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## The Effect of 'Locus of Control' on the Diabetes Mellitus Patients' Intention in Performing the DM Control

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### Abstract

The behavioral control of diabetes mellitus can improve the quality of life through specific behavior planning. In the theory of planned behavior, the intentions are needed to bring up a person's behavior. A person can act on his intentions if he has control over his behavior. To control the behavior, the role of locus of control is required. Therefore, the research was conducted to investigate the effect of locus of control on the intention of diabetes mellitus patients in performing the diabetes mellitus control. This type of research was explanatory research using cross sectional design. The instrument of diabetic locus of control scale was used to collect the data. Consecutive sampling technique was used to obtain 134 samples. The data were analyzed by simple linear regression. The findings showed that 88,1% of respondents tend to have an internal locus of control and 98,6% of respondents have a strong intention to control the DM. Simple linear regression test results indicate that the locus of control significantly affect the diabetic patients' intention to perform the control ( $p=0,032$ ).

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The findings of the effect of locus of control on the intention of DM patients have implications for the need of the provision of information and positive support consistently in order to become a source of a filler control center that initiated the emergence of a strong intention to conduct the DM control.

**Keywords:** Locus of Control; Intentions; Behavior of DM Control.

## **1. Introduction**

Diabetes mellitus is a group of metabolic diseases with hyperglycemia characteristic that occurs due to the abnormalities in insulin secretion, insulin action, or both [1]. There are two types of diabetes mellitus, namely diabetes type I/juvenile diabetes caused by beta cell destruction that leads to the absolute insulin deficiency and type II diabetes caused by relative insulin deficiency till the defects in insulin secretion with insulin resistance [2].

According to the International Diabetes Federation (IDF), in 2013, 382 million people in the world have diabetes mellitus that consist of 198 million male and 184 million female. Most of them were in the age range between 40 and 59 years old. Eighty percent of them live in low and middle income countries. If this trend continues, it is estimated that by 2035, the number of people with diabetes will increase to reach 592 million people, or one out of 10 adults will suffer from diabetes. This equates to approximately three new cases every 10 seconds or nearly 10 million per year. The largest increase will be more dominant in the developing countries. Indonesia was in the seventh rank in 2013 with the number of cases of DM 8,5 million people or 5,5% of the total adult population in Indonesia. It is estimated that by 2035, the number of people with diabetes will increase to 14,1 million people [3]. Increasing cases of diabetes mellitus also occurs at the district/city, especially in the city of Makassar. Based on the data taken from the Health Department of Makassar (2012), the incidences of diabetes mellitus in 2012 from January to December are as many as 7.000 cases [4].

Increasing the DM cases is continuously due to the problems on the individual behaviors related to the control of diabetes mellitus, such as the tendency of the patients to consume food is not balanced, rich in fat and energy but low in vitamins, minerals and fiber, followed by Sedentary lifestyle and low physical activity conflicting each other worsen the condition of the patients [5]. The patients with diabetes showed the difficulty to regulate their own behavior diet [6].

One of the theories of social psychology, which is most often used to predict the behavior, is the Theory of Planned Behavior (TPB) that makes the intention as a central factor for displaying a behavior. A person can act based on the intention or the intention is only if he has control on his behavior [7]. Walker (2001) says that in the area of health, control has a positive relationship with health conditions [8]. When an individual is able to determine or influence what will happen to him, then that individual is referred to in control. Control is one of the factors that determine the health behavior and health condition of individuals. Every individual has different perception of the control that exists in him [9]. To control the behavior, the role of the control center (locus of control) is required which consists of two aspects, namely internal and external [10]. This study was aimed to determine the effect of locus of control on the intention of DM patients in performing the DM control.

## **2. Materials and Methods**

This type of research is explanatory research using cross sectional design conducted in 8 locations consisting of three hospitals and five public health centers in the city of Makassar. The unit of observation is diabetes mellitus treated in the study site. A total of 143 patients were obtained using consecutive sampling technique. The distribution of the samples in eight research sites was adapted to the proportion of the patients with diabetes mellitus number of visits per month. Collecting data used diabetic instrument locus of control scale and intention diabetic control. The data were analyzed using multiple linear regression test.

## **3. Results and Discussion**

### **3.1 Research Results**

The frequency distribution of the respondents' characteristics indicates that the most respondents are in the range age group of 46-55 years (35,7%), male sex (52,4%), high school educated (45,5%), have been suffering from diabetes for more than 5 years (48,3%), and have no complications of DM (55,9%). Most respondents are more likely to have an internal locus of control, ie, 88,1% and 98,6%. The patients have a strong intention to exercise the DM control.

The distribution of the respondents' intention based on the control center dimension indicates that there are 98,4% of the respondents with a tendency of the internal locus of control have a strong intention to control the diabetes, and 100% of the respondents with a tendency of the external locus of control also have a strong intention to conduct the DM control. Simple linear regression test results indicate that the control center (locus of control) significantly affect the intention of the DM patients to perform the DM control ( $p=0,032$ ).

### **3.2 Discussion**

Intention diabetic control assesses the patients' determination unwilling to want or do not want to control the DM. The intention to control is determined by the positive attitude of the patients toward the control, the patients' confidence in following/approving the views of others, and the good perception that he can control the behavior that will be created. In other words, the accumulation of attitudes, subjective norms, and perceived behavioral control produces the intentions.

People with diabetes have a strong intention to want to conduct the control. The intention appears because of the contributions from the control center, both from internal and external. The statistical test results show that the control center (locus of control) significantly affect the patients' intention to the DM control.

Health behavior is a rational process that always preceded by the intention to act or behave in certain [11]. How the patients rationalize the behavior of control involving the various sources coming from the locus of control to become an intentional facilitator. Patients with both internal and external locus collectively have a strong intention but it is with different sources of the intentional formation.

**Table 1:** Frequency Distribution of the Respondents' Characteristics (N=143)

Respondents' Characteristics	Total (n)	Percentage (%)
<b>Range of Age Group</b>		
26-35 Year	1	0.7
36-45 Year	24	16.8
46-55 Year	51	35.7
56-65 Year	43	30.1
>65 Year	24	16.8
<b>Sex</b>		
Male	75	52.4
Felame	68	47.6
<b>Last Educational Level</b>		
Unschoolled	7	4.9
Elementary School	22	15.4
Secondary School	22	15.4
High School	65	45.5
Diploma/Bachelor	26	18.2
Magister	1	0.7
<b>Old Suffering from DM</b>		
<1 Year	17	11.9
1-5 Year	57	39.9
>5 Year	69	48.3
<b>Complication</b>		
No	80	55.9
Yes	63	44.1
<i>Locus of control</i>		

Internal	126	88.1
External	17	11.9
Intention		
Strong	141	98.6
Weak	2	1.4

**Table 2:** The Effect of Locus of Control on the Intention of DM Patients in Performing the DM Control

Intention	Internal LoC		External LoC		B	t	P
	n	%	n	%			
Strong	124	98.4	17	100.0	-0.156	-2.164	0.032
Weak	2	1.6	0	0.0			

The patients’ intention, which is dominated by internal locus, is derived from the magnitude of skills to be able to behave. While the patients’ intention, which has the external locus dominant, is formed because of the other people who are expected to control their behavior.

The patients of DM express a wish to reduce the symptoms of diabetes by controlling blood glucose levels on a regular basis, intend to create and maintain health by planned eating and exercising, hope to improve the quality of life, and want to prevent acute and chronic complications. For the patients that have complications, they intend to reduce the rate of progression of complications by complying planned meal, exercising regularly, dutifully taking medicine, and avoiding stress. Various wishes of the patients can be met if they perform the DM control properly.

Several studies outside of the health field have linked locus of control with intention. Gray-Stanley and the University of Illinois at Chicago (2008) reported that an internal locus of control is not significantly associated with a lower intention to leave the job [12]. Rahim & Psenicka (1996) found that internal locus of control mediates the relationship between job stress and intention to leave the job [13]. Blau (1977) and Allen *et al* (2005) concluded that the more tendencies of locus of control toward the internal, then the workers’ intention will be higher to resign [14, 15]. Lewin & Fresh (2010) found that external locus of control and emotional-focused coping can improve the sales force intention to resign from his job [16]. Some of these studies show inconsistent findings on the correlation between locus of control and the intention to quit the job. This is based on the nature of the locus of control which is static based on the circumstances that accompanied. The individuals, who work as a salesperson, will often meet with a variety of people who potentially offers a better job so that the dominance of external locus becomes strong. It is different from the people working as an

employee who has the integrity and the specific capabilities that strengthen the internal locus and feel easy to get a job after quitting so internal locus will reinforce the intention to resign.

The findings of the effect of locus of control on the intention of DM patients have implications for the need of the provision of information and positive support consistently in order to become a source of a filler control center that initiated the emergence of a strong intention to behave.

#### **4. Conclusion**

Locus of control significantly affects the intention of the DM patients in performing the control. Patients with both internal and external locus collectively have a strong intention but it is with different sources of the intentional formation. The patients' intention, which is dominated by internal locus, is derived from the magnitude of skills to be able to behave. While the patients' intention, which has the external locus dominant, is formed because of the other people who are expected to control their behavior.

#### **5. Recommendation**

Patients with diabetes mellitus should be active in seeking information and positive support regularly in order to become a source of a filler control center that initiated the emergence of a strong intention to conduct the DM control.

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