

CHAPTER I

INTRODUCTION

1.1 Research Background

Diabetes mellitus is a group of metabolic diseases characterized by hyperglycemia that occurs due to abnormalities in insulin secretion, insulin action, or both. ¹There are two types of Diabetes Mellitus including type 1 Diabetes Mellitus, which is caused by the destruction of beta cells of the islets of Langerhans which resulting in absolute insulin hormone deficiency and type 2 Diabetes Mellitus, which resulting from insulin resistance so that the insulin hormone in the body is unable to function properly..² Type 2 diabetes mellitus is a form of metabolic disorder characterized by high blood sugar levels due to the body's inability to respond to or produce insulin. This hormone helps stabilize blood sugar (glucose) levels by stimulating cells to uptake glucose and inhibiting liver glucose production.³

The World Health Organization (WHO) states that 422 million adults suffer from diabetes, and in 2016, it was estimated 1.6 million deaths were directly caused by diabetes. According to data from the International Diabetes Federation (IDF), Indonesia is on a diabetes alert status because it ranks 7th out of 10 countries in the world with the highest number of diabetes patients. WHO data indicated that the figure reached 48.30%, slightly higher than the prevalence rate of diabetes in Indonesia, which stands at 10.9%, and is also predicted to continue to increasing. The number of people with Diabetes Mellitus in Indonesia based on Riskesdas data in 2018 by the Ministry of Health shows an increase of 1.6% from 2013 to 2018 with approximately 4 million patients. Risk Factors for Diabetes Mellitus in Indonesia. Globally, it is estimated that 422 million adults were living with diabetes in 2014. The patient's lack of understanding regarding their treatment will increase patient non-compliance in medication adherence. This factor can occur due to lack of information and communication between healthcare providers and patients, so patients self-managing the medication therapy they receive.⁴

¹ (Wahyuni et al., 2019)

² (Patandean et al., 2023)

³ Yovani Tria Ananda, "Medical Education Study Program, Department of Medicine, Faculty of Medicine, University of Lampung, Bandar Lampung," 2022.

⁴ (Puspita & Khairunnida, 2022)

Diabetes Mellitus (DM) patient management consists of four pillars, namely counseling, diet, exercise (physical and mental), and pharmacological intervention. Diabetes education is one of the best steps to improve self-care in patients with diabetes mellitus. It can influence lifestyle changes and is an important part of diabetes management and treatment. The goal of diabetes education is to ensure that patients with diabetes mellitus are effectively involved in life by improving adherence to treatment and preventing complications.

Increased knowledge and ability of patients to understand and implement self-care will determine the success of diabetes management with blood glucose levels within normal limits. Efforts to prevent and control diabetes mellitus can be carried out through education, early detection of PTM risk factors and standardized management, one of which is glycemic control. Glycemic control can prevent complications and glycemic control can be assessed from several aspects, including instantaneous blood sugar and long-term blood glucose. and long-term blood sugar monitoring through diet. Treatment compliance is the amount to which patients follow the directions of medical personnel compliance is also applied by the active and voluntary participation of patients in the management of the disease suffered.⁵

1.2 Research Problem

The problem formulation in this study are:

1. What is the effect of education on diabetic outpatients on increasing knowledge and glycemic control at Ngawi Hospital ?
2. What are the changes in random blood sugar measurements in type 2 diabetes mellitus patients towards education about knowledge and glycemic control at Ngawi Hospital?

1.3 Research Objectives

The objectives of this study were:

1. Knowing the effect of education on diabetic outpatients about knowledge and glycemic control at Ngawi Hospital.
2. Knowing the application of the results of diabetic outpatients to education about

⁵ agil Muhammad Syahrul1, , Yusran Haskas 2, And , Indah Restika Bn, "The Relationship Between Glycemic Control and Treatment Compliance with Hospital Readmission Incidents in Diabetes Mellitus Patients" 17 (2022).

knowledge and glycemic control at Ngawi Hospital..

1.4 Research Benefits

1. Theoretical Benefits

This research is expected to increase knowledge by controlling education regarding knowledge and glycemic control in Diabetes Mellitus patients..

2. Practical Benefits

This research is expected to provide useful information and insights for Diabetes Mellitus patients as well as the patient's view of Diabetes disease to keep paying attention to a healthy lifestyle and way of life..

1.5 Authenticity Research

Research on education and knowledge and glycemic control in Diabetes Mellitus patients has been carried out by several researchers as shown in table 1 below.

Table 1. Reasearch Authenticity

Research Title	Research Methode	Variable	Results	Research Differences
Effectiveness of Diabetes Mellitus Patient Education on Knowledge and Outpatient Glycemic Control at Anwar Medika Hospital	Experimental	Dependent : Effectiveness of EducationDiabetes Patients Mellitus Independent : Knowledge and Glycemic Control Outpatient at Hospital Anwar Medical	In blood sugar measurements,researchers get sugar random blood from medical recordspatient, initial random blood sugar highest namely 440 mg/dl while on blood sugar the highest last random is 370 mg/dl. There is results average decrease in sugar random blood before being given education after being giveneducation for early GDA that is obtained flat flat 257.80 mg/dl whereas last GDA average 191.61 mg/dl, results $p < 0.05$ ($p = 0.001$, $\alpha = 0.05$) shows there is a difference significant. decline mark average random blood sugar which is significant ($p=0.001$) from 257.80 mg/dl to 191.61 mg/dl after providing education to respondents.	Dependent : One – Group Pre test-Post test Design. Independent : Knowledge and Control Glycemic age, level education, type sex, old DM, complications.

Connection Control Glycemic and Compliance Treatment With the Event Hospital Readmission In Patients Diabetes Mellitus.	Experimental	<p>Dependent : Control Relationship Glycemic</p> <p>Independent : Compliance Treatment With the Event Hospital Readmission On Diabetes Patients Mellitus.</p>	<p>patients (92.3%), as well as Respondent Which own control glycemic not enough Goodbut did not experience hospital readmission as many as 1 patient (7.7%). also shows respondents Which to choose compliance treatment Which Good will but experienced hospital readmission as many as 9 patients (33.3%) and respondents who have compliance Which Good And not experiencing hospital readmission as many as 18 patient (66.7%). In Test Continuity Correction, significant value obtained of $p = 0.002$ with show p < 0.05.</p>	<p>Dependent : Compliance Treatment on Diabetes Patients Mellitus</p> <p>Independent : Hospital Incident Readmission On Diabetes Patients Mellitus.</p>
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