Autohydro Therapy Reducing Blood Glucose Levels in Type 2 Diabetes Mellitus Patients

Nian Afrian Nuari
Medical Surgical Departement, Bachelor Of Nursing, STIKES Karya Husada Kediri

Efa Nur Aini
Maternity Departement, Bachelor Of Nursing, STIKES Karya Husada Kediri
Correspondence Author: nian.afrian@gmail.com

Abstract: Hyperglycemia is a blood glucose level that contains a lot of sugar in the body's blood circulation. Autogenic relaxation can control blood glucose in the body, by thinking about the feeling of warmth and heaviness in the body parts. Water therapy (Hydrotherapy) is a method of treatment and healing using water as a medium. The aim of this study was to determine the effect of Autohidro (autogenic relaxation therapy and water therapy (Hydrotherapy) on blood glucose in patients with type II diabetes mellitus. The research design used Quasy Experimental with a pre test and post test control group approach, using a purposive sampling technique to obtain samples 32 respondents consisting of 16 people in each group, both control and treatment groups. Data processing and data analysis using the Paired T-Test and Independent T-Test. Results of data analysis using the Paired T-Test, Blood glucose in Diabetes Mellitus respondents there was a difference in the intervention group (p value 0.023), while in the control group there was no change in blood glucose (p value 0.064). Based on analysis using the Independent T-Test, it showed that there was an effect of Autohidro therapy on the blood glucose of Type II Diabetes Mellitus patients (p value 0.022). Autohidro therapy can be an alternative therapy to reduce blood glucose levels in Type II Diabetes Mellitus patients.

Keywords: autogenic relaxation, hydrotherapy, glucose levels, Diabetes Mellitus

INTRODUCTION

Hyperglycemia is defined as having high blood sugar (glucose) levels, whereas hypoglycemia denotes a low blood sugar status. The reason for hyperglycemia is a lack of insulin. When a person has hyperglycemia, their body produces less insulin because of a reduction in insulin secretion. According to the World Health Organization (WHO), hyperglycemia is classified as abnormal glucose tolerance when blood sugar levels are between 100 and 126 mg/dL (PERKENI, 2018). Hyperglycemia can progress to diabetes if blood sugar levels do not drop after multiple tests (ADA, 2018).

There is a rise in the prevalence of glucose levels worldwide. It is estimated that 422 million adults worldwide have type 2 diabetes mellitus in 2014. According to medical diagnoses given by physicians to patients who were at least 15 years old, 1.5% of Indonesians had high blood sugar in 2013. Nonetheless, the frequency is rising. Blood sugar test results

were used to assess glucose levels, which rose from 6.9% in 2013 to 8.5% in 2018. As of right now, blood glucose levels in Lampung Province are over 100% or approximately 129% (Ministry of Health of the Republic of Indonesia Indonesia, 2018). Based on data from the Ministry of Health (2018), diabetes affects 2.6% of East Javan adults over the age of 15. In contrast, Blitar City has a rather high rate; of the 91,606 citizens, aged 15 to 59, 80,936 had examinations, and 3,747 of them received a diabetes mellitus diagnosis (Blitar City Health Office, 2020). 32 patients were found to have Type 2 Diabetes Mellitus, according to preliminary research done at the THW Clinic.

This issue, which frequently arises in people with type 2 diabetes mellitus, is brought on by a lack of control over the things they eat, such as foods high in sugar, white rice, and fried foods, as well as boredom from constantly taking medication (Widayati, D et al, 2021). For people with diabetes mellitus, controlling blood sugar levels is crucial (Nuari, N. A., Rahman, H. F., & Wahid, A. H., 2022). Patients with type II diabetes mellitus require frequent treatment control in order to prevent the development of diabetes mellitus (Nuari, 2022). Numerous factors affect blood sugar levels (Nuari, NA, 2021). Autogenic relaxation employs less complicated movement instructions in comparison to other relaxation techniques (Widayati, D. et al., 2020). One benefit of autogenic relaxation is that it ensures the implementation of old beliefs about the connection between mind and body reactions by utilizing the combination of physiological and psychological reactions (Nuari, NA, Rahman, HF & Wahid, AH. 2023).

This relaxation can modulate blood sugar, blood pressure, heart rate, body temperature and the hormone cortisol. Clients can carry out autogenic relaxation for 15-20 minutes anywhere that is comfortable for them, whether lying down, sitting in a chair, or sitting back (Insani, 2020). Drinking water combined with water therapy helps reduce obesity (Farida, I, 2023). By doing the cheapest and most profitable health therapy - drinking as much water as possible, or 1500 cc every day a person can influence his demand for fiber and fluids (Nuari,NA et al, 2020). This helps eliminate all toxins in the body, including increasing blood sugar (Nuari, N, 2023). on. A therapeutic or healing impact can be achieved with the use of water in water therapy. According to Sari (2018), the water used must be pure and free of dangerous chemicals. This study aims to determine the effect of Autohydro Therapy (Autogenic Relaxation and Water Therapy) on blood glucose in Type II Diabetes Mellitus patients at the THW Blitar Clinic.
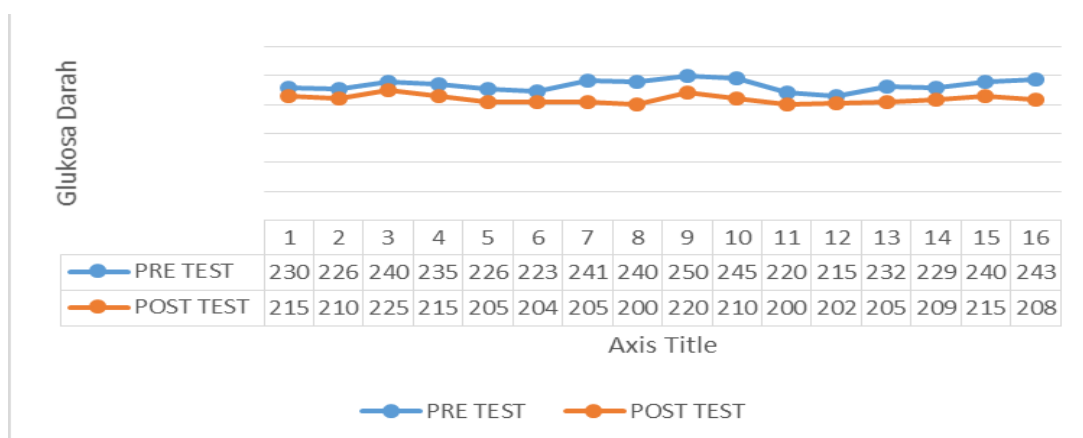
METHOD

The research design uses a quasi experimental design with a pretest and posttest control group design approach, an approach that looks at cause and effect relationships involving a control group and a treatment group (Nursalam, 2016). The sample in this study was 32 THW Blitar Clinic patients who met the inclusion criteria and were divided into control and treatment groups. The sampling technique used is the Purposive Sampling technique, namely the technique of determining the sample with certain considerations. The inclusion criteria in this study were patients who had suffered from Type II DM for at least 3 months and were aged 40-60 years. Type II Diabetes Mellitus patients who have blood glucose levels above 200 mg/dl and have a patient weight of 50 – 60 kg.

The data collection technique is carried out by measuring blood glucose with a glucometer. A glucometer is a useful examination tool to determine blood glucose levels. Then the researcher distributed questionnaires to respondents and they were invited to fill in the questionnaire according to the conditions each had experienced. After the respondents had finished filling out the questionnaire, the data was then collected by the researcher and continued with data processing and data analysis using the Paired T-Test and Independent T Test. -Test.

RESULT AND DISCUSSION

The results of measuring blood sugar levels in the intervention group show the following diagram:
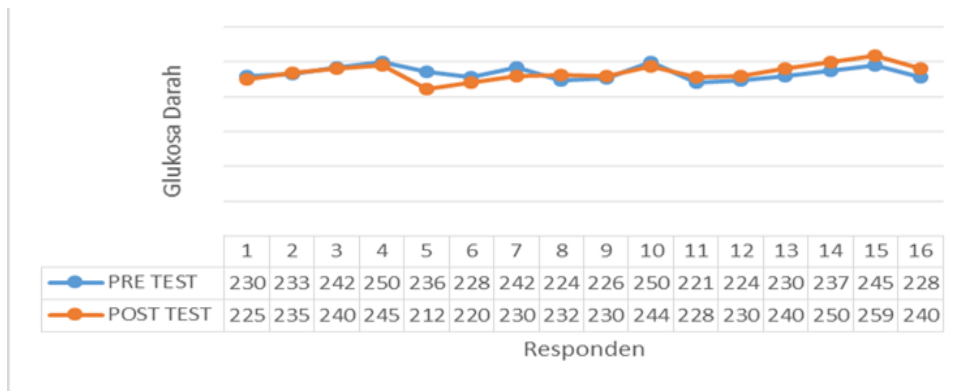
Diagram 1. Pre Test and Post Test Intervention Group

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PRE TEST	230	226	240	235	226	223	241	240	250	245	220	215	232	229	240	243
POST TEST	215	210	225	215	205	204	205	200	220	210	200	202	205	209	215	208

Axis Title

PRE TEST   POST TEST

Table 1. Pre Test and Post Test Intervention Group

Kategori	Pre Test	Post Test
Mean	233.44	209.25
Median	233.50	208.50
Std. Deviation	9.872	7.169
Minimum	215	200
Maximum	250	225
Uji Paired T-Test	P value: 0,023	

From table 1, the average mean blood glucose for the pre-test was 233.44 and the post-test was 209.25. The median pre test was 233.50 and the post test was 208.50. Std. Deviation in the pre test was 9.872 and in the post test 7.769. minimum pre test 215 and post test 200. Maximum pre test 250 and post test 225. Based on the results of data analysis using the Paired T-Test statistical test, it is known that the blood glucose result is P value = 0.023, so there is a change in pre test blood glucose and post test in the intervention group.

The results of measuring blood sugar levels in the control group show the following diagram:

Diagram 2. Pre Test and Post Test Control Group

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PRE TEST	230	233	242	250	236	228	242	224	226	250	221	224	230	237	245	228
POST TEST	225	235	240	245	212	220	230	232	230	244	228	230	240	250	259	240

Responden

Table 2. Pre Test and Post Test Control Group

Kategori	Pre Test	Post Test
Mean	234.13	235.00
Median	231.50	230
Std. Daviation	9.351	47
Minimum	221	212
Maxsimum	250	259
Uji Paired T-Test	P value 0,064	

From table 2. Average Blood Glucose Mean pre test 234.13 and post test 235.00. Median pre test 231.50 and post test 230. Std. Deviation pre test 9,351 and post test 47. Minimum pre test 221 and post test 212. Maximum pre test 250 and post test 259. Based on the results of data analysis using the Paired T-Test statistical test, the blood glucose P value is

known. = 0.064, then there is no change in pre-test and post-test blood glucose in the control group.

Based on the results of research based on gender characteristics, the majority of respondents (87.5%) were women. The age of the respondents was half (50%) aged 50-55 years. The majority of respondents (56.3%) had elementary school education. Most of the respondents' jobs were found to be (62.5%) working as housewives. All respondents (100%) had known knowledge of DM information. The blood sugar levels experienced by all respondents (100%) were abnormal. Based on gender characteristics, women constitute the majority (87.5%). Physically, women tend to experience an increase in body mass index, thereby increasing the risk of developing diabetes (Nuari, NA, Aini, EN & Widayati, N, 2023). As a result, women are more worried than lazy about checking their health.

The use of water as medicine, which is often called hydrotherapy, is a method of treating or healing a medical condition. Water therapy, known as hydrotherapy, involves consuming water (Kusumawati, 2018). Consuming water breaks down white sugar, thus requiring high fluid intake so that the kidneys can eliminate the chemical (Kusumaningtyas, G, 2019).

The results of research analysis of the effect of Autohydro therapy on reducing blood glucose in patients with type 2 diabetes mellitus show that from the results of statistical tests using the Independent T Test, the sig (2-tailed) p-value = 0.022 < α 0.05. This shows that there is an influence of autogenic relaxation therapy and water therapy, with the total influence value of the control group and intervention group mean before = 209.25, control group and intervention group mean after = 235.00. In line with previous research by Tarigan (2020), researchers are of the opinion that the Autohydro Therapy intervention has an effect on reducing blood glucose levels. Intervention with this therapy can give respondents a feeling of relaxation and can be done anytime and anywhere when the respondent is relaxing (Nuari, NA, 2017). The more often it is done, the more benefits the respondent will get.

Self-inflicted relaxation is known as autogenic relaxation. By using your imagination to conjure up pleasant sensations in your arms, back, big toes, hands, and wrists, you can practice autogenic relaxation. These imagined experiences include relief from deep, slow breathing as well as feelings of warmth, weakness, or relaxation in certain areas of the body. To achieve this relaxation, imagine yourself in a calm and serene state while concentrating on controlling your breathing and taking heart rate readings. You can feel comfortable, serene, and relaxed with autogenic relaxation. The use of water as medicine, which is often called hydrotherapy, is a method of treating or healing a medical condition. Water therapy, known

as hydrotherapy, involves consuming water (Kusumawati, 2018). Water consumption breaks down white sugar, requiring high fluid intake so that the kidneys can eliminate the chemical (Nuari, 2017). Reducing the amount of food, drinking lots of water, and exercising frequently are the best ways for type 2 diabetes patients to control blood sugar levels (Lumbanraja, 2006).

CONCLUSION

Based on analysis using the Independent T-Test, it shows that there is an effect of Autohydro Therapy on blood glucose in Type II Diabetes Mellitus patients (p value 0.022). Autohydro therapy can be an alternative therapy for lowering blood glucose levels in Type II Diabetes Mellitus patients. This intervention is expected to be an alternative for lowering blood glucose levels and can be applied by type 2 diabetes mellitus patients in their daily lives.

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