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Harnessing Benson Relaxation Therapy to Stabilize Blood Glucose Levels in Elderly Diabetic Patients at Jember Nursing Home

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Abstract

Introduction: Diabetes mellitus is a metabolic disease characterized by increased blood glucose levels. This disease is often found in the elderly and elderly caused by degenerative processes. The use of Benson relaxation therapy as part of a comprehensive diabetes management program can improve the quality of life for diabetes sufferers. **Aim:** This case study aims to analyze the application of Benson relaxation to the problem of unstable blood glucose levels in Patient. **Method:** Elderly people with type 2 diabetes mellitus had their blood glucose levels measured levels during pre-intervention in the morning and post-intervention in the afternoon. Elderly people receive intervention twice a day for 20 minutes and continue for up to 6 days. **Results:** Elderly people with type 2 diabetes mellitus who were given Benson relaxation therapy experienced a decrease in blood glucose levels from before to after intervention from the first meeting to the fifth meeting. **Conclusion:** The implementation of Benson relaxation therapy in elderly patients resulted in a significant reduction in blood glucose levels, as evidenced by the pre- and post-intervention measurements.

Keywords: Diabetes Mellitus, Benson Relaxation Therapy, Elderly

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1. BACKGROUND

Diabetes mellitus in the elderly is a condition that requires special attention due to its high prevalence and significant risk of complications, such as heart disease, stroke, and other organ damage (Yaslina et al., 2021). Diabetes in the elderly is a condition in which elderly people (elderly) experience metabolic disorders that cause high blood sugar levels (Insani & Widiastuti, 2020). Elderly people with diabetes often experience hyperglycemia which is influenced by various factors, including stress, lifestyle, and comorbidities. Type 2 diabetes is the most common form in the elderly, which often develops due to a combination of age factors, unhealthy lifestyles, and decreased body sensitivity to insulin (insulin resistance) (Galicia-garcia et al., 2020). Risk factors for glucose intolerance that cannot be changed include a family history

of the disease, age, and weight history. Risk factors can be changed, such as high blood pressure, excess weight, lack of physical activity, and poor diet.

As a person ages, various elements are affected including biological, economic, and social factors. At the biological level, the elderly will experience a continuous and real physical aging process that reduces their body's resistance to disease and makes them more susceptible to disease attacks (Lumowa & Rayanti, 2024). Physical aging causes a decrease in bone fluid, which causes brittle, crooked bones, stiff and wide joints, cramps, tremors, sclerosis, and tendon shrinkage. From an economic perspective, the elderly are generally seen as more of a burden than an asset. Socially, the lives of the elderly are often viewed negatively or provide little benefit to the family and society as a whole (Andari et al., 2021). Health problems affect the elderly. This problem begins with the degradation of body cells, leading to decreased endurance and function and increased risk factors for disease. The following health problems are common in the elderly: malnutrition, imbalance problems, and sudden disorientation. In addition, several diseases that often attack the elderly include osteoporosis, dementia, hearing and vision disorders, and hypertension (Suraseranivong, 2022).

According to the World Health Organization (WHO), the number of elderly people in the world aged over 60 years will double, from 12% in 2015 to 22% in 2050. Based on age grouping, DM sufferers are most in the 55-64 and 65-74 year age groups (Milita et al., 2021). According to the Ministry of Health of the Republic of Indonesia, the number of people with diabetes mellitus in 2021 was recorded at 19.47 million people (Kemenkes RI, 2022). At the provincial level, the East Java Health Office reported 929,535 cases of diabetes mellitus in the region in the same year. Around 867,257 people (93.3%) have been diagnosed and received health services (Dinkes Jatim, 2022). Meanwhile, data from the Jember District Health Office shows that in 2020, there were 35,951 cases of diabetes mellitus in the district (Dinkes, 2020).

Several problems in the elderly living in nursing homes include dissatisfaction, psychosocial problems, and lower quality of life compared to elderly living alone or with family. The elderly, who are more vulnerable to neglect, also have low levels of life satisfaction and are more susceptible to stress. One reason is the many pressures seen in care facilities, the prevalence of

stress in the elderly to dissatisfaction with service providers, loneliness, and depression (Listyorini et al., 2022). In addition to complaints of physical weakness, the capacity of the nervous system to collect, convey, and process information from the environment is one example of how a person's physiological health can affect their capacity to perform daily activities. The nervous and musculoskeletal systems work together to allow a person to react to incoming sensors by determining how to move. Disorders of this system, such as those caused by acute illness or injury, can make it difficult to carry out daily tasks (Yuliari, 2019).

Blood glucose instability in diabetic patients is often triggered by factors such as stress, poor diet, and lack of physical activity. Stress can increase levels of stress hormones, such as cortisol and adrenaline, which can interfere with blood sugar control and worsen diabetes (Nurhafiza & Saputra, 2023). One effective nonpharmacological approach is Benson relaxation therapy, which can help lower blood glucose levels by reducing stress hormones and increasing insulin sensitivity. According to Kusnaningsih (2019), this technique involves focusing on one topic, repeating ritual words, and eliminating disturbing thoughts. By inhibiting the excessive production of hormones such as epinephrine, cortisol, glucagon, adrenocorticotropic hormone (ACTH), corticosteroids, and thyroid that increase blood glucose levels.

Based on the results of the study carried out by PSP2N students of the Gerontic Nursing Program, Faculty of Nursing, University of Jember at Nursing Home of Jember, 140 elderly people are living in 8 guest houses with partial and independent housing care and 2 special treatment rooms with a total of care. Activities that have been attempted by nursing homes for the welfare of the elderly include holding routine gymnastics on Tuesdays and Fridays. Community service is on Sundays, and health checks are carried out daily by checking blood pressure and giving olive oil to the elderly. In addition, a random blood sugar check is carried out once a week on the elderly who suffer from diabetes mellitus. A case study of an elderly person at the nursing home of Jember showed hyperglycemia, as evidenced by the Random Blood Sugar test results on August 19, 2024, which was 334 mg/dl. Other symptoms the Patient showed were frequent urination, frequent hunger, and fatigue. Based on the clinical manifestations of DM itself, namely polyuria, polydipsia, polyphagia, and

weight loss (Dessy Hadrianti et al., 2022). Based on this, diabetes mellitus in the elderly is treated through Benson's combination of pharmacological therapy and relaxation, which is expected to stabilize blood glucose levels and improve the patient's quality of life.

2. METHODS

This research uses a case study design with a pre-test approach. Furthermore, post-test to measure the effectiveness of Benson relaxation therapy in the elderly with type 2 diabetes mellitus and hyperglycemia. The study sample was a patient, a 70-year-old elderly person, who met the inclusion and exclusion criteria. The study procedure involved checking blood glucose levels before and after the Benson relaxation therapy intervention, which was carried out for 30 minutes 6 times in 12 meetings between August 19-24, 2024. The elderly were also assisted to try to do the therapy independently, with blood glucose level checks carried out at certain hours before and after the intervention. The study ended with evaluating the elderly's independent ability to carry out therapy and the last blood glucose level measurement.

Researchers apply research ethics by providing informed consent as approval and ensuring that the intervention in the study does not endanger the patient's condition by implementing intervention operational standards.

3. RESULTS

Based on the results of the assessment in a elderly patients with a history of diabetes mellitus, experienced unstable blood glucose levels characterized by hyperglycemia (GDS 334 mg/dL). In addition, she also had a high risk of falling, mild depression, and balance and mobility problems. Although still independent in daily activities, an uncontrolled diet, lack of drinking water intake, and the habit of consuming sweet foods also affected her health condition. Based on PPNI (2017), the nursing diagnosis raised was the problem of unstable blood glucose levels. The main nursing interventions based on PPNI (2018) provided were hyperglycemia management through monitoring blood glucose levels, diabetes diet education, and the application of Benson relaxation therapy. After six interventions, there was an increase in blood glucose level stability, indicating that the therapy applied was effective in helping to manage diabetes in the elderly. Therefore, a holistic approach involving medical monitoring, lifestyle changes, and psychosocial support must be

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continuously carried out to improve the Patient's quality of life in the nursing home environment.

Based on the results obtained on the elderly Patient who underwent blood glucose examination before and after being given intervention at each meeting. The results of the elderly's blood glucose examination at each meeting during the 6 interventions are listed in Table 1.

Table 1. Results of checking blood glucose levels at each meeting in elderly Patient at Nursing Home of Jember

Session	Temporary Blood Glucose Level Values		Difference	Information
	Pre-test	Post-test		
August 19, 2024	334 mg/dl	290 mg/dl	44 mg/dl	Decraase
August 20, 2024	289 mg/dl	143 mg/dl	146 mg/dl	Decrease
August 21, 2024	235 mg/dl	201 mg/dl	34 mg/dl	Decrease
August 22, 2024	210 mg/dl	105 mg/dl	105 mg/dl	Decrease
August 23, 2024	225 mg/dl	215 mg/dl	10 mg/dl	Decrease
August 24, 2024	218 mg/dl	100 mg/dl	118 mg/dl	Decrease
Mean	214,33 mg/dl	175,67 mg/dl		

Table 1 presents the results of the difference in random glucose levels before and after implementing Benson relaxation therapy on the Patient. The average value of random blood glucose levels in the Patient's pre-implementation was 214.33, and postimplementation was 175.67 mg/dl. The highest value in the pretest was 334 mg/dl, and the lowest was 210 mg/dl, while in the posttest, the highest value was 290 mg/dl and the lowest was 100 mg/dl. A significant decrease was seen at the second meeting, with a difference in blood glucose levels before and after the intervention of 146 mg/dl and the lowest at the fifth meeting of 10 mg/dl.

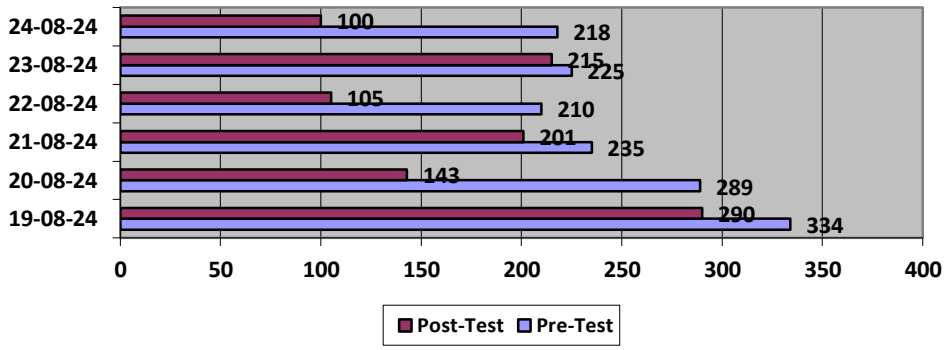

Figure 1. Blood Glucose Level Graph in patient

There were 6 interventions carried out during 12 meetings. On August 19, 2024 at 15:15 WIB, there was a decrease in random blood glucose levels after Benson relaxation therapy was carried out at 10:15 WIB. Random blood glucose level examinations were conducted in the morning 2 hours after breakfast, and 15 minutes later, Benson relaxation therapy was carried out. At the afternoon meeting, blood glucose examinations were conducted again as a post-intervention of Benson relaxation therapy with the time selected before dinner (15:30 WIB). Intervention on August 20-24, 2024, at 10:15 WIB Patient was accompanied to carry out Benson relaxation therapy independently, and random blood glucose levels were examined before and after with the results of a significant decrease on August 20, 2024, and an increase in the intervention on August 23, 2024.

4. DISCUSSION

The research respondents, patients aged 70 years, are the elderly who have diabetes mellitus. Age over 45 years is considered a risk factor for diabetes. This is supported by the fact that type 2 DM occurs more frequently with age. All body systems, including the endocrine system, are affected by aging. Aging is a degenerative factor that results in decreased body function and also increases insulin resistance, which causes unstable blood sugar levels and many cases of diabetes mellitus (Rosada & Pakarti, 2024). Degenerative changes in the elderly in Nursing homes occur in the skin, bones, heart, blood vessels, lungs, neurons, and other body components related to aging in humans. Health problems affect the elderly. This problem begins with the degradation of body cells, leading to decreased endurance and function and increased risk factors for disease. The following health problems are common in the elderly: malnutrition, imbalance problems, and sudden disorientation. In addition, several diseases that often attack the elderly include osteoporosis, dementia, hearing and vision disorders, hypertension, and diabetes mellitus (Kholifah, 2015). Based on this, researchers argue that the age of the elderly affects changes in the body's system, including type 2 diabetes mellitus.

In the patient's medical history, it is known that antihyperglycemic drugs, namely metformin and sulfonylurea drugs such as glimepiride, were administered. The body becomes resistant to insulin or produces insulin in insufficient amounts to adequately control blood glucose levels in people with type 2 diabetes. Insulin therapy, oral medications, and

modification of diet and activity patterns can help control this. According to the findings of Rosita (2022), most of the population suffers from type 2 diabetes mellitus due to poor lifestyle choices made by respondents, such as consuming lots of sweet or sugary foods, fast food, or foods high in carbohydrates and lack of fiber. Researchers argue that pharmacological therapy, namely administering drugs for diabetes mellitus, can be assisted by a good lifestyle, such as modifying diet and daily physical activity.

The study's results showed that Benson relaxation therapy reduced blood glucose levels in the patient. Before the intervention, the average random blood glucose level was 214.33 mg/dl, which decreased to 175.67 mg/ dl after the therapy was carried out 6 times in 12 meetings. The highest value in the pretest was 334 mg/dl, and the lowest was 210 mg/dl, while in the posttest, the highest value was 290 mg/dl, and the lowest was 100 mg/dl. Another study by Rosada dan Pakarti (2024) showed that the combination of Benson relaxation and Murottal Al-Qur'an for 7 days reduced blood sugar levels from 148 mg/dl to 123 mg/dl in the first subject and from 345 mg/dl to 145 mg/dl in the second subject. Meanwhile, the study by Sari (2020) also found a correlation between this therapy. It decreased blood glucose levels, with GDS values ranging from 212-498 mg/dl before the intervention, which then decreased to 110-377 mg/dl after the intervention. Overall, this study confirms that Benson relaxation therapy significantly reduces blood glucose levels in patients with type 2 diabetes mellitus.

Benson relaxation therapy was applied to Patients who had high blood glucose levels (334 mg/dl) due to inappropriate eating habits and lack of physical activity. Physical activity can help lower blood glucose levels by increasing blood flow and receptor activation. The patient often feels tired because glucose cannot reach cells to produce energy, so the body takes energy from other reserves, such as muscle and fat. After therapy and Benson's relaxation, there was a decrease in blood glucose levels. A study by Nurhafiza dan Saputra (2023) showed that three-day therapy lowered blood sugar levels in patients with type 2 diabetes. This technique increases oxygen supply to the body, maintains balance, and creates a relaxing effect. This relaxation triggers the hypothalamus to regulate the production of hormones that affect glucose metabolism and mood, reduce stress, and lower heart rate. Benson relaxation therapy inhibits the release of hormones that increase blood glucose levels and is applied with breathing techniques and repetition of spiritual

words according to the patient's beliefs. This method is effective as a non-pharmacological therapy to help the elderly control blood glucose levels in a way that aligns with their beliefs and spirituality. However, the study has limitations, such as a descriptive study design with one sample without a comparison group and limited research tools. The researchers recommend that respondents continue this therapy independently, that the Nursing Home facilitates therapy education for the elderly, and that further research be carried out with a more comprehensive design.

5. CONCLUSION

This study concluded that Benson relaxation therapy is effective in lowering blood glucose levels in elderly with type 2 diabetes mellitus, as experienced by the Patient, a 70-year-old elderly at the Nursing Home of Jember. After 6 therapy sessions, the Patient's blood glucose levels decreased significantly, indicating the potential of this therapy as a non-pharmacological intervention that can be applied independently. However, the study has limitations, such as a descriptive study design with a single sample without a comparison group and limited research tools. The researcher recommends that respondents continue this therapy independently, that the Nursing Home facilitates therapy education for the elderly, and that further research be conducted with a more comprehensive design.

AUTHOR CONTRIBUTIONS

The author contributes all research activities. Conceptualization, data collection and analysis: Siti Murdiyati Mukarromah1, and Fahruddin Kurdi. Writing and manuscript revisions: Siti Murdiyati Mukarromah.

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CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest in this research.

DATA AVAILABILITY STATEMENT

The data are available from the corresponding author upon reasonable request.

REFERENCES

Andari, F. N., Santri, R. A., & Nurhayati, N. (2021). Terapi Benson Untuk Penurunan Nyeri Rheumatoid Arthritis Elderly. Jurnal Vokasi

Keperawatan (JVK), 4(2), 345–356. https://doi.org/10.33369/jvk.v4i2.19103

Dessy Hadrianti, Sari, R. T., Agustina, A., Huzaifah, Z., Linda, & Saherna, J. (2022). Edukasi dan Implementasi Perawatan Luka Klien Dengan Diabetes Melitus di Kota Banjarmasin. Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM), 5(10), 3250–3261.

Dinkes Kabupaten Jember. 2021. Profil Kesehatan Kabupaten Jember Tahun 2020. Jember: Dinkes Kabupaten Jember.

Dinkes Kabupaten Jember. 2022. Profil Kesehatan Jember Tahun 2021. Dinkes Jember. Jember: Dinas Kesehatan Kabupaten Jember.

Galicia-garcia, U., Benito-vicente, A., Jebari, S., & Larrea-sebal, A. (2020). Pathophysiology of Type 2 Diabetes Mellitus. International Journal of Molecular Sciences, 1–34.

Insani, W. R. A., & Widiastuti, A. (2020). Pengaruh Relaksasi Autogenik Terhadap Gula Darah Pada Pasien Dm Tipe 2. Indonesian Journal of Health Development, 2(2), 137–144. https://doi.org/10.52021/ijhd.v2i2.37

Kholifah, S. N. (2015). Keperawatan Gerontik.

Kusnaningsih, A. (2019). Relaksasi Benson untuk Mengontrol Kadar Gula Darah Penderita DM di Wilayah Kerja Puskesmas Pahandut Palangka Raya. PengabdianMu: Jurnal Ilmiah Pengabdian Kepada Masyarakat, 4(1), 30–35. https://doi.org/10.33084/pengabdianmu.v4i1.629

Listyorini, M. W., Sahar, J., & Nurviyandari, D. (2022). Faktor Internal dan Eksternal yang Berhubungan dengan Depresi pada Lanut Usia di Panti Sosial Tresna Werdha Budi Dharma Bekasi. Manuju: Malahayati Nursing Journal, 4(10), 2708–2728.

Lumowa, Y. R., & Rayanti, R. E. (2024). Pengaruh Usia Lanjut terhadap Kesehatan Elderly. Journal Keperawatan, 16(1), 363–372.

Milita, F., Handayani, S., & Setiaji, B. (2021). Kejadian Diabetes Mellitus Tipe II pada Lanjut Usia di Indonesia (Analisis Riskesdas 2018). Jurnal

Kedokteran Dan Kesehatan, 17(1), 9. https://doi.org/10.24853/jkk.17.1.9-20

Nurhafiza, C. S., & Saputra, B. (2023). Asuhan Keperawatan Pasien Diabetes Melitus Dengan Penerapan Terapi Relaksasi Benson Terhadap Penurunan Kadar Gula Darah. Jurnal Kesehatan Panrita Husada, 8(2), 198–212.

Rosada, S. A., & Pakarti, A. T. (2024). Penerapan Kombinasi Relaksasi Benson Dan Terapi Murottal Al Qur ' an Terhadap Kadar Gula Darah Sewaktu Penderita Diabetes Melitus Combination Application of Benson ' S Relaxation and Murottal Therapy of the Qur ' an on Blood Sugar Levels When Patients Wit. 4, 592–598. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjk4du_69eEAxVmUGwGHZJJBBkQFnoECCMQAQ&url=https%3A%2F%2Fjurnal.akperdharmawacana.ac.id%2Findex.php%2FJWC%2Farticle%2Fdownload%2F628%2F433&usg=AOvVaw2Cjrn_IOd_te9yveQ9i

Rosita, R., Kusumaningtiar, D. A., Irfandi, A., & Ayu, I. M. (2022). Hubungan Antara Jenis Kelamin, Umur, Dan Aktivitas Fisik Dengan Diabetes Melitus Tipe 2 Pada Elderly Di Puskesmas Balaraja Kabupaten Tangerang. Jurnal Kesehatan Masyarakat (Undip), 10(3), 364–371. https://doi.org/10.14710/jkm.v10i3.33186

Sari, S. M. (2020). Pengaruh Relaksasi Benson Terhadap Penurunan Kadar Gula Darah Pada Pasien Diabetes Melitus Tipe 2. Jurnal Ilmiah Multi Science Kesehatan, 12(1), 10–18. https://jurnal.stikes-aisyiyah-palembang.ac.id/index.php/Kep/article/view/916/645

Suraseranivong, R. (2022). Physiologic changes in the elderly. Greater Mekong Subregion Medical Journal, 2(2), 129–140. https://doi.org/10.1016/s0011-8532(22)00038-6

Tim Pokja SDKI DPP PPNI. 2017. Standar Diagnosis Keperawatan Indonesia : Definisi Dan Indikator Diagnostik. Edisi 1. Jakarta Selatan: Persatuan Perawat Nasional Indonesia.

Tim Pokja SIKI DPP PPNI. 2018. Standar Intervensi Keperawatan Indonesia : Definisi Dan Tindakan Keperawatan.

Edisi 1. Jakarta Selatan: Persatuan Perawat Nasional Indonesia.

Yaslina, Maidaliza, & Srimutia, R. (2021). Aspek Fisik dan Psikososial terhadap Status Fungsional pada Elderly. Prosiding Seminar Kesehatan Perintis, 4(2), 68–73. https://jurnal.upertis.ac.id/index.php/PSKP/article/view/724

Yuliari, M. (2019). Hubungan aktivitas fisik dengan tingkat depresi pada elderly di panti sosial tresna werdha wana seraya denpasar tahun 2018.