

Section: Medical Surgical Nursing

Progressive muscle relaxation therapy to reduce anxiety in patient with hypertension

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Abstract

Hypertension is a chronic condition often referred to as a "silent killer" because it frequently occurs without noticeable symptoms while requiring lifelong management. It is estimated that the global prevalence of hypertension will reach 1.5 billion people. Patients with a long-standing history of the disease often experience high levels of anxiety, primarily due to the burden of long-term treatment and concerns regarding their prognosis. To address this, Progressive Muscle Relaxation (PMR) is frequently utilized as an effective non-pharmacological and complementary therapy to alleviate psychological distress. The purpose of this case study is to describe the implementation of PMR in managing nursing-related anxiety in a hypertensive patient at PKU Muhammadiyah Hospital, Temanggung (Shofa II Ward). This research utilized a descriptive case study design focusing on one respondent who met the inclusion criteria. The assessment was conducted using the Hamilton Anxiety Rating Scale (HARS). The results demonstrated a significant improvement: the patient's baseline score was 25 (moderate anxiety), which decreased to 13 (no anxiety) following the PMR intervention. In conclusion, the implementation of Progressive Muscle Relaxation is an effective nursing intervention for lowering anxiety levels in patients with hypertension. PMR induces a state of physical and mental calm, relaxes the musculoskeletal system, and improves peripheral circulation, which collectively assists in stabilizing or reducing blood pressure.

Keywords: Anxiety, hypertension, medical nursing, nursing care, relaxation muscle progressive

Introduction

Hypertension is a chronic disease and often referred to as a "silent killer" because it frequently occurs without noticeable complaints or symptoms, yet requires long-term management (Carey et al., 2021; Song et al., 2020). According to World Health Organization (WHO) data in 2023, the prevalence of hypertension reached 33%, or approximately 1.13 billion people worldwide, indicating that one in three individuals is diagnosed with hypertension (Kario et al., 2024). Two-thirds of these cases are found in poor and developing countries. By 2025, it is estimated that the number of people living with hypertension will increase to 1.5 billion globally. Indonesia showed an increase in hypertension prevalence of 8.7% among individuals aged ≥ 18 years. In Central Java Province, hypertension cases reached 37.6%, and in 2021 hypertension remained the highest proportion among all reported non-communicable diseases, accounting for 76.5%. Patients with a long history of hypertension tend to experience higher levels of anxiety, as they often worry about their illness not being cured and the need for lifelong treatment (Jones & Romeiser, 2025; Bubulac et al., 2025). Anxiety in hypertensive patients can lead to physiological imbalances, such as changes in vital signs, disturbances in eating and sleeping patterns, muscle tension, irregular breathing, increased heart rate, and decreased digestive function (Bacon et al., 2014; Lim et al., 2021). Non-pharmacological therapies that can be applied include relaxation techniques such as Benson relaxation, hypnotherapy, psychoreligious approaches like murottal therapy, music therapy, herbal remedies (cucumber juice, celery juice, soursop leaf decoction), and progressive muscle relaxation. These interventions can help reduce anxiety and improve the overall quality of life for patients with hypertension.

Progressive muscle relaxation therapy is one of the non-pharmacological and complementary approaches commonly used to help reduce anxiety in patients with hypertension (Hasanuddin et al., 2025; Erman et al., 2024). This therapy works by modulating hypothalamic activity, minimizing stress signals, increasing endorphin release to improve mood, lowering blood pressure, and reducing anxiety through parasympathetic nervous system responses. Based on preliminary studies conducted in the Shofa II Room of PKU Muhammadiyah Hospital, Temanggung, pharmacological interventions such as antihypertensive drugs have been administered, but non-pharmacological measures to reduce anxiety and stress in hypertensive patients have not yet been applied. Therefore, the author is interested in conducting a study entitled "Implementation of Progressive Muscle Relaxation Therapy to Reduce Anxiety in Hypertensive Patients in the Shofa II Room of PKU Muhammadiyah Hospital, Temanggung." The findings demonstrated that progressive

muscle relaxation therapy effectively reduced anxiety in elderly patients with hypertension. From this discussion, it can be concluded that the implementation of progressive muscle relaxation techniques is effective in reducing anxiety in hypertensive patients and can also contribute to lowering blood pressure.

The importance of this study for nursing lies in its potential to provide evidence-based, non-pharmacological interventions for patients with hypertension who frequently experience anxiety as a result of long-term illness management. Anxiety in hypertensive patients can negatively impact vital signs, sleep quality, and overall treatment adherence, thereby worsening disease outcomes (Souza et al., 2016; Bautista et al., 2012). Progressive muscle relaxation therapy offers a simple, cost-effective, and safe technique that nurses can apply in clinical practice to help reduce anxiety, promote relaxation, and improve physiological stability. By validating the effectiveness of this therapy, the study strengthens the role of nurses in delivering holistic care that addresses both physical and psychological needs, ultimately enhancing patient well-being and quality of life.

Case Description

Mr. K, a 70-year-old male, Muslim, residing in Lowungu 3/3 Bejen, Temanggung, works as a farmer and has a junior high school education. He was diagnosed with hypertension and assessed on January 27, 2025, in the Shofa II Room. The patient complained of dizziness, pain in the nape, and fatigue that made daily activities difficult. These complaints had persisted for almost a week, causing him to worry that his condition would not improve. Vital signs examination revealed blood pressure of 186/110 mmHg, pulse rate of 107 beats per minute, temperature of 36.2 °C, and respiratory rate of 21 breaths per minute. Mr. K has a four-year history of hypertension. He occasionally visits the community health center for check-ups, but often neglects them due to work. Antihypertensive medication provided by the health center is taken irregularly, only when symptoms recur. He reported never being hospitalized before. At home, he takes amlodipine once daily (1 tablet). Mr. K is an active smoker, rarely exercises, and earns less than Rp1,000,000 per month with uncertain income. He is covered by BPJS Class 3 insurance. Subjective data showed that Mr. K was worried his condition would not recover, feared he could no longer be active due to fatigue, and complained of difficulty sleeping because dizziness appeared suddenly and anxiety prevented him from returning to sleep. Objective data revealed that Mr. K appeared restless, tense, sleep-deprived, pale, and unmotivated. Vital signs confirmed hypertension (BP 186/110 mmHg, pulse 107/min, temperature 36.2 °C, respiratory rate 21/min), and his HARS score was 25, indicating moderate anxiety. Based on these findings, the nursing problem identified was Anxiety (D.0080) related to fear of failure, characterized by worry about the consequences of his condition. Interventions for mild to moderate anxiety were implemented according to SIKI, namely Relaxation Therapy (I.09326). These included assessing muscle tension, pulse, blood pressure, and temperature before and after therapy; providing written information about preparation and procedures for progressive muscle relaxation; recommending the use of loose clothing; explaining the goals, benefits, limitations, and techniques of progressive muscle relaxation; encouraging the patient to assume a comfortable position; advising regular practice of progressive muscle relaxation exercises; and fostering spiritual support if needed.

From January 27 to January 29, 2025, progressive muscle relaxation therapy was implemented for Mr. K. The actions included monitoring vital signs before and after therapy, assessing muscle tension, providing written information about preparation and procedures, explaining the goals, benefits, limitations, and techniques of progressive muscle relaxation, recommending the use of loose clothing, encouraging the patient to assume a comfortable position, teaching and guiding non-pharmacological relaxation techniques, advising regular practice of progressive muscle relaxation, recording hemodynamic results before and after therapy, and administering the HARS questionnaire to monitor changes in anxiety levels. At the end of the intervention period on January 29, 2025, nursing evaluation data were obtained. Subjective (S): Mr. K reported feeling comfortable in a sitting position, more relaxed, and less worried about his illness. He stated that he had memorized the relaxation movements, although he occasionally forgot some extremity parts, but was assisted by his family to remember and practice. He also reported no dizziness or pain in the nape. Objective (O): Vital signs before therapy showed blood pressure of 154/86 mmHg, pulse 94 beats per minute, and temperature 36.6 °C. After therapy, blood pressure decreased to 142/90 mmHg, pulse 92 beats per minute, temperature 36.5 °C, and the HARS score improved to 13, indicating no anxiety. The patient appeared more comfortable, relaxed, communicative, and his hemodynamic status gradually stabilized and improved. Assessment (A): The nursing problem of anxiety was resolved. Plan (P): Continue maintaining progressive muscle relaxation therapy as an intervention.

Discussion

Based on the results of the study conducted on Mr. K, the most prominent nursing problem identified was anxiety related to concerns about experiencing failure and the consequences of his condition. This finding was consistent with the assessment data obtained during evaluation. Patients with hypertension often complain of dizziness and nape pain. Their research explained that progressive muscle relaxation reduces the secretion of Corticotropin Releasing Hormone (CRH) and Adrenocorticotrophic Hormone (ACTH) in the hypothalamus. The decrease in these hormones leads to reduced sympathetic nerve activity, thereby lowering adrenaline and noradrenaline output, decreasing heart

rate, dilating blood vessels, and reducing blood pressure. These physiological changes help relieve dizziness and nape pain while effectively reducing anxiety in hypertensive patients.

The implementation of progressive muscle relaxation therapy followed three stages. Preparation Stage: The researcher positioned the patient comfortably, instructed him to sit in a semi-Fowler position with eyes closed, and loosened clothing around the neck and waist. Implementation Stage: The patient performed progressive muscle relaxation exercises under direct guidance. According to the Standard Intervention of Indonesian Nursing (2018), the procedure includes jaw relaxation, tensing muscles for 5–10 seconds, followed by relaxation for 20–30 seconds, repeated 8–16 times. Leg muscle tension should not exceed 5 seconds to avoid cramps. Patients were encouraged to focus on sensations of muscle tension and relaxation while practicing deep, slow breathing. Closing Stage: After the exercise, the patient was prepared for rest, asked to share his feelings, and informed that the intervention had been completed.

Nursing care was provided for three days, and significant improvements were observed. Mr. K's anxiety score decreased from 25 (moderate anxiety) to 13, indicating no anxiety. His blood pressure and pain levels also improved. Progressive muscle relaxation reduced anxiety in elderly patients from moderate (score 24) to mild (score 16) after seven days of intervention. Physiologically, relaxation lengthens muscle fibers, reduces neural impulses to the brain, lowers heart rate and respiratory rate, decreases blood pressure and oxygen consumption, increases alpha brain activity, and improves peripheral skin temperature. These responses reflect a calm and peaceful state. Relaxation techniques, including progressive muscle relaxation and breathing exercises, are effective for managing medical conditions such as hypertension and psychological difficulties. These techniques involve cognitive, somatic, and behavioural dimensions. Similarly, progressive muscle relaxation is a simple and effective therapy to reduce muscle tension, stress, and high blood pressure, while also decreasing anxiety, improving physical function, reducing sleep disturbances, alleviating mental disorders, and enhancing quality of life. A limitation of this case study was the initial difficulty in communicating with the patient due to his anxiety, restlessness, and poor concentration, which made him reluctant to participate in therapy. However, after receiving clear explanations about the benefits of progressive muscle relaxation and encouragement from his family, the patient agreed to undergo the therapy and successfully completed the intervention.

Conclusion

Progressive muscle relaxation therapy has been shown to be an effective non-pharmacological intervention in reducing anxiety among patients with hypertension. By promoting relaxation, lowering sympathetic nervous system activity, and stabilizing vital signs, this therapy contributes to improved psychological well-being and better physiological outcomes. The findings highlight the importance of integrating progressive muscle relaxation into nursing care as a complementary approach to pharmacological treatment. For patients with hypertension, this technique not only helps alleviate anxiety but also supports blood pressure control, enhances adherence to treatment, and improves overall quality of life. Therefore, progressive muscle relaxation therapy can be recommended as a practical, safe, and holistic nursing intervention in both hospital and community settings.

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