



Factors that Influence the Evening of Diabetes Melitus Type II in General Hospitals of Labuang Baji Makassar

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Abstract. Diabetes Militus DM was a disorder of metabolism, carbohydrate, protein and fat resulting from an imbalance between the availability of insulin and the need for insulin. The disorder may be absolute insulin deficiency, impaired insulin secretion by pancreatic beta cells, absence of strength or damage to insulin receptors, inactive insulin production and insulin damage before work. Objective of Research Knowing Risk Factors of Type 2 Diabetes Mellitus Incidence in patients at RSUD Labuang Baji Makassar. Design research The type of research conducted was observational research that was by doing observations on the object under study. The observation method used in this research was the control case observation method. The design of this study using *case control* design, also called *retrospective study* was an observational analytic epidemiological study that examines the relationship between certain health effects (disease or health condition) with certain risk factors. Total *population* of 45 people, and a sample of 45 respondents. Measuring tool used by questionnaires. The result in SPSS version 1.6 using 2×2 table with *Chi-Square* test with the level of significance table $\alpha = 0.05$. The result of bivariate study of dietary relationship was $pvalue = 0,000$, physical activity was $pvalue = 0,000$ and stress was $pvalue = 0,000$ about the incidence of diabetes mellitus type II. The conclusion in this research was the relationship of diet, physical activity, and stress of risk factor incident in RSUD Labuang Baji Makassar.

Keywords: Diet · physical activity · stress

1 Introduction

DM occurs when the insulin produced is not sufficient to maintain blood sugar within normal limits or if the body's cells are unable to respond inappropriately so that the typical complaints of DM will appear in the form of polyuria, oplidipsia, polyphagia, weight loss, weakness, tingling, blurred vision and erectile dysfunction. in men and pruritus vulvae in women (Soegondo et al. 2009).

Type II diabetes mellitus is diabetes that is not affected by insulin levels. This type of diabetes is more influenced by a person's lifestyle and is a factor that can be changed.

In developed countries, 85% to 95% have type 2 diabetes from the total incidence of diabetes.

The high prevalence of type 2 diabetes mellitus is caused by the interaction between genetic susceptibility factors and exposure to the environment (Mariana, 2012). Previous research has stated that the risk factors for type 2 DM are age, ethnicity, gender, genetics, hypertension, BMI, body fat distribution, diet, physical activity, cholesterol levels, stress (Miharja, 2009; Sudaryanto, 2012); Wang Y et al., 2013; Trisnawati, 2013; Cheema et al., 2014; Toharin, 2015).

Makassar City is an area with a fairly high prevalence of diabetes mellitus. Over the past three years, diabetes mellitus has become one of the two diseases with the highest rates. The percentage of diabetes mellitus incidence in 2015 was 20.7%, in 2016 it was 20.6%, and in 2017 it was 9,461. This figure can be seen if the percentage of diabetes decreases every year. Even so, the death rate caused by diabetes mellitus shows an increasing number, namely 180 people in 2015, as many as 237 people in 2016, and lastly increased to 260 in 2017 (Makassar Health Office, 2017).

2 Method

The type of research conducted is observational research, namely by observing the object under study. The observation method used in this study is the case-control observation method. Analysis that examines the relationship between certain effects (diseases or health conditions) with certain risk factors (Sastroasmoro, 2010).

Population and Sample

Population is taking the whole subject/object of research whose quantity is not limited and has certain characteristics to study and then draw conclusions (Hidayat, 2009).

The samples in this study were respondents who were diagnosed with type II diabetes mellitus and underwent examination and hospitalization at the Labuang Baji Hospital Makassar, from September 1, 2020 to October 29, 2020.

Variables and Research Instruments.

In this study, two variables were used: the independent variable (Polamakan, physical activity, and stress) and the dependent variable (the incidence of Type II Diabetes Mellitus). The independent variable data collection uses a questionnaire while the dependent variable uses an observation sheet. This data collection instrument.

In this study, the validity and reliability of the instrument was tested because the questionnaire used was not a standard questionnaire for quantitative data. The data input process uses Epidata software. Data analysis with the help of SPSS software. Data analysis was carried out by filling in the hypothesis (0) using the Chi Square (X^2) formula. To determine the analysis and interpretation of the data on the influence of the dependent variable terhadap variabel independen dengan interpretasi “Dikatakan berhubungan jika nilai P value < 0,05”.

3 Results

Characteristics of respondents (Tables 1, 2, 3, 4, 5, 6 and 7).

Table 1. Distribution of respondents based on age at Labuang Baji Hospital Makassar

Age	n	%
21–30	6	13,3
31–40	5	11,1
41–50	13	28,9
52–63	13	28,9
64–75	8	17,8
Total	45	100

Source: Primary data 2020

Table 2. Distribution of Respondents by Gender in Labuang Baji Hospital Makassar

Gender	n	%
Male	15	33,3
Female	30	67,3
Total	45	100

Source: Primary data 2020

Table 3. Distribution of Respondents Based on Education Level in Labuang Baji Hospital Makassar

Education	n	%
SD	10	22,2
SMP	6	13,3
SMA	24	53,3
Lain-lain	5	11,1
Total	45	100

Source: Primary data 2020

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Table 4. Distribution of respondents according to risk factors in Labuang Baji Hospital Makassar

Factor resiko	n	%
Ya	30	66,7
Tidak	15	33,3
Total	45	100

Source: Primary data 2020

Table 5. Distribution of Respondents according to Diet in Labuang Baji Hospital, Makassar

Pola makan	n	%
Ya	37	82,2
Tidak	18	17,8
Total	45	100

Source: Primary data 2020

Table 6. Distribution of Respondents by Physical Activity at Labuang Baji Hospital Makassar

Aktivitasfisik	(n)	%
Ya	27	60,0
Tidak	8	40,0
Total	45	100

Source: Primary data 2020

Table 7. Distribution of Respondents by Stress in Labuang Baji Hospital Makassar

Stress	(n)	%
Ya	33	73,3
Tidak	12	26,7
Total	45	100

Source: Primary data 2020

4 Bivariate Analysis

Table 8. The Influence of Risk Factors Based on Diet in LabuangBaji Hospital Makassar

Diet	Faktor Resiko				Total		P value
	Ya		Tidak		n	%	
	n	%	N	%			
Baik	25	55,6	5	11,1	30	66,7	0,00
Buruk	0	0,0	15	33,3	15	33,3	
Total	25	55,6	20	44,4	45	100,0	

Source: Primary data 2020

Table 9. Pengaruh FaktorResiko Berdasarkan Aktivitasn Fisik.Di RSUD Labuang Baji Makassar

Aktivitas Fisik	Faktor Resiko				Total		P value
	Ya		Tidak		n	%	
	n	%	N	%			
Baik	26	57,8	4	8,9	30	66,7	0,00
Buruk	4	8,9	11	24,4	15	33,3	
Total	30	66,7	15	33,3	45	100,0	

Source: Primary data 2020

Table 10. Effects of Risk Factors Based on Stress in Labuang Baji Hospital Makassar

Stres	Faktor Resiko				Total		P value
	Ya		Tidak		n	%	
	N	%	N	%			
Baik	28	62,3	4	8,9	32	72,2	0,000
Buruk	2	4,4	11	24,4	13	28,8	
Total	30	66,7	15	33,3	45	100,0	

Source: Primary data 2020

5 Discussion

5.1 Dietary Habit

Excessive calorie intake is the main cause behind the increasing obesity and type 2 diabetes epidemic worldwide, but the quality of the diet also has an independent effect. Excessive consumption of white rice also plays a role in increasing the risk of diabetes mellitus reaching more than 7%. (Farrell, 2008) (Tables 8, 9 and 10).

The results of this study indicate that in general, respondents stated a good eating pattern at RSUD LabuangBaji Makassar who answered well as many as 25 (66.7%) and not as many as 5 (11.1%) from a total of 30 respondents who answered Yes respondents. While the respondents' assessment of the risk factors that stated bad was 0 (0.0%) and 15 (33.3%) were stated good from a total of 15 respondents who stated bad. After analyzing the influence between diet and risk factors, with the results Calculation of the Chi-square value with the result $p = 0.00$ where the level of significance is less than < 0.05 , so it can be said that there is an influence between physical activity and risk factors in Labuang Baji Hospital, Makassar.

5.2 Physical Activity

Lack of physical activity causes insulin resistance in type 2 DM (Soegondo, Soewondo and Subekti, 2009). According to the chairman of the Indonesian Diabetes Association (Persadia), Soegondo, that type 2 DM, apart from genetic factors, can also be triggered by the environment causing unhealthy lifestyle changes such as overeating. (fat and lack of fiber), lack of physical activity, stress. Type 2 diabetes can actually be controlled or prevented through a healthy lifestyle, such as a healthy diet and regular physical activity.

The results of this study indicate that in general, respondents stated that physical activity was good at Labuang Baji Hospital Makassar, which answered well as many as 30 (66.7%) and not as many as 15 (33.3%) from a total of 45 respondents. Meanwhile, the respondents' assessment of risk factors which stated that they were good were 30 (66.7%) and 15 (33.3%) of the total 45 respondents stated that they were not.

After analyzing the influence between physical activity and risk factors, the results of the calculation of the Chi-square value with the results of $p = 0.00$ where the level of significance is less than < 0.05 , so it can be said that there is an influence between physical activity and risk factors in LabuangBaji Hospital, Makassar.

5.3 Stress

Stress is any situation where non-specific demands require individuals to respond or take action (Selye, 1976 in Perrypoter, 1997). Stress triggers biochemical reactions through the neural and neuroendocrine systems. The first reaction of the stress response is the occurrence of sympathetic nervous system secretion followed by sympathetic-endrenal-mendular secretion, and when stress persists, the hypothalamic-pituitary system is activated (Guyton and Hall, 1996; Smaller and Bare, 2008).

The results of this study indicate that in general, respondents stated that the stress was good at LabuangBaji Hospital Makassar as many as 32 (72.2%) and bad as many as 13 (28.8%), while the risk factor assessment was Yes as many as 30 (66.7%) and those who stated no were 15 (33, 3%) of 45 total respondents.

After analyzing the influence between stress and risk factors with the Chi square value with the results $P = 0.000$ where it is said that there is an influence between stress and risk factors in Labuang Baji Hospital Makassar.

6 Conclusions

Based on the results of the research carried out, several things can be opened as follows:

1. There is an influence of diet in the incidence of risk factors in LabuangBaji Hospital Makassar.
2. There is an effect of physical activity on the incidence of risk factors in LabuangBaji Hospital Makassar.
3. There is an influence of stress in the incidence of risk factors in LabuangBaji Hospital Makassar.

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