

# Stress, Quality of Life, and Health Seeking Behavior Among Type 2 Diabetes Mellitus in Wangon, Banyumas, Indonesia

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**Abstract**—Diabetes mellitus is a great challenge against health system in many developing countries, including Indonesia. The continuous changing lifestyle and a long-term treatment causes new problem for diabetes patients, such as stress and reducing quality of life. On the other hand, some cases of diabetes mellitus are late diagnosed or undiagnosed. Thus, the signs and symptoms of those who are undiagnosed are commonly worse than those who are early diagnosed. This worse symptom may impact to stress and quality of life. Thus, health-seeking behavior may be essential in improving quality of life and declining the stress level. This study was conducted to examine stress, quality of life and health seeking behavior among type 2 diabetes mellitus in Wangon, Banyumas, Central Java, using descriptive analytical approach and involving 85 type 2 diabetes mellitus patients who were joining regular community health service. These patients were selected using purposive sampling method. Socio-demographic, diabetes distress scale, WHO Quality of Life and Health Seeking Behavior questionnaires were used. Descriptive and bivariate analysis were conducted. This study reported that almost half of the respondent had mild stress (49.4%). While most of the respondents had moderate quality of life (54.1%) and most of respondents went to formal health facilities when they had health-related issues (69.4%). There was a significant correlation between stress and quality of life with strong negative correlation approach ( $p:0.0001$ ,  $cc: -0.559$ , *spearman rank test*). However, there was no association between stress and health seeking behavior with very weak correlation ( $p:0.429$ ,  $cc:0.087$ , *spearman rank test*). Diabetes mellitus patients could have stress related to disease and treatment which lead to poor quality of life. However, there was no correlation between health seeking behavior to both stress and quality of life among type 2 diabetes patients.

**Keywords:** *type 2 diabetes mellitus, stress, quality of life, health seeking behavior*

## I. INTRODUCTION

Diabetes mellitus is one of non-communicable disease which has an immense number of prevalence and incident worldwide [1]. A report showed that the

prevalence of people with diabetes mellitus will increase from 415 million in 2015 to 642 million in 2040, in which the increase mostly dominated by people who live in middle to low income country in Asia [1]. In Indonesia, the National Health Research report highlighted the raise number of diabetes mellitus incident in the last five years about 1.6% nationally [2]. Similarly, the incident of diabetes mellitus in most province in Indonesia also increased. In Central Java area, there was a 0.5% increase number of people with diabetes mellitus from 2013 to 2018. While in the Banyumas regency, the report showed about 1.846 cases of diabetes mellitus with Wangon region have the highest number of diabetes mellitus patients [2].

Furthermore, diabetes mellitus is a disease which can lead to several complications, need a long-term medication, and require a healthy lifestyle change that may influence the patients' stress level [3]. Moreover, the complication of diabetes mellitus, its medication and stress or depression among diabetes mellitus patients can affect their quality of life as previous study found that age, gender, complication, stress, depression and anxiety significantly impact to diabetes mellitus patients' quality of life [4]. However, a research emphasized that participation of diabetes patients during the treatment would increase the cost's efficiency and improve the quality of life [5]. This participation can be initiated by enhancing health seeking behavior among patients. This behavior included early identification of sign and symptom and appearance on health care facility [6]. Therefore, this study aimed to investigate how stress, quality of life and health seeking behavior will influence each other in the context of type 2 diabetes mellitus patients care.

## II. METHOD

This study involved 85 type 2 diabetes mellitus patients in Wangon, Banyumas, Indonesia using purposive sampling technique. Participants in this study were recruited during the annual community health service held by government

community health center institution of Wangon 1. All patients with diabetes mellitus with no complication related to disease were able to participate in this research. This study conducted as an analytical correlation research which examined the variables using socio-demographic, diabetes distress scale, WHO quality of life, and health seeking behavior questionnaires. Respondents in this study should be following the treatment of diabetes mellitus and have no complication related to the disease. This study tried to evaluate the patients' stress, quality of life and health seeking behavior in the early stage of diseases. Chi-square tests are utilized as the analysis.

**III. RESULTS AND DISCUSSION**

Results of this study can be found in the tables below:

Table 1. The Characteristic of type 2 diabetes mellitus patients in Wangon, Banyumas, Indonesia (n=85)

Characteristic	f	%
<b>Age</b>		
35-44	11	12.9
45-54	30	35.3
55-64	34	40.0
65-74	10	11.8
35-44	11	12.9
<b>Gender</b>		
Man	37	43.5
Woman	48	56.5
<b>Education</b>		
Never school	1	1.2
Primary school	62	72.9
High school	20	23.5
Universities	2	2.4
<b>Occupation</b>		
Not working	1	1.2
Labour	21	24.7
Farmer	18	21.2
Entrepreneur	9	10.6
Private	4	4.7
Civil servant	3	3.5
Housewife	29	34.1

Table 1 showed that most of participants in this study were middle-aged to elderly patients (40%) with more than half percentage are woman (56.5%) who worked as housewife

(34.1%). While, most of the participants had primary education (72.9%) and mostly work as housewife (34.1%).

Table 2. Health-seeking behavior among type 2 diabetes mellitus patients in Wangon, Banyumas, Indonesia (n=85)

Health seeking behavior against health problem	f	%
self care	2	2.4
consultation to formal health facilities	24	28.2
combination of consultation to formal health facilities and healthcare clinic	35	41.2
combination of self-care, consultation to formal health facilities and consultation to healthcare clinic	24	28.2
TOTAL	85	100

Furthermore, on table 2 it is found that most of the participants in this study managed their health problem with visiting both formal and non-formal healthcare facilities (41.2%). The non-formal healthcare facilities refer to the independent practice of general practitioner, nurse, midwife and herb or traditional medicine, while the formal one means hospital and public health care facilities. This finding is different with previous study held in Yogyakarta, Indonesia which most of patients in the study chose formal facilities to reduce their symptom [7]. It may occur due to the participants' economical background of Yogyakarta in which most of them had middle to high income while in this study most of the respondent have low to middle income background. That analysis was in a line with a study revealed that socioeconomic factor significantly influenced health seeking behavior of diabetes mellitus patients, particularly age, occupation, marital status and education [5,7,8].

Table 3. The frequency of stress among type 2 diabetes mellitus patients in Wangon, Banyumas, Indonesia (n=85)

No	Stress level	f	%
1	Mild stress	38	44,7
2	Moderate stress	42	49,4
3	Severe stress	5	5,9
TOTAL		85	100

This study reported that most of the patients had moderate stress level (49.4%). It is accepted that chronic disease patients may have a higher level of stress due to the disease's management or treatment [9] (Magfirah, 2015). The type 2 diabetes mellitus patients have to generate a continuous healthy lifestyle such as appropriate diet, exercises, medicine consumption and blood glucose management during their lifespan which can lead to stress or depression. Moreover, the

fear of possible complication of the disease would increase the risk of stress, anxiety or depression occurrence [9]. Furthermore, the occurrence of stress would cause the increase production of epinephrine which affects gluconeogenesis process and makes more glucose production in the blood [10].

Table 4. The quality of life among type 2 diabetes mellitus patients in Wangon, Banyumas, Indonesia (n=85)

No	Quality of Life	f	%
1	Poor	0	0
2	Moderate	46	54,1
3	High	39	45,9
TOTAL		85	100

This study showed that more than half participants have moderate level quality of life (54%). Some factors can relate to this finding. The diabetes mellitus treatment and its management require a long-term modification of healthy lifestyle, this usually makes the patients feel hopeless with the treatment program [11]. Similarly, another study highlighted the decrease quality of life among diabetes mellitus patients is mostly because of the physical effect of the disease, long-term treatment and complication that may occur [12].

While bivariate analysis showed that there was significant correlation between stress and quality of life ( $p:0.0001$ ,  $cc:0.559$ , *spearman rank test*). The spearman rank test reported a strong negative correlation ( $cc: -0.559$ ) which means the lower level of stress may lead to the higher-level quality of life.

Similarly, a study emphasized that stress among diabetes mellitus patients trigger physical and psychological mechanisms such as hormonal system that lead to decrease quality of life. Furthermore, the same study highlighted that the longer duration of suffering diabetes mellitus affects to the lower level quality of life [13]. On the other hand, the bivariate test reported no association between stress and health seeking behavior among diabetes mellitus patients ( $p:0.429$ ,  $cc:0.087$ , *spearman rank test*). This finding is in a line with other study that highlighted socio-demographic factors as the most factor influencing health-seeking behavior among diabetes mellitus patients [7,9]. Due to the limited time frame provided, this study could not reach more respondents who are relevant to this study.

#### IV. CONCLUSION

Stress plays an essential role in the quality of life among diabetes mellitus patients. The lower stress, the higher

quality of life. However, there was no correlation between stress and health seeking behavior among diabetes mellitus patients. Factors that dominantly affect health seeking behavior are socio-demography factors such as age, marital status, occupation and education. Based on this study findings, it is beneficial for government and healthcare workers to give more health-related program for diabetes mellitus patient in order to encourage health seeking behavior and reduce stress as well as improve quality of life.

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