

# The Correlation Between Self-Esteem And The Locus Of Control With The Self-Care Ability Of Diabetes Mellitus Type 2 Patients

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**Abstract:** *The sudden life change causes diabetes mellitus (DM) patients to show some negative psychological reactions, therefore, the self-care, locus of control, and self-esteem become important for diabetic patients as a control towards their disease. The study aimed to analyze the correlation between self-esteem and locus of control with the self-care ability of DM type 2 patients. The study was the correlation with 122 samples of DM type 2 patients. Data analysis applied is the Pearson correlation coefficient, t-independent test, and multiple linear regressions. The result shows that there was a correlation between self-esteem and self-care ability with the correlation coefficient of 0.777 (p-value 0.000,  $\alpha$ : 0.05). There was a correlation between locus of control and self-care ability with a correlation coefficient of 0.665 (p-value 0.001,  $\alpha$ : 0.05). Data were analyzed by multiple linear regressions. There was a correlation between self-esteem with respondents' self-care ability after controlled by education variable, marital status, and profession ( $B = 0.266$ ,  $SE=0.32$ ). There was a correlation between locus of control with self-care ability ( $B=0.147$ ,  $B=0.37$ ). It was concluded that the most dominant variable which affects self-care ability was self-esteem.*

**Keywords:** *Self-esteem, Locus of Control, Self-care, DM Type 2*

## 1. INTRODUCTION

World Health Organization [1] define that diabetes as a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Insulin is a hormone that regulates blood sugar. DM type 2 patients have to go through life changes, starting from physical exercise, blood sugar control, drug consumption, the restricted diet which routinely required for the rest of the life. Sudden life change causes DM patients to show some negative psychological reactions such as rage, feel uselessness, high anxiety, and stress [2]. For those >5 years as DM patients, various body mechanisms shall adjust themselves to maintain the glucose requirement of the body parts especially the liver, muscles, and brain. This resulted in the lack of ability to synthesize the protein as the target to be bound with the receptor. Thus, the loss of tissue and cell malfunction triggers complications [3]. Maxwell, Cletus, Chinwe, Jegberime and Obinna [4] stated that patients with over five years of suffering from DM will realize the importance of

self-care after the symptoms occur, thus, the patients often started the self-care management suggested once the complications' symptoms are seen.

Self-care is very important for diabetic patients as control of the disease since 95% self-care is usually provided by the family to prevent and minimize the complication related to the disease. DM type 2 self-care is useful in lowering the level of (HbA1c), lowering blood glucose level, and intensifying the diet habit as the main step to reduce the occurrence of nephropathy and retinopathy (microvascular complication) and macrovascular, especially cardiovascular (CVD) [5]. The study by Kusniyah, Nursiswati, and Rahayu [6] found that 90% is believed to be a correlation between self-care with the HbA1c level, in which the better the self-care, the better the HbA1c level is.

Amente, Belachew, Hailu, and Berhanu [7] stated that most of the patients do less frequent self-care than suggested. Although, the patients have a positive response towards self-care related to diabetes, and almost half of the patients have inadequate knowledge of diabetes and self-care practice. Albikawi and Abuadas [8] also stated that diabetic self-care shows the worrying status of DM type-2 patients. Self-care management of DM type-2 patients is a core challenge for the health care service provider as well as the health care system.

The low self-esteem of DM patients might occur once the complication of DM starts to appear such as wound like gangrene. Such a condition is expected not to change someone regarding self-esteem, especially a man, whose position in the family is a leader and not to change the way he interact with society. It requires at least self-respect from the family to boost his self-confidence [9]. Popova [10] stated that one of the prognoses that are important for health and well-being is the health locus of control. Locus of control is an important health indicator that gives a great impact on controlling chronic disease. Health locus control can reduce complications of illness and cutting health care expenses [11].

## 2. METHODS

The research was a quantitative study with correlation design. Correlation design aims to analyze the correlation between two or more variables, without doing any changes, addition, or manipulation of the data available [12]. The target population in this research was all of the patients visiting the polyclinic ward of Pirngadi General Hospital Medan. The sampling technique of this research was a nonprobability sampling technique used to determine the eligible samples to participate in the research without random selection. The sampling method used was consecutive sampling. This method involves all eligible populations for some time to fulfill the required samples [13].

Before the research began, the researcher chose an assistant to be involved in the research for an effective timeline (working efficiency). Before the data collecting process, the researcher along with the assistant synchronized the perception or comprehension towards the questioners of which the validity and reliability have been tested previously. The assistant was mentored regarding the aims of the research, the data collecting process, and how to fill in the questioners. To prevent taking the same sample twice, the researcher needed to list the eligible samples based on the number, name, age, and address. Before the data collection, the researcher and assistant clarified the respondent candidate whether he has been listed as the respondent in the previous week and match the information with the information listed on the respondent's list. If the sample has not been listed as the respondent before and if the patient was willing to be the respondent, the data was then recorded in the respondent's list which later asked to fill in the questioners. No repeated sample taking happened during the data collecting process during the validity test and data collecting process.

### 3. RESULTS

The study outcome shows that averagely, there were 77 (63.1%) respondents between the age of 56-65 years old. 89 respondents (73%) were female. 55 respondents (45.1%) were high school graduates, self-employees (entrepreneurs) were 44 respondents (36.1%), and those who suffer DM >5 years were 99 respondents (81.1%). 99 respondents (82.5%) out of 122 hold high self-esteem, 23 (17.5%) respondents have low self-esteem. 103 (85.8%) respondents have an internal locus of control, about 19 (14.2%) respondents have an external locus of control. As for self-care variables, from 122 patients, 96 (80%) respondents do minimal care, 25 (19.2%) partial care and 1 (0.8%) respondent does total care.

The correlation analysis between self-esteem and locus of control with self-care ability of DM type 2 patients is measured by using Pearson Product Moment Test, and it was figured that there was a significant correlation between self-esteem and self-care ability of DM type 2 patients at Dr. Pirngadi General Hospital Medan. Referring to the correlation coefficient value of 0.777, it shows a strong correlation (perfect).

Table 1: The correlation between self-esteem and self-care ability of DM type 2 clients' research result (n=122)

Variable	n	R	p-value
Self-esteem Self-care ability	122	0.777	0.000

There was a significant correlation between locus of control and the self-care ability of DM type 2 patients at Dr. Pirngadi General Hospital Medan. Referring to the correlation coefficient value of 0.665 means it has a strong correlation.

Table 2: The correlation between Locus Locus of Control and self-care ability of DM type 2 client (n=122)

Variable	n	R	p-value
locus of control self-care ability	122	0,665	0,000

Multivariate analysis was used to acknowledge the correlation between self-esteem and locus of control with the self-care ability of DM type 2 patients after controlled by confounding variables. This study used multiple linear regressions. At this stage, the selection of the free variables (self-esteem and locus of control) and confounding variables (age, gender, education, profession, marital status, and DM period) which assumed to be correlated with the self-care ability, was carried out. The bivariate analysis result with multiple linear regressions is as follows:

Table 3: The bivariate analysis result using multiple linear regression tests of free variables and confounding variables with self-care.

No	Variable	p-value
1	Self-esteem	0.000
2	Locus of control	0.001
3	Age	0.969
4	Gender	0.525
5	Education	0.000
6	Marital Status	0.205
7	profession	0.228
8	DM period	0.728

The variables for the next step were the ones covering the p-value of < 0.25. From the table above, five variables were going to the next multivariate modeling step which was: self-esteem, locus of control, education, marital status, and professions. The variables included starts from self-esteem and locus of control as the main variables. Next was confounding variables; the education, marital status, and profession were added one by one by acknowledging the coefficient changes of the self-esteem variables as the main variables. If the change of B coefficient is more than 10%, the variables are kept in the model and considered as the confounder. The confounder examination is shown in the following table:  
 Table 4: The Multivariate last model analysis on the correlation between self-esteem and locus of control with the self-care ability

Variable	B	Beta	p-value	R <sup>2</sup>
Self-esteem	0.266	0.596	0.000	0.651
Locus of control	0.147	0.281	0.000	

There was a correlation between self-esteem and self-care ability. Within every improvement in self-esteem, there is a self-care improvement of 0.266 (26%) as well. There was a correlation between locus of control and self-care ability. Within every improvement on each locus of control, there shall be an improvement in self-care ability of about 0.147 (47%). Overall, both variables have a role in showing the self-care ability of about 0.651%. Therefore, it was concluded that the most dominant variable in affecting self-care ability was self-esteem.

#### 4. DISCUSSION

This research stated that there was a significant correlation between self-esteem and self-care ability of DM type 2 patients. Elderly with chronic disease resulted in the decrease of their functional ability which affects their self-esteem. The decrease in muscles' power slows down the movement, becomes unstable, difficult, or slow in anticipating any obstacles such as slipping and stumbling. This fact might lessen one's self-esteem [14]. Having to live with chronic diseases such as Diabetes Mellitus type 2 might cause changes and imbalance in patients' life such as biologically, psychologically, socially, and spiritually [15]. That matter can affect the quality of life, referring to the conducted research by Wahyuni and Kurnia, [16] there is a meaningful relationship significantly between self-care and quality of life in patients. The opportunity of respondents who have self-care the less well has decreased the quality of life is six times greater compared with good self-care. For that, the role of nurses is very important in reminding and motivating DM patients about the importance of managing DM, especially in monitoring blood sugar levels. It is hoped that this can be done to minimize the acute complications of hypoglycemia or hyperglycemia [17].

This research result mentioned that there was a significant correlation between locus of control and the self-care ability of DM type 2 patients. The result shows that the majority of the respondents have an internal locus of control. The data shows that some of the research subjects have had some attempts to get well. They also have the spirit and responsibility towards their health. This research result is similar to the research conducted by Handayani, Yudianto, and Kurniawan [17] mentioning that the majority of the respondents have an internal locus of control. The research result stated that the most dominant variable affecting the self-care ability was self-esteem. Every self-esteem progress shall improve the self-care ability of 0.266 (26%). Harkreader and Hogan [18] mentioned that the quality of life and

self-esteem are affected by chronic disease, while having a chronic disease, the clients are having a risk of low self-esteem since they feel the loss of control over health perception. When an individual with the chronic disease must depend on the family member or caregiver, the dependency causes low self-esteem. An individual with high self-esteem actively confront the surrounding and effectively adjusts him/herself to the changes and considerably feels secure. An individual with low self-esteem sees the surrounding negatively and feels threats [19].

## 5. CONCLUSIONS

Referring to the conducted research on DM type 2 patients at endocrinology polyclinic of Dr. Pirngadi General Hospital Medan, It is shown that the respondents' characteristics at Dr. Pirngadi General Hospital Medan are mostly female, age between 56-65 years old, high school graduates, business owner, having DM for more than 5 years. Using Pearson product-moment as the analysis method, it has resulted that there are a positive correlation and significance between self-esteem and self-care ability with the correlation coefficient value of 0.777 which means it has a very strong correlation. For the locus of control variables, there is a positive correlation and significance between locus of control and the self-care ability with the correlation coefficient value of 0.665 or having a strong correlation. As from the analysis result using multiple linear regressions, it is shown that there is a correlation between self-esteem and respondents' self-care ability after controlled by variables of education, marital status, and professions. Every progress on self-esteem causes the improvement of self-care ability with a value of 0.266 (26%). There is a correlation between locus of control and self-care ability. Every single progress in the locus of control, there is an improvement in the self-care ability with a value of 0.147 (14%). Overall, both variables have roles in showing the self-care ability of about 0.651%. Therefore, it is concluded that the most dominant variable affecting self-care ability is the self-esteem

## 6. SUGGESTIONS

This research result hopefully manages to explain to the DM type 2 patients that psychological factors such as self-esteem and locus of control can improve the self-care ability. DM type 2 patients are required to have well psychology especially self-esteem and locus of control in going through DM type 2 medical treatment. As for the healthcare nursing institution in hospital or community healthcare center, especially the hospital where this research takes place, is expected to provide health education such as counseling on the importance of psychological factor such as self-esteem in increasing the self-esteem and locus of control of DM type 2 patients in going through their medical treatment. It is expected that the educational institution upgrading the knowledge and motivating the nurse-candidate students on the importance of Diabetes Mellitus type 2 rules of conduct from psychological especially regarding the self-esteem and locus of control for a better knowledge, attitude and skills in applying the foster-nursing of the diabetes type 2 patients.

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