

Benson Relaxation Therapy for Glycemic Control in Type 2 Diabetes Patients: A Ward-Based Study

Nadia Mey Saputri¹, Nunung Khairun Nissa Oper^{1*}

¹Maharani Health College, Malang

*E-Mail: nunungoper@gmail.com

Abstract: *Diabetes Mellitus is a chronic metabolic disorder characterized by high blood glucose levels (hyperglycemia). Stress can contribute to blood glucose instability by increasing cortisol and adrenaline hormones, thereby worsening hyperglycemia. This study aims to assess the effectiveness of Benson Relaxation Therapy—which combines deep breathing techniques with the repetition of calming words—in maintaining blood sugar stability in patients with Type 2 Diabetes Mellitus. This study utilized a descriptive design with a case study approach involving three patients who met the inclusion criteria. Data were collected through interviews and observations during the nursing care process. Therapy was conducted in several sessions, each lasting 10–15 minutes, with blood glucose levels monitored before and after therapy. The results showed a significant cumulative downward trend in blood glucose levels in all three subjects. However, there was daily variation in response that requires further analysis: from 416 mg/dL to 186 mg/dL (Patient 1), 425 mg/dL to 209 mg/dL (Patient 2), and 350 mg/dL to 192 mg/dL (Patient 3). Physiological improvements included decreased heart rate, more regular breathing, and increased comfort following therapy. In conclusion, Benson Relaxation Therapy positively impacts blood glucose stability by reducing stress and serves as a safe, cost-effective, and easy-to-implement complementary intervention in nursing practice.*

Keywords: *Type 2 Diabetes Mellitus, Benson Relaxation, Blood Glucose Levels.*

INTRODUCTION

Diabetes mellitus is a metabolic disturbance characterized by hyperglycemia resulting from defects in insulin secretion, insulin action, or both. According to the International Diabetes Federation (IDF), diabetes is a chronic condition where the body cannot produce or use insulin effectively (Alok Yadav et al., 2025; Naveed, 2022; Yameny, 2024). The World Health Organization (WHO) reported that in 2021, there were 422 million people with diabetes mellitus worldwide. This represents an increase of 8.5% among adults, causing approximately 2.2 million deaths before the age of 70, particularly in low- and middle-income countries (Lakshmi & I, 2018; Sun et al., 2022).

International Diabetes Federation (IDF) also noted that Indonesia ranked 5th globally for the number of Type 2 diabetes mellitus sufferers in 2021 (Sun et al., 2022). Globally, there were 537 million Type 2 diabetes patients recorded that year. In Indonesia, the Ministry of Health (2022) reported 10.7 million patients ranging from adults to the elderly. Specifically, the Malang City Health Office recorded 21,013 people with diabetes mellitus in 2021, with numbers reaching 23,000 within the first 10 months of 2022. The prevalence of Type 2 Diabetes Mellitus in East Java reached 2.1% of its 39 million (Sun et al., 2022; Sutanegara & Budhiarta, 2000). Based on medical records in the Pangandaran Ward of RSSA Malang, the prevalence of Type 2 Diabetes Mellitus reached 14.3% (5 out of 35 treated patients). This data indicates that Type 2 Diabetes Mellitus remains a significant health issue requiring optimal management in this unit. High prevalence suggests that blood glucose control is a major challenge. Many patients struggle to lower sugar levels despite pharmacological therapy due to various physiological, behavioral, and psychosocial factors (Bin Rakhis et al., 2022; Gyawali et al., 2016; Stolar, 2010).

Hyperglycemia in Type 2 Diabetes is primarily caused by insulin resistance and impaired insulin secretion. Insulin resistance prevents body cells—especially muscle, liver, and adipose tissue—from

responding effectively to insulin, leaving glucose in the bloodstream. Additionally, declining pancreatic beta-cell function leads to inadequate insulin production, especially after high-carbohydrate consumption (American Diabetes Association, 2023). Lifestyle factors, such as uncontrolled diet, high sugar and fat intake, and lack of physical activity, contribute to the difficulty in lowering blood glucose. Low physical activity reduces insulin sensitivity, making glucose utilization ineffective. Furthermore, non-compliance with diet and medication often leads to treatment failure (Gyawali et al., 2016; Stolar, 2010; Sun et al., 2022). Stress, anxiety, and emotional disturbances also contribute to hyperglycemia by triggering the release of hormones like cortisol and adrenaline. These hormones increase glucose production by the liver and inhibit insulin action, making blood glucose levels difficult to control (Scheen et al., 2021; Sharma et al., 2022). Other factors influencing hyperglycemia include infection, comorbidities, corticosteroid use, and sleep disturbances. Holistic control of Type 2 Diabetes requires medical therapy, lifestyle changes, and stress management (Scheen et al., 2021; Sharma et al., 2022). Previous research by Sri Mulia Sari (2020) demonstrated that Benson therapy effectively lowered blood sugar levels in elderly patients with Type 2 diabetes ($p=0.001$) (Sri Mulia Sari & Anggie Mareta, 2020). Benson relaxation aids in reducing blood glucose by suppressing the release of epinephrine, cortisol, and glucagon. This process inhibits the conversion of glycogen into glucose and slows carbohydrate catabolism. Benson relaxation is a complementary therapy combining a patient's belief system with deep breathing to inhibit sympathetic nerve activity, reduce oxygen consumption, and promote muscle relaxation (Rohayani, 2024; Sutrisna et al., 2025).

A preliminary study conducted on November 1, 2025, at the Pangandaran Ward, Dr. Saiful Anwar Hospital, revealed a high number of Type 2 DM patients with uncontrolled blood glucose. Patients reported stress, anxiety, and difficulty sleeping. Nurses noted that education on stress management is limited due to time constraints. Given the theoretical effectiveness of Benson therapy and the lack of its routine implementation, the researchers aim to apply this simple, safe, and cost-effective technique to help patients control their blood sugar levels (Ni Kadek Sinta Mutiara Dewi et al., 2022; Purnama, 2021).

METHODS

This study used a descriptive case study design with a quantitative approach to examine clinical phenomena in depth. The focus of this study was the application of Benson relaxation therapy for glycemic stability in hospitalized patients. This research utilizes a descriptive case study design with a qualitative approach. The study was conducted in the Pangandaran Ward of Dr. Saiful Anwar Regional General Hospital, East Java, from November 1-7, 2025. The study subjects consisted of three male patients (Mr. N, Mr. S, and Mr. A) who were diagnosed with Type 2 Diabetes Mellitus. The subject selection used a purposive sampling technique with the inclusion criteria of patients who experienced unstable blood glucose levels during treatment.

Intervention Protocol:

The intervention was structured through five main stages: interviews, observations, daily blood glucose checks, implementation of the Benson Relaxation Therapy Standard Operating Procedure (SOP), and documentation. The Benson Protocol was implemented in single daily sessions lasting 10–15 minutes, combining deep (diaphragmatic) breathing techniques with repetition of meaningful words or phrases based on the patient's beliefs to achieve a state of relaxation. Random blood glucose (RBG) levels were measured before and after the intervention using a calibrated capillary glucometer. To minimize bias, researchers monitored the consistency of pharmacological therapy and dietary regimens provided by the hospital during the observation period.

The study adhered to research ethics, including Social/Clinical Value, Scientific Value, Equitable Distribution of Burdens and Benefits, Risk/Benefit Assessment, Privacy and Confidentiality, and Informed Consent.

FIGURES

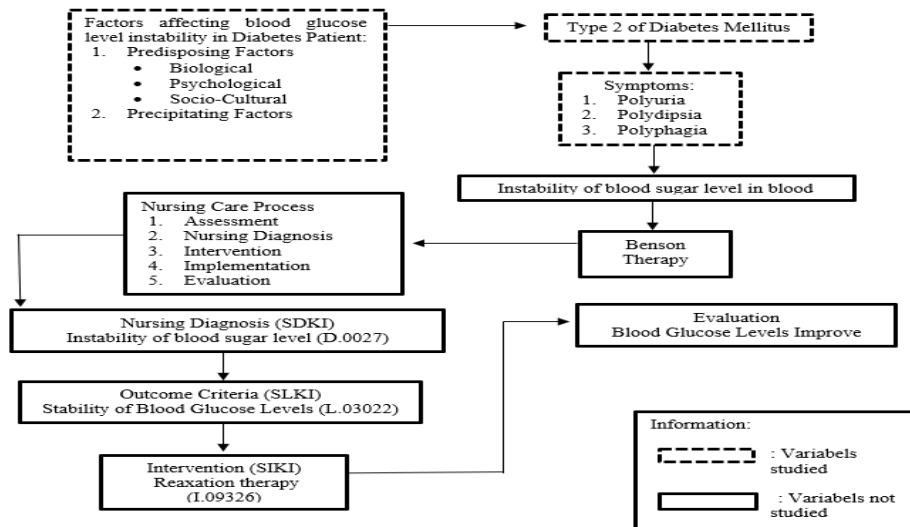


Figure 1. Conceptual Framework

TABLES

| Subject | Pre-intervention (mg/dL) | Day 2 (mg/dL) | Post-intervention (mg/dL) |
|-------------------|--------------------------|---------------|---------------------------|
| Patient 1 (Mr. N) | 416 | 301 | 186 |
| Patient 2 (Mr. S) | 425 | 317 | 209 |
| Patient 3 (Mr. A) | 350 | 260* | 192 |

Table 1. Subject Observation

RESULTS AND DISCUSSION

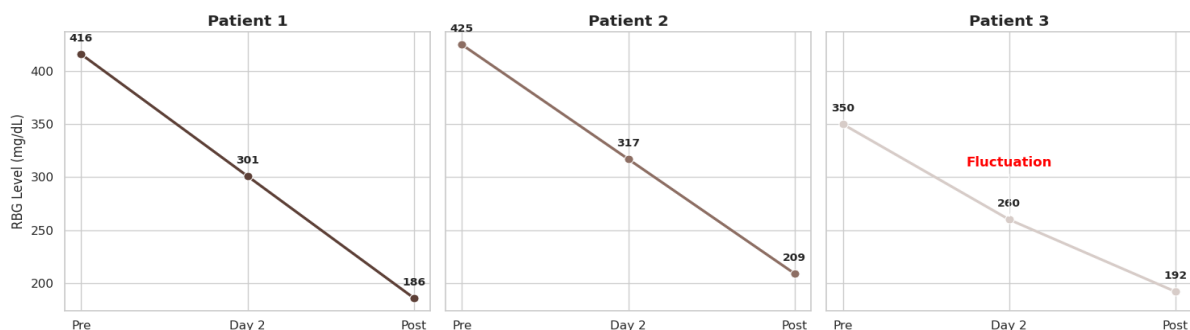


Figure 2. Comparison of individual Random Blood Glucose (RBG) trends across three subjects. Patients 1 and 2 showed a steady decline from pre- to post-intervention. Patient 3 demonstrated a notable fluctuation on Day 2 (260 mg/dL) before arriving at a lower glycemic level by Day 3, reflecting the individual physiological variability common in ward-based interventions.

Blood Glucose Fluctuation Analysis: The results of the three-day observation showed a significant downward trend in blood glucose levels cumulatively in the third subject. However, there were daily variations in response that require further analysis. For example, Mr. A experienced an increase in glucose levels on the second day (from 215 mg/dL to 260 mg/dL) before finally decreasing to 192 mg/dL on the third day. This indicates that although Benson relaxation contributes positively, glycemic stability is still influenced by multifactorial factors such as nutritional intake, sleep patterns, and the patient's acute psychological condition in the ward.

Patient Response and Physiological Changes: Prior to therapy, patients experienced high blood sugar levels accompanied by physical complaints such as weakness, fatigue, and discomfort, as well as psychological stress and anxiety (Himmah et al., 2024; Hosseini et al., 2021). Following the intervention, patients showed positive responses to Benson Relaxation Therapy, characterized by a sense of comfort, calmness, and cooperation. Physiological indicators improved, including stabilized pulse rates (shifting from tachycardic to 70–80 bpm) and deeper, more regular respiration. Psychologically, patients reported reduced anxiety and an increased sense of relaxation. Patients expressed hope that relaxation therapy could be continued sustainably and emphasized the important role of nurses in providing education and support (Atha Rahma Talitha & Ambar Relawati, 2023; Novita et al., 2023).

Discussion of Mechanism: The improvements stem from Benson's core elements—deep diaphragmatic breathing, progressive muscle relaxation, and a repetitive mantra—which activate parasympathetic dominance, countering the sympathetic stress activation prevalent in uncontrolled DM. This mechanism involves hormonal modulation: Benson therapy suppresses hypothalamic-pituitary-adrenal axis hyperactivity, lowering cortisol and catecholamine release. These findings align with a study by Sri Mulia Sari (2020), which reported a positive impact of Benson therapy on blood sugar control with a p-value of 0.001. Unlike purely pharmacological approaches, this non-invasive technique offers safety without the risk of acute hypoglycemia. In Type 2 DM, chronic stress exacerbates insulin resistance; repeated sessions of this therapy inhibited epinephrine-induced glycogenolysis and boosted muscle glucose uptake. Unlike pharmacological intensification which risks hypoglycemia, this non-invasive method proved safe across profiles with no adverse events. Although the sample size was small (n=3), the consistent directional changes support causality. As a complementary tool, Benson therapy merits integration into DM nursing protocols at RSUD Dr. Saiful Anwar.

CONCLUSIONS

Nursing care for patients with Type 2 Diabetes Mellitus was carried out comprehensively through assessment, diagnosis, planning, implementation, and evaluation. The assessment yielded subjective data such as complaints of weakness, excessive thirst, sleep disturbances, and objective data of above-normal blood glucose levels. The established nursing diagnosis was unstable blood glucose levels. The intervention plan focused on the application of Benson Relaxation Therapy to reduce stress and maintain stable blood glucose levels. Implementation was carried out in a structured manner by guiding the patient in breathing techniques, muscle relaxation, and focusing on calming words for 10–15 minutes per session on a regular basis. The evaluation showed a positive response, seen in decreased blood glucose levels, more regular breathing, decreased tension, and increased comfort and quality of patient rest. In conclusion, Benson Relaxation Therapy is effective as a complementary nursing intervention for controlling blood glucose levels in patients with Type 2 Diabetes Mellitus and is worthy of recommendation in nursing practice.

CONFLICT OF INTEREST STATEMENT

Nursing care for patients with Type 2 Diabetes Mellitus was comprehensively implemented through assessment, diagnosis, planning, implementation, and evaluation. The initial assessment revealed subjective complaints of weakness, excessive thirst, and sleep disturbances, alongside objective data of hyperglycemia. The primary nursing diagnosis established was "unstable blood glucose levels. The intervention focused on Benson Relaxation Therapy to reduce stress and stabilize blood glucose. Implementation was structured, guiding patients through breathing techniques, muscle relaxation, and focusing on calming words for 10–15 minutes per session. The evaluation demonstrated positive

outcomes, including decreased blood glucose levels, regular breathing patterns, reduced tension, and improved patient comfort. In conclusion, Benson Relaxation Therapy is an effective complementary nursing intervention for controlling blood glucose in Type 2 Diabetes Mellitus patients and is recommended for inclusion in nursing practice.

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