

## Relationship between the Implementation of Discharge Planning and Recurrence of Hyperglycemia in DM Patients at the Pandan Regional General Hospital, Central Tapanuli Regency in 2020

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### ABSTRACT

Diabetes mellitus (DM) is a metabolic disorder characterized by an increase in blood glucose levels due to interference with insulin action, or both. Hyperglycemia is the definition of a condition when blood glucose levels increase beyond normal limits. Discharge Planning is a process of interaction between multidisciplinary health workers, patients, and families who collaborate to provide and help nurse continuity that patients need. The purpose of this study was to determine the relationship between the implementation of discharge planning and recurrence of hyperglycemia in DM patients at the Pandan Regional General Hospital, Central Tapanuli Regency in 2020. The research sample was 55 respondents using simple random sampling technique. This type of research is quantitative with descriptive correlation method with cross sectional research design and data collected from respondents using a questionnaire sheet. The results of statistical tests carried out with a confidence level of 95% with  $\alpha = 0.05$  obtained the value of  $p = 0.001$ , then  $p < 0.001 < \alpha (0.05)$ . Or  $H_0$  is rejected,  $H_a$  is accepted, thus there is a relationship between the implementation of Discharge planning and recurrence of hyperglycemia in DM patients at the Pandan Regional General Hospital, Central Tapanuli Regency in 2020. Suggestions for the Pandan Regional General Hospital are expected to be used as a reference in formulating nursing care planning in an effort to increase self-care knowledge and attitudes to DM clients.

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### 1. Introduction

Diabetes Mellitus (DM) is a metabolic disorder characterized by increased blood glucose levels due to disturbances in insulin action, or both (Black & Hawks, 2009). The prevalence of Diabetes Mellitus is increasing every year, globally in 2016 amounted to 422 million and is estimated to increase to around 592 million sufferers in 2035 (WHO, 2016). the most diabetes in the world (PERKENI, 2015).

The number of DM sufferers in the world is increasing every year. This can be caused by an increase in the population, age, obesity prevalence and decreased physical activity (Praise, 2015). according to the International Diabetes Federation (IDF) in 2017 the prevalence of DM in the world reached 424.9 million people and is expected to reach 628.6 million in 2045. Indonesia is the country with the sixth most DM sufferers in the world with the number of DM sufferers reaching 10, 3 million people It is estimated that this number will continue to increase until it reaches 16.7 million people in 2045. Data from various global studies show that DM is a major health problem. This is due to an increase in the number of people with diabetes from year to year. in 2015 stated that about 415 million adults had diabetes,

Based on data from Risekdas (2013), there was an increase in the prevalence of diabetes diagnosed in 2007 by 1.1% to 2.4% in 2013. Research and Development also mentioned several unique facts related to diabetes in Indonesia, namely the prevalence of diagnosed diabetes in women (1, 7%) greater

than in men (1.4%). Diabetes diagnosed in urban communities (2.0%) is also higher than in rural areas (1.0%). In addition, Riskesdas also mentions that the prevalence of diabetes mellitus increases with increasing age, but at age > 65 years it tends to decrease (Balitbang Kemenkes RI, 2013).

Based on the data obtained from the Integrated Disease Surveillance Data (STP) in 2008, it can be seen that the highest number of cases was Diabetes Mellitus with the number of Diabetes Mellitus cases reaching 918 patients. Data Riskesdas (2013) the prevalence of Diabetes Mellitus diagnosed by the health worker (health worker) accompanied by symptoms obtained data for Samosir 0.3%, Dairi 1%, Serdang Bedagai 0.6%, North Tapanuli 0.3%, Diabetes Mellitus prevalence for the city Medan is 2.7% and the prevalence of Diabetes Mellitus for North Sumatra Province is 1.98%, while the latest data released by the Indonesian Ministry of Health stated that the national prevalence of DM was 5.7% (Kemenkes RI, 2013).

Hyperglycemia is the definition of a condition when blood glucose levels increase beyond normal limits. Hyperglycemia is one of the early symptoms of a person experiencing metabolic disorders, namely diabetes mellitus (Ministry of Health, 2014). Basic Health Research Data 2013 shows that the number of diabetics with special characteristics, namely hyperglycemia conditions in Indonesia has increased since 2007 by 5.7% to 6.8% in 2013. Hyperglycemia can be caused by the inability of the pancreas to produce insulin or the inability of the body to produce insulin. in using insulin that is produced properly (Ministry of Health, 2014).

Based on a preliminary study conducted by researchers, the results of the data obtained by researchers in the initial survey at the Pandan Regional General Hospital showed that there were 120 inpatients who had Diabetes Mellitus. Where patients who have Diabetes Mellitus are more susceptible to the elderly.

*Discharge planning* is a process of interaction between multidisciplinary health workers, patients, and families who collaborate to provide and manage the continuity of nurses that patients need (Nursalam, 2015). Health workers must be able to provide health education to patients which includes nutrition, activities/exercise, medicines and special instructions, namely signs and symptoms of the patient's illness. Nursing activities related to management functions include planning, organization, manpower, direction, and control (Sulistiyawati W, 2016).

Several factors have caused the implementation of discharge planning to not be optimal, including: human resources who do not understand the importance of discharge planning, the unavailability of standard operating procedures (SOPs) and appropriate discharge planning guidelines, as well as obstacles originating from personnel factors, namely providers and staff. service recipients (Hardivianty, 2017).

## 2. Research Methods

The type of method used is quantitative with a descriptive correlation method using a cross sectional design to determine the relationship between the implementation of discharge planning and recurrence of hyperglycemia in DM patients at the Pandan Regional General Hospital, Tapanuli Regency in the middle of 2020. one time, using a questionnaire sheet research instrument. Operational definitions are explanations of all variables and terms used in operational research so that ultimately it makes it easier for readers to understand the meaning of research. The Operational Definition is useful for directing the measurement or observation of the variables concerned and the development of instruments (Notoatmodjo, 2010).

### 2.1 Data processing

According to Notoatmodjo (2010) data processing generally goes through the following steps:

a. Editing

The results of interviews, questionnaires, or observations from the field must be edited first. In general, editing is an activity to check and improve the contents of the forms and questionnaires.

b. coding

After all the questionnaires have been edited or edited, then coding or coding is carried out, namely changing the data in the form of sentences or letters into numeric data or numbers.

c. Processing

The answers from each respondent in the form of codes (numbers or letters) are entered into a computer program or software.

d. Cleaning

If all data from each data source or respondent has been entered, it is necessary to re-check to see

any code errors, incompleteness, and so on, corrections or corrections are made.

## 2.2 Research Code of Ethics

The ethical problem of nursing research is a very important issue in research, considering that nursing research is directly related to humans, the ethical aspect of research must be considered (Hidayat, 2007). Ethical issues that must be considered include the following:

### a. Informed Consent

Researchers gave informed consent in conducting research in the form of a consent form to become a respondent so that the subject understood the aims and objectives of the study.

### b. Anonymity (Unnamed)

The researcher did not include the names of the research samples on the questionnaire sheet. The researcher only wrote the code on the data collection sheet.

### c. Confidentiality

Researchers will not disclose things that are confidential to respondents which will be reported as research results.

## 2.3 Data analysis

### a. Univariate Analysis

This analysis is used to describe all research variables, both independent and dependent variables are presented in the form of frequency distribution tables and narratives.

### b. Bivariate Analysis

Bivariate analysis was used to examine the relationship between the implementation of discharge planning and the recurrence of hyperglycemia in DM patients. Data processing was carried out with a significant test on the results. The results of statistical tests were carried out with a 95% confidence level with  $\alpha = 0.05$  obtained  $p$  value = 0.001 then  $p < 0.001 < (0.05)$ . Or  $H_0$  is rejected,  $H_a$  is accepted, then there is a significant relationship.  $\alpha$

## 3. Results and Analysis

### 3.1 Characteristics of Respondents

The distribution of respondents' identities by age can be seen in the following table:

**Table 1**

Distribution of Identity Based on Characteristics of Respondents  
At the Pandan Regional General Hospital, Tapanuli Regency in the middle of 2020.

Age	f	%
26 - 35 Years	1	1.8
36 - 45 Years	11	20.0
> 46 Years	43	78.2
Total	55	100
Gender	f	%
Man	30	54.5
Woman	25	45.5
Total	55	100
Education	f	%
SD	20	36.4
junior high school	12	21.8
senior High School	16	29.1
College	7	12.7
Total	55	100
Operation experience	f	%
Once	55	100
Never	0	0
Total	55	100

Based on the table above, it can be seen that the majority of respondents aged > 46 years were 43 people (78.2%) and the minority respondents aged 26-35 years were 1 person (1.8%). For gender the majority of respondents were male as many as 30 people (54.5%) and the minority of female respondents were 25 people (45.5%). And for the education category, the majority of respondents had elementary education as many as 20 people (36.4%) and the minority of respondents had tertiary

education as many as 7 people (12.7%). And the majority of respondents had surgery.

### 3.2 Discharge Planning

The distribution of respondents based on discharge planning at the Pandan Regional General Hospital, Tapanuli Regency in the middle of 2020 can be seen in the following table:

**Table 2**  
Distribution of Respondents Based on Discharge Planning

<i>Discharge Planning</i>	f	%
Implemented	32	58.2
Not Implemented	23	41.8
Total	55	100.0

Based on the table above, it can be seen that the majority of Discharge Planning were carried out by 32 people (58.2%) and the minority of Discharge Planning were not carried out as many as 23 people (41.8%).

### 3.3 Relapse of Hyperglycemia

The Distribution of Respondents' Identity based on Religion can be seen from the following table:

**Table 3**  
Respondents Based on Recurrence of Hyperglycemia at the Pandan Regional General Hospital, Tapanuli Regency in the middle of 2020

<i>Relapse of Hyperglycemia</i>	f	%
Never Relapse	33	60.0
Ever Relapse	22	40.0
Total	55	100.0

Table 3 can be seen that the majority of Hyperglycemia Relapses were 36 people (65.5%) and 9 people (34.5%).

#### a. Bivariate Analysis

### 3.4 The relationship between the implementation of discharge planning on the recurrence of hyperglycemia

**Table 4**  
Distribution of the relationship between the implementation of discharge planning and the recurrence of hyperglycemia at the Pandan Regional General Hospital, Tapanuli Regency in the middle of 2020

N O	<i>Discharge planning</i>	Not Once				Jlh	P
		Once Relapsed		Relapsed			
		F	%	F	%		
1.	Implemente d	25	78.1	7	21.9	32	100
			34.8		65.2		100
2.	Not Implemente d	8		15		23	
Total		33	60	22	40	55	100

Based on table 4 shows that of the 50 respondents who carried out discharge planning who had never relapsed as many as 25 people and had relapsed as many as 7 people. While the discharge planning was not implemented, 8 people had never relapsed and 15 people had relapsed.

The results of statistical tests carried out with a 95% confidence level with  $\alpha = 0.05$  obtained p value = 0.001 then  $p < 0.05$ . Or  $H_0$  is rejected,  $H_a$  is accepted as such  $\alpha$  Executor relationshipan Discharge planning with recurrence of hyperglycemia in DM patients at the Pandan Regional General Hospital, Tapanuli Regency in the middle of 2020.

### 3.5 Pdiscussion

#### a. Characteristics of Respondents

##### 1. Age

Based on research conducted on 55 respondents, it was found that the majority of respondents were aged >46 years with a total of 43 people (78.2%) and a minority of 26-35 years with a total of 1 person (1.8%). Tarwoto (2012) stated that one of the risk factors for type II diabetes mellitus is age over 45 years. In line with increasing age the occurrence of functional disorders of the workings of insulin. If

insulin work is disturbed, the hormone that regulates blood sugar levels will result in diabetes mellitus. This is in line with research conducted by Tjekyan (2014) which states that there is a significant relationship between the age of the respondent and the incidence of Diabetes Mellitus.

## 2. Gender

The results of the study based on the distribution table conducted to 55 respondents can be seen that the majority of the male gender is 30 people (54.5%). Research by Malta, et al (2017) regarding a national health survey of factors related to diabetes shows that the prevalence of diabetes mellitus cases is higher in women than men. Although these patients were dominated by female patients, gender was not significantly associated with the occurrence of Diabetes Mellitus. This is in accordance with Jelantik and Haryati (2014) who state that there is no proven significant relationship between gender and the incidence of Diabetes Mellitus.

## 3. Education

Based on the results of this study, the majority of respondents who were sampled in patients with hyperglycemia were respondents with an elementary education level of 20 respondents (36.4%). A low level of education will affect the patient's ability to receive understanding regarding the implementation of diabetes mellitus. Tjekyan's research (2014) states that there is a significant relationship between the respondent's last education and the incidence of diabetes mellitus.

## 4. Operation Experience

The results of the research based on the distribution table conducted to 55 respondents can be seen that the majority have been 55 people (100%). DM is a risk factor for a less than optimal perioperative outcome in neurosurgery patients. Patients with DM are associated with both major (wound infection, peripheral nerve root lesions, cardiac arrhythmias, acute renal failure, cerebrovascular events) and minor (urinary tract infection, paralytic ileus, electrolyte deficiency). Perioperative regulation of non-optimal blood sugar levels contributes to increased morbidity and mortality and leads to pre-existing illness (Jurnal Neuroanastesi Indonesia, 2018).

### 3.6 Discharge Planning At the Pandan Regional General Hospital, Tapanuli Regency in the middle of 2020

Based on the results of the calculations given to 55 respondents at the Pandan Regional General Hospital, the table shows that the majority of Discharge Planning were carried out as many as 47 people (85.5%). Discharge Planning can reduce hospitalization days, prevent recurrence, improve the development of health conditions and reduce the burden of care on the family. Several studies even Discharge Planning in Interdisciplinary Bedside Rounds (SIBR) in the care of clients with diabetes mellitus stated that Discharge Planning had an important effect in reducing disease complications, preventing recurrence and reducing morbidity and mortality rates (Setiawan, 2015). This is in line with the results of research (Nita Eka,

### 3.7 Relapse of Hyperglycemia At the Pandan Regional General Hospital, Tapanuli Regency in the middle of 2020

Based on the results of calculations given to 55 respondents at the Pandan Regional General Hospital, the table results obtained that the majority of Hyperglycemia Relapses were 36 people (65.5%). The results of this study are in line with research conducted by (Dg Mangemba, 2017) which states that there is an effect of discharge planning on self-care behavior of Diabetes mellitus patients who found research results where the level of self-care in patients with the implementation of discharge planning experienced an increase in healing.

### 3.8 Relationship between implementation of discharge planning and recurrence of hyperglycemia in diabetes mellitus patients

The results of statistical tests carried out with a 95% confidence level with  $\alpha = 0.05$  obtained p value = 0.000 then  $p < \alpha (0.05)$ . Or  $H_0$  is rejected,  $H_a$  is accepted as such Executor relationship Discharge planning with recurrence of hyperglycemia in DM patients at the Pandan Regional General Hospital, Tapanuli Regency in the middle of 2020. (Atak, 2010) states that patients who are given information about the disease and how to treat it will show positive results in managing their disease. According to (Noris, 2002) discharge planning is very useful in increasing the knowledge of diabetes and their families about Diabetes Mellitus and its management as well as improving the psychosocial status of diabetes and their families related to beliefs and attitudes towards the treatment program and coping mechanisms.

#### 4. Conclusion

From the results of research regarding the relationship between discharge planning and recurrence of hyperglycemia in DM patients at the Pandan Regional General Hospital, Tapanuli Tengan Regency in 2020, it can be concluded that:

There is a significant relationship between the implementation of discharge planning and recurrence of hyperglycemia in Diabetes Mellitus patients at the Pandan Regional General Hospital, Tapanuli Tengan Regency in 2020.

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