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Determinant Health Locus of Internal and External Health Locus of Control as a Predicator of Quality of Life in Type II Dm Patients In Tetunyung Village Takengon East 2021

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R T I C L E I N F O

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ABSTRACT

Diabetes Mellitus (DM) is a metabolic disorder disease characterized by loss of carbohydrate tolerance. Problems with the quality of life of DM patients are quite complex problems. This will affect several aspects of life, DM conditions that are not managed properly in the long term will contribute to the occurrence of chronic complications. This will have an impact on the patient's quality of life. Decreased quality of life can affect the life expectancy of DM patients and can significantly affect the increase in mortality. This study aims to determine the determinants of internal health locus of control and external health locus of control as predictors of quality of life in type 2 diabetes patients in Tetunyung village, East Takengon in 2021. This study used a cross-sectional study design, the population in this study were Type-2 diabetes mellitus sufferers in Tetunyung Takengon Timur Village as many as 103 Type-2 DM sufferers. The sample in this study was selected by purposive sampling with the criteria of Type 2 DM sufferers with a total of 40 patients. Research instrument in the form of a questionnaire. Bivariate analysis using multiple linear regression. The results of the study found that what affects the quality of life in patients with type-2 diabetes mellitus is the internal locus of control as much as 66%. The results of calculations using the SPSS program with a p value of 0.000 ($p < 0.05$). The conclusion in this study is that there is a relationship between locus of control and quality of life where when individuals with good locus of control will produce a good quality of life.

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INTRODUCTION

Diabetes Mellitus (DM) is a metabolic disorder disease characterized by loss of carbohydrate tolerance. DM is a chronic hyperglycemic state accompanied by metabolic disorders caused by hormonal disorders. Fully developed diabetes mellitus is clinically characterized by hyperglycemia, atherosclerosis, microangiopathy, and neuropathy. DM causes various

complications. (Annies Alfie Azila, 2016).

Diabetes Mellitus is one of the most common chronic diseases in the world, occurs when insulin production in the pancreas is insufficient or when insulin cannot be used effectively by the body. Diabetes Mellitus is a degenerative disease that is of great concern because it is part of the four priority non-communicable diseases which are always increasing every year and are a threat to world health in the current era (IDF, 2019).

Type 2 diabetes mellitus is a multifactorial disease with genetic and environmental components which contribute equally strongly to the process of developing the disease, as these factors can be modified through lifestyle changes, while others cannot be changed. Factors associated with type 2 diabetes include age, family history of diabetes, excess body weight, lack of physical activity, and an unhealthy diet. Type 2 DM can occur in children and adults, but usually occurs after the age of 30 years. The global prevalence of DM shows that the increasing age, the higher the prevalence of existing DM (Kekenusa et al., 2013).

Based on data from the Indonesian Ministry of Health, it is stated that 422 million people in the world suffer from diabetes mellitus or an increase of about 8.5% in the adult population and an estimated 2.2 million deaths with the percentage due to diabetes mellitus occurring before the age of 70 years. especially in countries with low and middle economic status. In fact, it is estimated that it will continue to increase by around 600 million people in 2035 (WHO, 2018).

Based on Riskesdas data in 2018, Indonesia was ranked fourth out of ten of the top ten countries in the world, cases of type 2 diabetes mellitus with a prevalence of 8.6% of the total population, are estimated to increase from 8.4 million people in 2000 to 21, 3 million people in 2030. The prevalence of diabetes mellitus diagnosed in 2018, the largest sufferers were in the age category 55 to 64 years, namely 6.3% and 65 to 74 years, namely 6.03%. In Aceh Province, the prevalence of DM was 1.7% with the highest prevalence in South Aceh District and the lowest in Southwest Aceh District (Resi Maulina, 2015).

The disease suffered and the treatment that is being undertaken by a DM patient can affect the functional, psychological and social health and well-being of DM patients. It can also provide influence on the quality of life of DM patients, the patient's quality of life as an individual's perception of his position in life (WHO, 2018).

Problems in the quality of life of DM patients are quite complex problems. This will affect several aspects of life, DM conditions that are not managed properly in the long term will contribute to the occurrence of chronic complications. This will have an impact on the patient's quality of life. Decreased quality of life can affect the life expectancy of DM patients and can significantly affect the increase in mortality (Rahman et al., 2017).

*Locus of control*can be classified into two categories, namely internal and external. Individuals with an internal locus of control believe that their success and failure are caused by their own actions and abilities. They feel able to control the consequences of their own behavior. Meanwhile, individuals with external locus of control see that success is basically determined by external forces, whether it is luck, social context or other people. Individuals with external locus of control feel unable to control the events that occur to them (Inda Nofriani Safitri, 2013).

Health locus of control (HLC) is a person's belief in his health control and the extent to which the results obtained from that health control (Arif et al., 2019). Various psychological and social aspects have been proven to help individuals improve the quality of life in DM patients. Health locus of control is part of the psychological aspect. On DM patients show that someone who has a high level of internal locus of control (belief that health is controlled by oneself), but a low level of external locus of control (belief that health is controlled by others) has a high level of quality of life (Inda Nofriani Safitri , 2013).

HLC has an important role for individuals in adapting to chronic diseases and treatment planning, because HLC is the belief that individuals have control over their health (Arif et al., 2019).

Type-2 DM patients with an internal locus of control will have the belief that the individual has control over his own health, so he will be responsible for his health and comply

with recommendations for blood sugar stability. Individuals with an external locus of control have the belief that their health is determined by other influential people, such as family, doctors, nurses, friends and God so that these individuals have less responsibility for their health. Then the researchers conducted interviews with 10 patients with type-2 diabetes mellitus. 7 people with diabetes mellitus said that they were worried about life in the future, both work and social. While the other 3 patients said that the level of patient satisfaction was based on their perception.

So, to find out the improvement in the quality of life in Type-2 Diabetes Mellitus patients, the author takes the title "Determinants of Internal Health Locus Of Control and External Health Locus Of Control as Predictors of Quality of Life in Type 2 DM Patients in Tetunyung Village, Takengon Timur in 2021".

RESEARCH METHOD

Types of research

The type of research used in this research is quantitative, which is identical to numerical data, which is objective. Quantitative has a measurable object reality.

Research design

This study uses a descriptive collaborative research design using a Cross Sectional approach, namely to determine the effect of Determinants of Internal Health Locus Of Control and External Health Locus Of Control on Quality of Life in Type-2 DM Patients in Tetunyung Village, Takengon Timur in 2021. This study uses two variables. , namely the independent variable (X) and the dependent variable (Y). Variable X in this study is Health Locus Of Control Internal and Health Locus of Control external. while the Y variable is the Quality of Life in Type-2 DM patients.

Research Location and Time

This research was conducted in the village of Tetunyung Takengon Timur in 2021. The reason for choosing the location was because of the presence of Diabetes Mellitus patients, as well as references that support the implementation of this research, the location is easy to reach and no research has been conducted on Determinants of Health Locus Of Control Internal and Health Locus Of External Control As Predictors of Quality of Life in Type-2 DM Patients. This research starts from March to June 2021. Starting with submitting a title to completing research in the form of a thesis.

Population and Sample

The population is an area consisting of objects/subjects that have certain qualities and characteristics determined by researchers to be studied and then drawn conclusions (Sugiyono, 2017). The population in this study were all patients with type-2 diabetes mellitus in the village of Tetunyung, East Takengon, as many as 103 patients with type-2 diabetes mellitus. This data was taken from January to March 2021.

The sampling technique in this study was purposive sampling, where the sampling technique was by selecting a sample among the population according to the objectives desired by the researcher (objectives/problems in the study), the sample in this study amounted to 20%, namely 40 DM suffer

Research instrument

Research instruments are tools or facilities used by researchers in collecting data (Arikunto, 2017). The research instrument was a questionnaire, which consisted of 2 questionnaires, namely the health locus of control questionnaire from the study of Wallston and Smith (1994) with a total of 12 statement items (6 internal locus question items and 6 external locus question items), and a quality of life questionnaire from Doni Purwansyah's research (2019) consists of 12 question items.

RESULTS AND DISCUSSION

Demographic Characteristics

Characteristics of respondents on internal health locus of control and external health locus of control as a predictor of quality of life in type 2 DM patients in Tetunyung Village, East Takengon in this study consisted of age, gender, education level and social status.

Table 1. Distribution of frequency and percentage of respondents based on gender, age, education, and occupation in Type-2 Diabetes patients in East Takengon Tetunyung Village in 2021

Demographic Data	F	%
Gender		
Man	15	37.5
Woman	25	62.5
Total	40	100
Age		
40-50	5	12.5
51-60	32	80.0
61-70	3	7.5
Total	40	100
Education		
No school	1	2.5
SD	2	5.0
JUNIOR HIGH SCHOOL	10	25.0
SENIOR HIGH SCHOOL	12	30.0
College	15	37.5
Total	40	100
Work		
Farmer	12	30.0
Self-employed	9	22.5
civil servant	10	25.0
Trader	9	22.5
Total	40	100

Based on the table above, it was found that the majority of the female sex was 62.5% or 25 respondents. For the majority of ages, there were 32 respondents aged 51-60 or 80.0% of the total 40 respondents. While at the education level the majority are tertiary institutions with a total of 15 respondents or 37.5%. And in the type of work the majority are farmers with a total of 12 respondents or 30.0%.

Locus of control and quality of life in Type-2 DM patients in Tetunyung village, East Takengon in 2021

Based on data analysis of 40 respondents of Type-2 DM patients in Tetunyung Village, Takengon Timur in 2021, the distribution of Frequency and Percentage is as follows:

Table 2. Distribution of frequency and percentage of locus of control and quality of life in patients with Type-2 Diabetes Mellitus in Tetunyung Takengon Village East Year 2021

Variable	Percentage
Locus of control	
Internal	82.5
External	17.5
Quality of life	
Well	95.0
Bad	5.0

Of the 40 respondents, 33 respondents (82.5%) had an internal locus of control, 7 respondents (17.5%) had an external locus of control. The following graph can be seen:

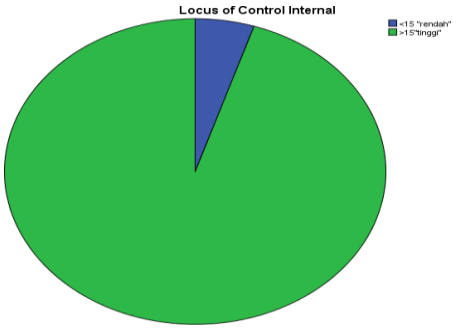

Figure 1. Internal locus of control for patients with DM Tipr-2

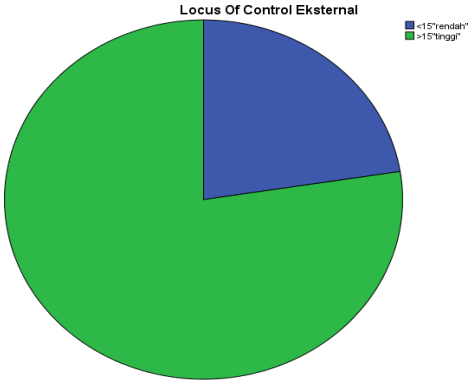

Figure 2. External locus of control in Type-2 DM patients

While on the quality of life variable, 38 respondents (95.0%) had good quality of life, 2 respondents (5.0%) had poor quality of life, it can be seen in the following graph:

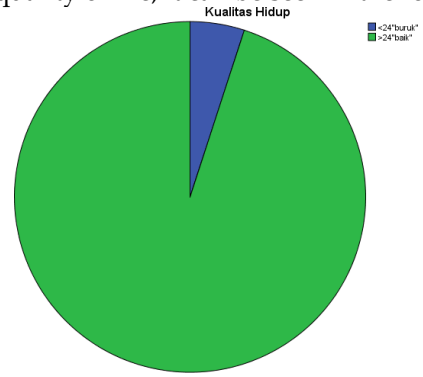

Figure 3 Quality of life for Type-2 DM patients

Bivariate Analysis

The correlation between health locus of control and quality of life

Correlation analysis between locus of control and quality of life in Type-2 DM patients. Following are the results of the correlation between health locus of control and quality of life in patients with Type-2 DM.

Table 3. Results of correlation analysis of health locus of control and quality of life in Type-2 Diabetes patients in Tetunyung Village, East Takengon in 2021

Variable	N	R	P
Health Locus of control Quality of life	40	0.56	0.000

In the table above it can be seen that there is a significant relationship between health locus of control and quality of life in patients with Type-2 DM in Tetunyung Takengon Timur Village in 2021. Taking into account the correlation coefficient of 0.56, it means that it has a very strong (perfect) correlation.

Table 4. Analysis of the relationship between Locus Of Control and quality of life of Type-2 Diabetes Mellitus patients

Variable	Locus of control	Means	SD	N	P value
Quality of life	Internal external	21,750	4.204	40	0.000
		1.7750	4229	40	

In the table above, it can be seen that the average quality of life score with an internal locus of control is 21,750 with a standard deviation of 4,204, while the average score for respondents with an external locus of control is 1,7750 with a standard deviation of 4229. The results of statistical analysis are obtained. that there is a relationship between locus of control and quality of life (p value 0.000).

Candidate selection

At this stage, an independent variable (locus of control) is selected which is thought to be related to quality of life. The results of the bivariate analysis performed are as follows:

Table 5. Multivariate test results of multiple linear regression tests on health locus of control and quality of life in patients with type-2 DM

No	Variable	P value
1	Age	0.09
2	Gender	0.45
3	Education	0.063
4	Work	0.09
5	external locus of control	0.711
6	Internal locus of control	0.000

Variables that enter the next stage are only those that meet the P value < 0.25. From the table above, there are three variables that enter the multivariate modeling stage, namely: age, occupation and internal locus of control.

Multivariate Modeling

Variables are entered into the model starting from the locus of control as the main variable. then entered one by one, namely age, occupation by looking at the change in the coefficient of the quality of life variable as the main variable. If there is a change in the coefficient B of more than 10%, then the variable is retained in the model and is considered as a confonder. The results of the confonder inspection are shown in the table below.

Table 6. The final model for multivariate analysis of the relationship between locus of control and quality of life in Type-2 DM patients

Variable	**B**	**Betas**	**P value**	**R^2**
Internal locus of control	0.066	0.721	0.000	0.549
Work	0.052	0.159	0.04	

There is a relationship between locus of control with quality of life, every increase of one unit of internal locus of control will increase quality of life by 0.066 (66%). There is a relationship between work and quality of life, every increase in one unit of work will increase the quality of life by 0.052 (52%). Overall, the two variables play a role in explaining the quality of life of 0.549. So it can be concluded that the most dominant variable affecting the quality of life is the internal locus of control.

Discussion

Characteristics of Type-2 DM Respondents in Tetunyung Takengon Timur Village in 2021

The results of this study indicate that the number of male respondents is 15 respondents (37.5%) while there are more women, namely 25 respondents (62.5%). The prevalence of falls in women is higher than in men.

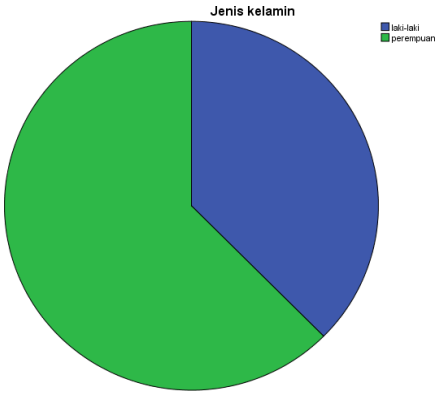

Figure 3. respondents' gender characteristics

Meanwhile, in the study (Haskas, Yusran, 2019) entitled Locus of control: Type-2 diabetes control, Loc dimensions and respondent characteristics are increasingly internal locus of control and tend to be stable in the 46-65 year age group, and based on male gender. higher percentage of internal locus of control that is 92.0% than women.

Based on the age of the respondents, it was found that respondents with type 2 diabetes were aged 40-50 years as many as 5 people (12.5%), aged 51-60 years as many as 32 people (80.0%) and age 61-70 years as many as 3 people (7.5%).

Figure 3. characteristics by age

Where according to the data and information center of the Indonesian Ministry of Health, the prevalence of diabetes by age group in 2018 was 55-64 years old, while in the study (Haskas, Yusran, 2019) entitled locus of control in controlling diabetes mellitus in controlling type 2 diabetes, the results In his research, the respondents with the highest number were in the 46-55 year age group (35.7%).

The type of education factor for the majority of patients with higher education level was 15 respondents (37.5%), SMA 12 (30.0%) respondents, SMP 10 (25.0%) Respondents, Elementary School 2 (5.0%) and Not attending school are 1 (2.5%).

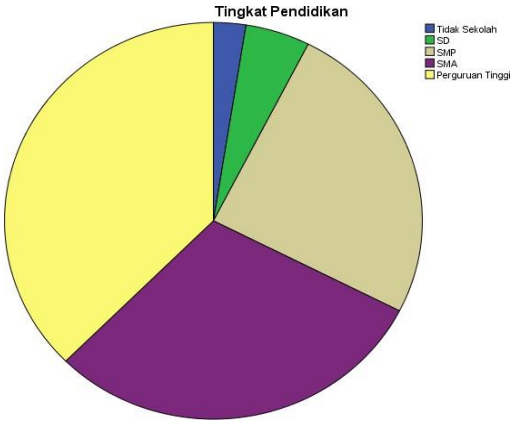

Figure 4. education level of respondents

In a study (Yulis Hati, et.al, 2021) entitled healh locus of control and self-efficacy of type-2 DM patients with the application of psychoeducational modifications, it was stated that the majority of patients' education levels were high school graduates, namely 23 people (65.7%). Education is an important factor that DM patients need to have, because education is an indicator of the patient's understanding of care, self-management, and controlling glucose levels (Hussein et al., 2010).

While in the employment status of the majority of farmers as many as 12 respondents (30.0%), entrepreneurs as many as 9 respondents (22.5%), civil servants as many as 10 respondents (25.0%) and traders as many as 9 respondents (22.5%).

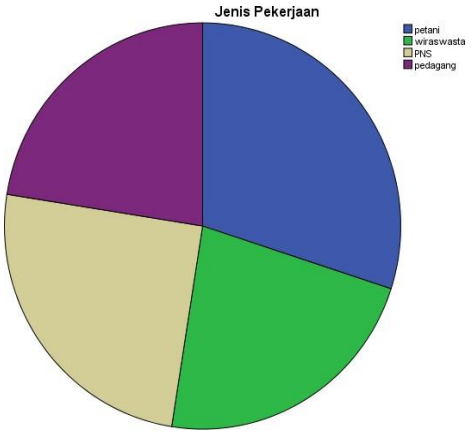

Figure 5. types of work of the respondents

External locus of control and quality of life of type-2 diabetes patients in Tetuyung Village, East Takengon in 2021

The results of this study indicate that those who have an external locus of control are 7 respondents (17.5%). (Parahdina, 2014) states that together optimistic health locus control and social support affect the quality of life of patients with type 2 diabetes in the elderly. Specifically, this study found that optimistic health locus and functional support had a significant positive effect on QOL. In addition to being optimistic, type-2 DM patients need functional support which plays a role in increasing the positive influence of a sense of security and reducing feelings of isolation.

Internal locus of control and external locus of control in Type-2 DM patients

The results of this study indicate that the majority of respondents have a high internal locus of control as many as 33 respondents (82.5%). Most of the respondents in this study have control over their own health. This is in accordance with research (Yulis Hati, et.al, 2021) which states that patients are more likely to be responsible for themselves to control his health so that the individual is responsible for his health.

*Locus of control*is a very important tool to guide health actions directed at DM patients because the information can support a better understanding of the psychosocial factors a person has in managing chronic illness. Internal locus of control can improve and strengthen patients' self-care behavior and their involvement in care, improve quality of life and reduce disability (Abredari et al., 2015).

According to (Purwana, 2015) in his research entitled the effect of health locus of control, social support and Islamic religious coping on the quality of life of people with type 2 diabetes, stated that internal health locus of control has a significant positive effect on the quality of life of patients with type 2 diabetes. , so that the higher the internal health locus of control, the patient with type-2 diabetes mellitus, the higher the quality of life.

Locus of control is very closely related to quality of life, where when individuals with good locus of control will produce a good quality of life. Individual locus of control is also influenced by the awareness of the health they experience, when individuals have the intention to make changes to themselves, there will be changes in the quality of their life. The results showed that Type-2 DM clients who had a good quality of life were 38 respondents (95.0%) while the respondents who had a poor quality of life were 2 respondents (5.0%).

Diabetes mellitus affects the lifestyle of people with type-2 diabetes mellitus so that it has a negative impact on quality of life. Decreased quality of life in patients with diabetes mellitus is characterized by the patient's inability to exercise self-control independently, which is called locus of control (Kuniyo et al., 2019).

Dominant factors that affect the quality of life of patients with Type-2 DM

The results of this study stated that the most dominant variable influencing the quality of life of Type-2 DM patients was internal locus of control. Where respondents believe that they have a role in their own health.

CONCLUSIONS

From the results of the study, Determinants of Internal Health Locus Of Control and External Health Locus Of Control as Predictors of Quality of Life in Type-2 DM Patients in Tetunyung Village, Takengon Timur in 2021, it can be concluded as follows: The effect of external locus of control on the quality of life of type-2 diabetes mellitus patients in Tetunyung Takengon Timur Village is mostly low. The influence of internal locus of control on the quality of life of patients with type 2 diabetes mellitus in the village of Tetunyung, Takegon Timur, is high. The results of the regression test showed that the dominant factor affecting the quality of life in type 2 diabetes mellitus patients was the internal locus of control with a p value of 0.000 ($p < 0.05$). It is hoped that further research regarding locus of control on quality of life in diabetes patients can be carried out so that it can be developed as an effective comparison in improving the quality of life in patients with type-2 diabetes mellitus.

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