonesia
- [16] Pahlawati A., Nugroho S.P., 2019. *Hubungan Tingkat Pendidikan dan Usia dengan Kejadian Diabetes Mellitus di Wilayah Kerja Puskesmas Palaran Kota Samarinda*, Universitas Muhammadiyah Kalimantan Timur, Samarinda
- [17] Ningrum C., Hidayati T., Rahmah, 2016. Kualitas Hidup Pasien Urolithiasis Pada Komponen Fisik dan Komponen Mental Dengan Instrumen SF-36, *Jurnal Care*, Vol. 4, No.3, Tahun 2016
- [18] Bolhke M., Nunes D.L., 2008. Predictors of Quality of Life Among Patients on Dialysis in Southern Brazil, *Sao Paulo Med J*. 126(5):252-6
- [19] Rahman A.R., Rudiansyah M., Triawanti. 2013. *Hubungan Antara Adekuasi Hemodialisis dan Kualitas Hidup Pasien di RSUD Ulin Banjarmasin*, Berkala Kedokteran, Vol.9. No.2: 151- 160