



The Effect of Foot Massage on Decreasing Glucose Levels of Diabetes Types 2 Patients in Kalisidi Village

Original Article

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Abstract

Research Approach Using Survey Methods with measurement techniques. The population of the study was 80 people, 31 men and 49 women. The sampling technique is purposive sampling. Data analysis used descriptive analysis techniques. The results of the study on the Body Mass Index (BMI) of the residents of Kalisidi Village in 2021 in the normal category of 45.71% (n=16), Pre-Obesity 42.85% (n=15), Obesity level I 11.42% (n=4). The results of the study showed that the blood sugar levels of the residents of Kalisidi Village were in the normal category 25.71% (n=9), pre-diabetes 17.14% (n=6) and the remaining 57.14% (n=20) in the diabetes category. Giving massage treatment and eating patterns showed a decrease in the average blood sugar level of men from 245.81 mg/dl to 204.45 mg/dl and the average blood sugar level of women from 222.45 mg/dl to 182.83 mg/dl. The conclusions of the study were the Body Mass Index (BMI) of the residents of Kalisidi Village in 2021 in the normal category of 45.71% (n=16), blood sugar levels in the normal category of 71.66% (n=43), and giving massage treatments and eating patterns showed results. a decrease in the average blood sugar level of men from 245.81 mg/dl to 204.45 mg/dl.

Keywords: *body mass index, diabetes mellitus, relaxation treatment*

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INTRODUCTION

Diabetes mellitus (DM) is a symptom that arises in a person due to a disturbance in the body's control of sugar levels. These disorders can be caused by inadequate insulin secretion, impaired insulin function (insulin resistance) or both. According to Price and [1], the implementation of a diet in people with diabetes mellitus aims to regulate the number of calories and carbohydrates consumed every day with the right diet principles quantity, schedule and type.

Diet with the right amount, schedule and type is the principle of the DM diet which must pay attention to the calories provided must be exhausted, the diet schedule must be in accordance with the interval, which is divided into 6 meals, namely 3 main meals and 3 interlude meals [2]. Relaxation technique is one of the nursing actions that can affect the hypothalamus to regulate and decrease the activity of the sympathetic nervous system. Stress also can not increase blood sugar levels physiologically. Patients in a state of stress can also change their pattern of good habits, especially in terms of eating, exercising and medication.

MATERIAL AND METHODS

This type of research uses quantitative research using a descriptive approach. The approach in this study uses the method of providing massage treatments and dietary arrangements for diabetics. In this study there are two variables, namely the independent variable and the dependent variable. The independent variable in this study is the effect of relaxation massage therapy along with dietary regulation on diabetics in Kalisidi village and the dependent variable is through a test consisting of 3 components, namely: relaxation massage therapy, dietary regulation, and diabetics.

There are 3 instruments used in this study including 3 treatments, namely: measuring blood sugar levels, regulating diet, relaxing massage therapy. In this study, researchers needed tools used to help collect data, namely: lancet (small needle), lancing device (to hold the needle), alcohol swab, test strip, glucose meter, portable box. Meanwhile, to carry out the treatment, the researchers used tools, namely: mattresses, towels, body lotion, stationery and examination recording forms.

Survey with test and measurement techniques. In this study there are 2 variables, namely the dependent variable and the independent variable. The independent variable in this study is the effect of relaxation massage therapy and dietary regulation on diabetics in Kalisidi village. The dependent variable in this study is a test consisting of 3 components, namely: relaxation massage therapy, dietary regulation, diabetics.

The population in this study is community members with diabetes mellitus in Kaalisidi village, West Ungaran sub-district in 2021 consisting of 35 residents, namely 11 male and 24 female. The sampling technique used is by purposive sampling with the characteristics or characteristics of the population that have been known previously.

The instruments used in this study were measuring blood sugar levels, regulating diet, relaxing massage therapy. In this study, researchers need tools that can be used to make it easier to collect data, namely: lancet (small needle), lancing device (to hold the needle), alcohol swab, test strip, glucose meter, portable box, mattress, towel, body lotion, stationery and inspection recording forms. This study uses descriptive analysis techniques. Descriptive analysis is to analyze data by describing or describing the data that has been collected. The descriptive analysis technique used in this research is the percentage, and in presenting the data using a table in the usual form and frequency distribution.

RESULTS

All the results of the massage therapy measurement tests, diet and blood sugar levels were in accordance with the procedures used. The instruments used are massage therapy, diet and blood sugar. The following is a description of research data on the effect of massage therapy and diet on reducing blood sugar levels as follows: This research was conducted in Kalisidi Village, Jalan Intan Raya No. 1 Kalisidi, West Ungaran District, Semarang Regency, Central Java. The research population was 80 people, consisting of 31 men and 49 women. The research sample consisted of 35 people consisting of 11 men and 24 women. The data obtained from this study were age (years), height (cm), weight (kg), BMI (kg/m²), and blood sugar levels (mg/dl).

Description of the age characteristics of the research sample the effect of massage therapy and diet on reducing blood sugar levels in Kalisidi Village, Jalan Intan Raya No. 1 Kalisidi, West Ungaran Subdistrict, Semarang Regency, Central Java, is presented in the table 1. The table shows that the results of the data processing of the age characteristics of the sample of this study can be concluded that the minimum age of the male sample is 44 years old and the maximum age is 60 years, with 11 samples with an average age of 52.90 years. The sample age is female with a minimum age of 38 years and a maximum age of 70 years, with a total of 24 samples with an average age of 52.29 years.

Table 1. Sample Characteristics

Gender	Amount (n)	years (age)		
		Minimum	Maximum	Average
Male	11	44	60	52,90
Female	24	38	70	52,29

Table 2. BMI

Variable	Minimum	Maximum	Average
Male (n=11)			
height (cm)	146	172	164.09
weight (kg)	59	80	67,90
BMI (kg/m ²)	22	28	25.18
Female (n=24)			
height (cm)	148	161	153.85
weight (kg)	42	74,6	61,76
BMI (kg/m ²)	19	30	26,08

The results of measurements of height (cm), weight (kg) and BMI (kg/m²) of the residents of Kalisidi Village obtained the average height, weight and BMI can be seen in the table 2. The table of research data processing results can be concluded that the height and weight of the male sample with a minimum height of 146 cm and a minimum weight of 59 kg, a maximum height of 172 cm and a maximum weight of 80 kg, with an average height of 164 .09 cm and an average weight of 67.90 kg. The number of samples of the male population of Kalisidi Village is 11 people, it can be concluded that the BMI value of the male population of Kalisidi Village with a minimum BMI of 22 kg/m², a maximum BMI of 28 kg/m² and an average BMI of 25.18 kg/m². The height and weight of the female sample with a minimum height of 148 cm and a weight of 42 kg, a maximum height of 161 cm and a maximum weight of 74.6 kg, with an average height of 164.09 cm and an average weight of 67.90 kg. From a total sample of 24 female residents of Kalisidi Village, it can be concluded that the BMI value of the female population of Kalisidi Village is as much as a minimum BMI of 19 kg/m², a maximum BMI of 30 kg/m², and an average BMI of 25.18 kg/m².

Table 3. Frequency Distribution and Classification of BMI

Classification	Male		Female	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Underweight	0	0	0	0
Normal	7	63,63	9	37,5
Overweight	4	36,36	11	45,83
Obese I	0	0	4	16,66
Obese II	0	0	0	0
Total	11	100	24	100

The average data from the above calculation results obtained BMI classification data. Determination of Body Mass Index (BMI) to determine the sample BMI category. The determination can be known through the classification of BMI according to WHO for Asia Pacific in Jayanti W. L, (2015) and as follows: Underweight (<18.50 kg/m²), Normal (18.50 – 25.99 kg/m²), Pre-obese (25.99 – 29.99 kg/m²), Obesity I (30.00– 34.99 kg/m²), Obesity II (35.00 – 39.99 kg/m²) and Obesity III (>40.00 kg/m²). The results of the descriptive analysis of the BMI of the residents of Kalisidi Village can be seen in the table 3.

DISCUSSION

Table BMI of the population of Kalisidi Village who are included in the normal weight category for both sexes is 16 people or 45.71%, consisting of 7 men (63.63%) and 9 women (37.5%). A total of 15 samples from both sexes were included in the pre-obesity category or 42.85%, consisting of 4 males (36.36%) and 11 females (45.83%). A total of 4 samples from both sexes were included in the obesity category I or 11.42%, consisting of 4 women (16.66%). If viewed from all categories, the residents of Kalisidi Village are categorized in the normal category.

CONCLUSION

Based on the results of research and discussion, several conclusions were obtained as follows:

1. The percentage of Body Mass Index (BMI) of the residents of Kalisidi Village is included in the normal category of 45.71% (16), Pre-Obesity of 42.85% (15 people), the weight category of Level I Obesity is 11.42% (4 person).
2. The percentage of blood sugar levels in the Kalisidi population is in the normal category of 25.71% (9 people), the pre-diabetes category is 17.14% (6 people) and the remaining 57.14% (20 people) is included in the diabetes category.
3. Giving massage treatment and eating patterns showed a decrease in the average blood sugar level of men 245.81 mg/dl decreased to 204.45 mg/dl and the average blood sugar level of women 222.45 mg/dl decreased to 182.83 mg /dl

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CONFLICTS OF INTEREST

Conflict of interest : Authors state no conflict of interest.

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