



## NUTRITIONAL STATUS AND QUALITY OF LIFE OF PEOPLE WITH DIABETES MELLITUS TYPE 2

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### ABSTRACT

**BACKGROUND:** Diabetes mellitus is a kind of metabolic disease characterized by increasing of blood glucose related to insulin resistance. Controlling the risk factor has proven to be effective in controlling the pathophysiology of the disease. In the other hand, diabetes mellitus has an effect in quality of life. The purpose of this research are to find out the correlational relationship between the nutritional status and quality of life of people with diabetes mellitus.

**SUBJECT AND METHODE :** Its'a acorrelational research conducted by cross sectional approach. The population are people with diabetes who came to Holistic Care clinic at December – Februari 2019 counted 100 people. There are 30 respondents taken by simple randim sampling. The data taken using a questionnaire Revised Diabetes Quality of Life (Revised DqoL). Then the data analysed by using by statistical analysis using Spearman correlational test.

**RESULT :** It show that the mean of respondent's body mass index as nutritional status were 32,606 which mean that the respondents has ideal body weight. Then the mean of DQoL show 3,66 means that respondent has good quality of life. Statistical analysis show p value 0,587 means that there are no significant correlational between nutritional status and quality of life people with diabetes mellitus.

**DISCUSSION :** Psychological and social aspect has bigger part in forming quality of life in people with diabetes.

**Key words :** nutritional status, quality of life, diabetes mellitus

### INTRODUCTION

Diabetes mellitus (DM) is one common metabolic disease in Indonesia. It is divided into two type. DM type 1 or IDDM is metabolic disfunction that occurs due to damage of pancreatic beta cells so that the body does not secrete insulin at all and the client absolutely needs insulin. Whereas type 2 diabetes mellitus or NIDDM occurs due to pancreatic incompetence in secreting insulin which is needed in glucose metabolism so that it is characterized by an increase in abnormal glucose levels in the blood.

The incidence of diabetes mellitus continues to increase every year. The last estimate of the International Diabetic Federation (IDF) in 2013 was 382 million diabetic worldwide. Of the 382 million people 175 million of them have not been diagnosed so that they are threatened to progresively develop into unconscious and uncomplicated complications. The result of a household health survey (SKRT) in 2001 found the prevalence of people with diabetes mellitus in the population age 25-64 years old in Java and bali by 7.5%. The results of the Riskesdas 2013 mention the proportion of people with diabetes mellitus of 6.9% (Infodatin DM, 2014).



The development of diabetes mellitus in Indonesia has increased every year. Azila (2016) said based on IDF data in 2011 Indonesia ranked tenth in the world. Data released by BPS in 2003 totaled 133 million people. The prevalence of diabetic patients will continue to increase and it is predicted that by 2030 it will reach 21.3 million. East Java Province is one of the provinces with type 2 diabetes mellitus prevalence above the national prevalence, reaching 1.3% with a fairly high number of patients. In 2012 in Jember District there were 8,619 people with diabetes mellitus.

In the course of the diabetes mellitus is also known as silent killer due to the complications it causes. Complications of diabetes mellitus can cause visual disturbances, heart disease, renal failure, impotence, difficult to heal wounds, lung infection, stroke, and so forth. Even diabetes mellitus can cause amputation in limbs.

Various studies have proven that diabetes mellitus has various risk factors such as obesity/body mass index, hypertension, cholesterol, physical activity. Control of risk factors has been shown to influence the process of controlling the course of diabetes mellitus. In the other hand, diabetes mellitus which is a chronic disease will affect the quality of life. Quality of life is an individual's perception of his position in life in the context of culture and value systems and their religion to existing goals, expectations and standards.

The results of previous studies conducted by Azzila (2016) about quality of life of people with diabetes mellitus stated that 52.6% of people with diabetes have good quality of life. Another study conducted by Meidikayanti and Wahyuni (2017) shows significant correlation between family support and quality of life of people with diabetes mellitus. Alcubierre et al (2016) also conducted a study and stated that adherence to a Mediterranean diet does not have a significant effect on the general quality of life of people with diabetes but has some significant correlation to some dimensions of people with diabetes mellitus.

The treatment of diabetes mellitus consists of 4 main pillars which are education, medical nutritional therapy, exercise and medication. Those 4 pillars are conducted to control the diabetes mellitus risk factors to prevent complications. In other words, adherence to medical treatment programs will control diabetical risk factors to improve health perception of people with diabetes mellitus that will lead them to form a good quality of life. That is why we are interested in conducting the study about the correlation between nutritional status and quality of life of people with diabetes mellitus.

## METHOD

This is a correlational study conducted by a cross-sectional approach. The population are people with diabetes who came to Holistic Care clinic at December – February 2019, counted 100 people. There are 30 respondents taken by simple random sampling. The data taken using a questionnaire Revised Diabetes Quality of Life (Revised DqoL). Then the data analyzed by using statistical analysis using Spearman's correlational test.

## RESULT AND DISCUSSION



The data collection were held at May 2019 involving 30 respondents which is the client of Holistic care Clinic Bondowoso. The characteristic of respondents was shown as follow :

Table 1. General Caharacteristics of Respondents (Primary Data, 2019)

Characteristics	Frequency	Percentage
Age (years old)		
31 – 40	3	10
40 – 50	10	33
50 – 60	15	50
60 – 70	2	7
Gender		
Male	4	13
Female	26	87
Level of education		
Elementary school	3	10
Junior high school	8	27
Senior high school	17	66
College	2	7
Occupation		
Government employee	2	7
Enterpreneur	20	67
Labor	3	10
Housewife	5	16
Marital status		
Married	30	100
Health Insurance		
Yes	10	33
No	20	67
Comorbid		
Yes	10	33
No	20	67
Complication		
Yes	20	67
No	10	33
Length of illness		
Less than a year	5	16
More than a year	25	84
Fasting blood glucose		
< 120 mg/dl	8	27
>120 mg/dl	22	73

According to the data on table 1 we see that majority of respondents are 50 – 60 years old, female, graduate from high school, working as enterpreneur, has no health insurance, no comorbid, has complication which is diabetic foot, got diabetes mellitus for more than a year and has fasting blood glucose level higher than 120 mg/dl. All of respondents were married.



Table 2. Average of Body Mass Index (BMI) and Quality of Life (QoL) of Respondents (Primary Data, 2019)

Parameter	Mean
Body Mass Index	23,609 ± 4,4177
Quality of Life	3,66 ± 0,515
Satisfaction about diabetes mellitus	3,88 ± 0,498
Social perspective due to diabetes mellitus	3,25 ± 0,926
Diabetes mellitus perspective	3,85 ± 0,671
Impact of diabetes mellitus	3,56 ± 0,794
P value 0,587	

According to the data in table 2 we see that the average of BMI is 23.609 means that the BMI of respondents is considered to be normal. Diabetes mellitus is one of the disease that affected by obesity, especially central obesity. It causes by insulin resistance due to excess fat accumulation in the body that will lead to the increase of blood glucose. These result study show the mean of BMI of respondents is 23.609 which mean the BMI is normal.

Majority of the respondents are 5 – 60 years old. This age are at risk to have obesity compared with the age group under 40. But these study is shown different result, it can be happen due to majority of respondents has diabetes mellitus for more than a year. History of having diabetes mellitus for a long time will make a possibility to increase the catabolism of glucose and fat as source of energy to occur.

The other factors that affect the BMI is physical activity. Majority of respondents is working. Their occupation a little bit affected their physical activity. Most of respondents are working as an entrepreneur. These kind of job will make them possible to mobilization so that they will actively move. These study is in line with the study of Fitriyani (2012) which stated that occupation and physical activity are affected the BMI.

Beside that respondents are the client of Holistic Crae Clinic Bondowoso. They often received health education about diabetes mellitus or health in general. Supported by the level of education of respondents. Majority of respondents are graduated from high school so it will make them easy in receiving the new information.

Quality of life of respondents in general has the average score 3.66 bigger than median value 2.5 so that it can be conclude that the respondents has good quality of life. Quality of life is an individual's perception of his position in life in the context of culture and value systems and their religion to existing goals, expectation and standards. Quality of life is also multidimensional concepts involving physical, social and psychological aspects that connected with illness and therapy.

Satria in Dzuztura (2012) stated that diabetes mellitus is a chronic disease need long term therapy. Diabetes mellitus complication is an impact of physical problem that faced by people with diabetes mellitus. Another problem due to diabetes mellitus that could have big impact to quality of life of people with diabetes is psychological burden from the people with diabetes mellitus itself and also their family that can be seen through their negative emotional behavior like rejection and



depression. Beside that the decreasing of productivity and social interaction due to complication of diabetes mellitus.

The results show the average score of quality of life show that respondents has good quality of life. Some factors contribute to quality of life is age. Majority of respondents are 50 – 60 years old, in this phase, individuals has pass the young age, so that in this periode the individuals has pass the phase and evaluate live they are live in positively compared with the younger one. This in line with the study results of Wahyuni (2014) which is said that quality of life according to the characteristics of people with type 2 diabetes mellitus stated that older individuals has better quality of life.

Beside that the respondents's occupation as an entrepreneur making them possible more intens in doing mobilization, met others and make an achievement. When individuals has a job then it will make him could afford the treatment he need to maintain his health status. Then it will bring positive effect to the perception of quality of life than the job less respondents. Marital status is also could increase the quality of life of people with diabetes since marriage could predetermine family support during the treatment.

Level education of respondents is also contribute to the perception of quality of life. Most of respondents are graduated from high school. High education could stimulate individuals to find more information about the disease they have got. The observation show that the openness attitudes of health providers also encourage the client to not to be embarrassed to ask about their disease or the treatment.

Wahyuni (2014) stated that length of having diabetes mellitus is also affect the quality of life due to the anxiety. Periode of having disease and duration of treatment are affected to functional capacity, psychological capacity health status and prosperity level of respondents. Physiological changes due to long term hyperglycemia will lead to microvascular and macrovascular complication. Majority of respondents are having diabetic foot but it is not decreased their quality of life. It is because of advance wound care technique applied by health providers to improve their condition. The wound heals quickly coupled by the acceptance of their condition could improve the quality of life.

Statistical analysis using Spearman correlation technique show p value of 0.587 greater than  $\alpha$  0.05 means that there is no significant correlation between nutritional status and quality of life of people with diabetes mellitus. Nutritional status is parameters in fulfill nutritional needs indicated by the weight and height the individuals. Nutritional status is also define as health status which is make up from the balance between the need and input of the nutrients, measuring nutritional status will describe to us about a risk condition of all disease, which is obesity. Waspadji, in Adnan (2013) said that central obesity is an etiological factors that could lead to diabetes mellitus. Fat accumulation in the body could lead to insulin resistance that make the blood glucose is about to increase. When blood glucose are increase the patient will have hyperglycemia which could worse his health status.

There is no significant correlation between nutritional status and quality of life could occurs due to so many factors. Quality of life is formed of physical, psychological, activity, social, and environmental aspects. BMI is one of indicators that could affect physical health which is one of domains in quality of life through blood glucose regulation. But psychological and social aspect has more part in determining the quality of life in people with diabetes mellitus.



Some respondents are having normal BMI and some are havin diabetic foot too. When the diabetic foot is not care properly it will affect the body image and social interaction so it will worsen the quality of life. But in the location of this study, the health care provider has provide wound care for diabetic foot and the wound are become better. The improved wound condition will help respondents to have personal confidence to socially interact and has some hope to be back in normal life again.

### CONCLUSION AND RECOMMENDATION

From the results above it can be concluded that majority of respondents has normal body mass index and has a good quality of life. But statistical analysis show no significant correlationship between nutritional status and quality of life of people with diabetes.

From the results above the recommendation of this study is that the client should has a full commitment during the period of treatment so that the diabetic foot will heal and they could make an intens social relationship that coul maintain their quality of life.

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