

The Effect Of Diet Adjustment On Blood Sugar Fluctuation In Patients Of Diabetes Mellitus Type II In RSUD Raden Mattaher Jambi In 2017

Vivianti Dewi

Jurusan Keperawatan Politeknik Kesehatan
Kementerian Kesehatan Jambi
Jambi, Indonesia
vivianti_dewi@yahoo.com

Yellyanda

Jurusan Keperawatan Politeknik Kesehatan
Kementerian Kesehatan Jambi
Jambi, Indonesia
yellyanda21@gmail.com

Mashudi

Jurusan Keperawatan Politeknik Kesehatan
Kementerian Kesehatan Jambi
Jambi, Indonesia
Mashudi27@yahoo.com

Abstract-Diabetes Mellitus is a group of heterogeneous disorders characterized by increased levels of glucose in the blood or hyperglycemia, with criteria, namely: random plasma glucose > 200 mg / dl (11.1 mmol / L), fasting plasma glucose / nuchter > 140 mg/dl (7.8 mmol / L) and plasma glucose from the samples taken 2 hours later have consumed 75 g carbohydrates (2 hours postprandial (pp)) > 200 mg/dl (11.1 mmol / L). Glucose control or fluctuations blood sugar in patients with Diabetes Mellitus with adherence or adherence to Diit Diabetes Mellitus This research is a quantitative study with a quasi-experimental design where this design reveals a causal relationship by involving the control group in addition to the experimental group. The dependent variable in this study is fluctuations in sugar content blood, and the independent variable is adherence to the DM diet, the population and sample in this study were all patients who came to the police clinic akit in RSU Raden Mataher Jambi. This research will be conducted in June 2017 at the Internal Medicine Polyclinic at Raden Mataher Jambi General Hospital. Univariate and bivariate data analysis with One Way ANOVA test. The results showed that of the 22 respondents who underwent dietary compliance found an average value of 82.14 with a median value of 81.5 standard deviations of 81.5% with a minimum value of 75 and a maximum value of 94. The majority of clients had blood sugar values tall one. There was no effect of diet adherence on blood sugar fluctuations in Type II Diabetes Mellitus patients at Raden Mataher Jambi Hospital with p-value 0.225. It is hoped that the results of this study will be an evaluation material for officers and patients who suffer from type II diabetes mellitus that the importance of maintaining blood sugar stability

Blood Sugar Keyword-Fluctuation, Diit adherence, Type II Diabetes Mellitus

I. INTRODUCTION

Diabetes mellitus, known in Indonesia with the term diabetes is a metabolic disorder caused by many factors such as lack of insulin or the body's inability to utilize insulin (Insulin resistance), with symptoms in the form of chronic hyperglycemia and impaired metabolism of carbohydrates, fats and proteins, as a result of deficiency of insulin hormone secretion, insulin activity, or both, glucose transporter deficiency or both deficiencies. Changes in times and lifestyle changes that are characterized by changes in diet such as ready-made food and ready-to-eat foods that

have lost a lot of biala fiber consumed for a long time have a massive influence on the occurrence of degenerative diseases, one of which is Diabetes Mellitus.

DM is a disease that cannot be cured but can be controlled by proper management. The results of the DM Management and Prevention consensus that there are four pillars, namely education, medical nutrition therapy, physical exercise and pharmacological interventions (PERKENI, 2011). One of the pillars of medical nutrition therapy requires dietary compliance which is a person's compliance in carrying out a diet by the applicable rules. The right diet is a fundamental element in the management of DM patients, because by giving a proper and regular diet by the recommendation to reduce the risk of complications. Long-term adherence to eating planning is one aspect that raises challenges in the implementation of diabetes

Diet is human behavior in meeting their needs for food which includes attitudes, beliefs, types of food, frequency, processing method and food selection. Someone who has a regular diet, especially those who suffer from DM, will be easier to run a diet that has been recommended so that complications that can be caused by DM can be prevented. Conversely, if a person is primarily suffering from DM has an irregular diet, it will tend to be more difficult in carrying out a diet that has been recommended. So that complications from DM will be experienced by these patients.

Efforts to reduce blood sugar levels that are not normal in people with DM are the adherence to the DM diet. Because with adherence to the DM diet, blood sugar levels of DM patients can be more controlled. So that DM patients can avoid various kinds of complications that can be caused by DM.

Diet regulation is a dietary arrangement based on lifestyle (behavior) and patterns of eating habits, nutritional status and other special factors. Gibney (2009) states that eating behavior is a person's willingness to control the food consumed or the choice of the right food to consume. Factors that influence a person's eating behavior are hunger, eating habits, culture, mod, and the media. Diet behavior like this looks easy, but many DM sufferers fail to carry out a diet. Given this, the officer needs to provide technical guidance to the patient regarding the right amount, schedule

and type of diet with various sample menus along with the size of the calorie count.

Diet regulation is a dietary arrangement based on lifestyle (behavior) and eating habits patterns, nutritional status and other unique factors. Gibney (2009) states that eating behavior is a person's willingness to control the food consumed or the selection of the right food for consumption.

Factors that influence a person is eating behavior are hunger, eating habits, culture, mod, and media. Diet behavior like this looks easy, but many people with DM fail to carry out a diet. Considering this, the officer needs to provide technical guidance to patients regarding the exact diet of number, schedule and type with various menu examples along with the size of the calories.

DM prevalence in Jambi Province also tends to increase every year. The increase occurred along with an increase in household expenditure. Based on the results of the Basic Health Research, the prevalence of DM in Jambi Province is 0.7%. Prevalence in urban areas is higher than in rural areas

According to data obtained from the Medical Records of the General Hospital of Raden Mataher Jambidi Poli Clinic, internal medicine is based on secondary data in 2014 that DM ranked second out of the ten most diseases. DM prevalence continues to increase every year. The prevalence rate of DM patients in 2012 was 3,489 people. In 2013 the prevalence of DM increased to 3598 people, and in 2014, the prevalence of DM increased again to 3674 people.

II. METHODS

This research is quantitative research with the cross-sectional design where this design reveals the relationship between independent and dependent variables carried out in one way or called a cross-sectional design (Nursalam, 2009). The study population was all DM patients who were treated at the Internal Medicine Polyclinic of Raden Mattaaher Hospital in Jambi in April-May 2017.

In this study sampling using Accidental Sampling technique, which is a sampling method that is done by a chance to meet (Hidayat, 2009; 74). The sample in this study were DM patients who were hospitalized at the Internal Medicine Polyclinic of Raden Mattaaher General Hospital Jambi in May 2017 and met the inclusion and exclusion criteria.

The inclusion criteria in this study were:

1. DM patients with or without comorbidities who are outpatient in Internal Medicine Polyclinic Rd. Mattaaher Jambi.
2. Have received information and undergo therapy for diit DM hospital standards, namely eating, education and pharmacology settings.
3. Does not have acute complications such as hypoglycemia, diabetic ketoacidosis (KAD), hyperosmolar nonketotic (HHNK) hyperglycemic syndrome.
4. Willing to be the subject of research.

Exclusion criteria in this study were patients not willing to become respondents.

At this stage, the researcher chooses respondents according to the inclusion and exclusion criteria based on the patient's data in the polyclinic, then gives the respondents clear research information, and asks the patient's approval to become a respondent. Next, make research contracts with respondents. The last step the researcher interviewed by the questionnaire data on the characteristics of the respondents and the form recall pattern. Patients who were selected as respondents were made home visits. All respondents measured daily blood sugar levels for 3 (three) times to see fluctuations in blood glucose levels 5

III. RESULT

TABLE I. ANALYSIS UNIVARIAT RESULT

Age		
Age	F	%
20 – 35	5	22,7
>35	17	77,3
Total	22	100
Gender		
Gender	F	%
Male	8	36,
Female	14	63,6
Total	22	100

From Table 1 above shows that the majority of respondents aged 35 years were 17 (77.3%) and respondents aged 20-35 years were 5 (22.7%), the majority of type II diabetes mellitus respondents are female (14.6%) and 8 (36.4%) respondents are male.

TABLE II. OBEDIENCE OF PATIENT DIIT

Variable	N	Mean	Median	SD	Min	Max
Diit Obedience	22	82,14	81,5	4,764	75	94

The results of this study indicate that of the 22 respondents who underwent dietary compliance found an average value of 82.14 with a median value of 81.5 standard deviations of 81.5% with a minimum value of 75 and a maximum value of 94.

TABLE III. BLOOD SUGAR FLUCTUATIONS

Variable	N	Mean	Median	SD	Min	Max
Blood Sugar Fluctuation	22	2133,32	2103,5	183,073	1877	2509

The results of this study indicate that of the 22 respondents who underwent blood sugar fluctuations found an average

value of 2133.32 with a median value of 2103.05 standard deviation value of 183.073 with a limit of the minimum value of 1877 and a maximum value of 2509

TABLE IV. EFFECT OF DIET ADHERENCE ON BLOOD SUGAR FLUCTUATIONS

	Sum of squares	Df	Mean Squares	f	Sig
Between groups	285.390.356	12	40.449.196	1.667	0.225.
Within groups	218.438.417	9	24.270.935		
Total	703.828.773	21			

Based on the results of research that uses one way ANOVA test on diet compliance variables that calculated F value of $1.667 < 4.35$ F table with a significant $0.225 > 0.05$, it can be concluded that there is no effect of dietary adherence to blood sugar fluctuations in patients with Diabetes Mellitus Type II at Raden Mattaaher Jambi Hospital.

IV. DISCUSSION

Based on the results of research on diet compliance of type II diabetes mellitus patients, it was seen that all respondents consumed rice as a staple food. This shows that the rice consumed by the client is generally a food that is used to consumption, when interviewed with the client, the client states that it is difficult to follow the rules of eating by eating food without rice, so this is one of the triggers of an increase in blood sugar plus each client has aged the variety can be ensured that excessive consumption of carbohydrates in rice will aggravate the problem of type II diabetes mellitus.

Most respondents said that once a week they ate carrots because the carrots in question were provided in the form of soup, eating meat only once a month and rarely eating tomatoes. This is because a client undergoes a habit, based on the results of interviews conducted that respondents say meat, tomatoes and carrots are rarely consumed even though consuming fruits, vegetables and protein is essential in maintaining blood sugar stability.

The results of research conducted by Fitri (2013) examined the effectiveness of dietary settings to reduce blood glucose levels of Type II diabetes mellitus patients. The results showed that there were two differences in blood sugar examinations and three intervals. Based on the results of research that uses one way ANOVA test on diet compliance variables that calculated F value of $1.667 < 4.35$ F table with a significant $0.225 > 0.05$, it can be concluded that there is no effect of dietary adherence to blood sugar fluctuations in patients with Diabetes Mellitus Type II at Raden Mattaaher Jambi Hospital.

This is because the measurement of blood sugar assessment with consumption of food that is lived by the client by being given special treatment for the given diet

and this does not directly affect the client's healing process, especially to the decrease in blood sugar in type II diabetes mellitus clients.

The results of this study are in line with the results of research conducted by Salawati (2011) who examined the relationship of diet adherence with blood sugar levels in type II diabetes mellitus patients who sought treatment at the puskesmas at the sacred district of Kulon. The results showed that there was no adherence to diet with blood sugar levels with a p-value of $1,000 > 0.05$.

The results of this study are different from the research of Titin Windayanti (2004) which states that there is a significant relationship between diet adherence and blood sugar levels. The majority of DM patients who were respondents of this study were actually able to carry out diet obediently (93.8%), but the results of their blood sugar examination were still weak, namely, DM patients still had blood sugar levels exceeding normal (140 mg/dl). This is because in this study the recall was only carried out seven days, whereas to be able to reduce blood sugar levels of a DM patient at least takes two weeks or 14 days to carry out diet obediently so that most of the blood sugar of DM patients is not normal.

V. CONCLUSION

There was no effect of diet adherence on blood sugar fluctuations in Type II Diabetes Mellitus patients at Raden Mattaaher Jambi Hospital with p-value 0.225.

REFERENCES

- [1] Nursalam, (2009)., Health Methodology Rineka Cipta, Jakarta.
- [2] PERKENI. (2011). Consensus on the Management and Prevention of Type 2 DM in Indonesia. PB Perkeni
- [3] Smeltzer, S. C. & Bare, G.B. (2006). Medical-Surgical Nursing textbook, Brunner & Suddarth, the 8th edition of Jakarta, EGC
- [4] Soegondo S. Principles and Strategies for Diabetes Education. In: Soegondo S et al., Management of Integrated Diabetes Mellitus. Jakarta: FKUI Publisher Hall. 2007: 219
- [5] Soegondo, S., Soewondo, P. Subekti (2009), Management of Integrated Diabetes Mellitus, Guide to the Management of Diabetes Mellitus For Doctors and Educators, Jakarta FKUI Publishing Center.
- [6] RISKESDAS. (2013). Basic Health Research. Ministry of Health of the Republic of Indonesia.
- [7] World Health Organization. (2013). Global Health Observatory (GHO) Raised Blood Pressure Situations and Trends.
- [8] Brunner & Suddarth, 2001. Medical-Surgical Nursing Textbook, edisi 8. Jakarta: EGC
- [9] Ministry of Health R.I. (2008). Indonesian Health Profile. Jakarta

- [10] Indonesian Ministry of Health (2008). Basic Health Research Jambi Province, Ministry of Health's Health Research and Development Agency, Jakarta
- [11] Hidayat, A. Aziz. 2011. Midwifery Research Methods and Data Analysis Techniques. Jakarta: Salemba Medika.
- [12] Notoatmodjo. S. 2007. Health Promotion and Behavioral Sciences. Rineka Cipta, Jakarta
- [13] Suyono, S.,(2006), Disease in the fourth edition, the publishing center of the Department of Internal Medicine, Faculty of Medicine, University of Indonesia, Jakarta.
- [14] Suyono, Slamet. 2007. Pathophysiology of diabetes mellitus in Waspadi, S., Sukardji, K., Octariana, M. Diabetes Mellitus Diet Guidelines. Faculty of Medicine, University of Indonesia. Jakarta.