

Section: General Nursing

Slow stroke back massage for treating headache in patient with hypertension

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Abstract

Hypertension is a chronic medical condition characterized by a persistent and abnormal elevation in blood pressure across multiple clinical measurements. It is formally diagnosed when systolic blood pressure is 140 mmHg and diastolic pressure is 90 mmHg. Globally, hypertension affects over one billion people and serves as a primary risk factor for stroke, myocardial infarction, and heart failure. Patients frequently present with cephalgia (headache) and a sensation of "heaviness" in the nuchal region (nape of the neck), often resulting from vascular tension or impaired cerebral blood flow. In clinical cases of hypertension, the prioritized nursing diagnosis is typically Acute Pain, manifested as severe headaches. While pharmacological treatments are standard, non-pharmacological interventions are vital for holistic pain management. One such effective intervention is Slow Stroke Back Massage (SSBM) therapy. SSBM is a non-invasive nursing action characterized by rhythmic, slow-speed stroking of the back, which promotes systemic relaxation and reduces pain intensity without adverse side effects. The objective of this study was to evaluate the implementation of SSBM in alleviating acute headaches in a hypertensive patient. The intervention was conducted across three home-visit sessions. Following the sessions, a comprehensive evaluation was performed to measure the efficacy of the therapy. The results demonstrated that Slow Stroke Back Massage significantly helped overcome the patient's headache, suggesting that this technique is a viable, low-cost complementary therapy for managing hypertensive symptoms in a community or home-care setting.

Keywords: Complementary therapy, headaches, hypertension, slow stroke back massage, symptom management

Introduction

Hypertension is a chronic medical condition characterized by a persistent elevation in blood pressure, specifically a systolic reading of 130 mmHg and a diastolic reading of 80 mmHg (Azizi & Juraschek, 2025). A definitive diagnosis cannot be established through a single measurement; it requires at least two separate readings taken at different times while the patient is in a state of rest, whether sitting or lying down (Shantsila & Clark, 2024). Globally, hypertension affects over one billion people and is a primary risk factor for severe cardiovascular complications, including stroke, myocardial infarction, and chronic heart failure (Shabrina & Koesyanto, 2023). In Indonesia, data indicates a significant increase in prevalence, rising from 25.8% in 2013 to 34.1%. Provincially, Central Java remains a high-risk region, recording the third-highest prevalence in the country at 37.6% as of 2018. This trend underscores the urgent need for enhanced promotive and preventive strategies in national hypertension control (Nugroho et al., 2022).

Pathophysiology of Hypertensive Cephalgia Patients with hypertension frequently suffer from cephalgia (headache), often accompanied by a sensation of "heaviness" in the nuchal region (nape of the neck). This condition is physiologically driven by elevated systemic pressure that disrupts the delivery of oxygenated blood to the brain. Cerebral hypoxia triggers anaerobic metabolism, which results in the production of lactic acid, thereby stimulating pain receptors (nociceptors). Furthermore, chronic hypertension causes vascular remodeling—particularly in small arteries and arterioles—leading to narrowing and impaired blood flow. The resulting decrease in oxygen supply and the accumulation of carbon dioxide provoke a localized inflammatory and pain response. Non-Pharmacological Management and SSBM Management of hypertensive headaches involves both pharmacological and non-pharmacological approaches. Non-pharmacological interventions include sodium-restricted diets and various complementary therapies. Among these, Slow Stroke Back Massage (SSBM) has emerged as a prominent non-invasive nursing intervention for headache (Candrawati et al., 2025). These findings suggest that SSBM is a reliable, evidence-based nursing action for optimizing patient comfort and managing hypertensive symptoms.

The importance of this case study lies in its focus on addressing one of the most debilitating symptoms of hypertension—cephalgia—through a safe, non-invasive, and cost-effective nursing intervention. Hypertension is a global health crisis that frequently leads to chronic pain in the nuchal and cranial regions, which significantly diminishes a patient's quality of life and can lead to emotional distress or sleep disturbances (Arca & Singh, 2019; Mohammadi et al., 2019; Cortelli et al., 2004). While pharmacological treatments are the primary standard of care,

they may not always provide immediate relief for localized tension and can carry risks of systemic side effects or drug interactions. This study is critical because it evaluates SSBM as an independent nursing action that bridges the gap between medical management and holistic patient comfort. By utilizing rhythmic, low-speed stroking, the nurse can stimulate the parasympathetic nervous system, which induces a relaxation response, reduces peripheral resistance, and promotes vasodilation. Furthermore, this case study contributes to the body of Evidence-Based Nursing Practice by demonstrating the practical application of complementary therapies in a community or clinical setting. Documenting the shift in a patient's pain scale from a moderate 6 to a mild 2 provides empirical data that supports the integration of SSBM into standardized hypertension care protocols. This research is particularly vital in the Indonesian context, as seen at Tidar Regional Hospital, where there is a recognized need to expand the clinical competencies of nurses beyond routine monitoring. By showcasing the efficacy of SSBM, this study empowers nurses to take a proactive role in symptom management, reduces the patient's reliance on supplemental analgesics, and offers a sustainable method for families to support the long-term well-being of hypertensive relatives.

Case Description

The subject of this nursing care study is Mrs. S, a 48-year-old female of Javanese ethnicity and a follower of Islam, residing in Magelang. Currently employed as a manual laborer, Mrs. S also manages domestic responsibilities as a housewife, with the household income provided by both her and her husband's earnings. A significant clinical factor in this case is the patient's strong hereditary history of hypertension from both parents. Although she reports no specific dietary restrictions or food taboos, Mrs. S expresses significant anxiety regarding her uncontrolled blood pressure, fearing potential long-term complications. Her clinical history indicates that while she was once under a physician's care for hypertension, she is currently non-adherent to pharmacological therapy and does not perform routine blood pressure monitoring. During the nursing assessment, Mrs. S reported a primary complaint of persistent dizziness and nuchal pain (pain at the nape of the neck). Her sleep-rest patterns are notably disrupted; although she retires at 9:00 PM, she only achieves 5–6 hours of sleep due to frequent nocturnal awakenings, indicating a high level of sleep disturbance. This discomfort is further characterized by significant muscle tension in the cervical region, which contributes to visible restlessness. A comprehensive pain assessment revealed a pulsating (throbbing) sensation localized in the head and radiating to the nape. Mrs. S described the pain as "moderate," assigning it a score of 5/10 on the numeric rating scale. She noted that the symptoms typically manifest in the evening and exacerbate upon waking in the morning.

Physical examination and vital sign monitoring confirmed a hypertensive state, with a recorded blood pressure of 160/90 mmHg, a pulse rate of 98 beats/minute, a respiratory rate of 21 breaths/minute, and a body temperature of 36.5°C. During the clinical interview, the patient was observed grimacing while attempting to withstand the discomfort in her posterior neck, though she remained capable of maintaining moderate focus and concentration when addressed. These objective findings, combined with her subjective reports of sleep deprivation and pulsating pain, form the clinical basis for the nursing diagnosis of Acute Pain (D.0077) related to physiological injury agents (hypertension).

Discussion

Patients with hypertension frequently report cephalgia (headache), particularly localized in the nuchal (nape) region. This discomfort is often exacerbated by elevated systemic blood pressure, cervical muscle tension, stress, fatigue, and poor sleep quality. This condition creates a detrimental feedback loop: physical discomfort triggers the sympathetic nervous system, further elevating blood pressure and metabolic stress (Handler, 2004). In this case study, the patient initially presented with a moderate-to-severe pain scale of 6–7, characterized by a throbbing sensation and physical tension that hindered daily activities. This intensity is directly correlated with blood pressure instability and inadequate rest. SSBM is a non-pharmacological intervention that utilizes rhythmic, gentle touch through five main methods: effleurage, petrissage, tapotement, friction, and vibration. This technique effectively stimulates the parasympathetic nervous system, which counteracts the stress response. Physiologically, the repetitive movements from the lower to upper back facilitate vasodilation (widening of blood vessels), improve local blood flow, and reduce muscle stiffness. Furthermore, SSBM triggers the endocrine system to release endorphins (natural analgesics) while simultaneously inhibiting the production of stress hormones such as cortisol, norepinephrine, and dopamine (Asriadi et al., 2026). This hormonal shift not only reduces pain but also improves sleep quality and induces a profound state of systemic relaxation. The intervention conducted by the author over three home visits demonstrated a significant and gradual reduction in pain. The patient's pain scale decreased from 6 (moderate) during the first visit to 5, then to 4, and finally reached 2 (mild) by the third visit. Objective clinical data also showed a stabilization of blood pressure from 158/90 mmHg to 120/80 mmHg, alongside a visibly more relaxed physical state.

In this case study, the nurse operates as a clinical specialist and a facilitator of holistic recovery, moving beyond the routine task of blood pressure monitoring to become an active provider of evidence-based complementary therapy. The nurse's role begins with a comprehensive diagnostic assessment, utilizing tools like the PQRST pain scale and the Oxford scale to quantify the patient's distress. By identifying "Acute Pain" as the priority diagnosis, the nurse takes the initiative to implement SSBM as an independent nursing intervention. In this capacity, the nurse acts as a

therapist, applying precise manual techniques—effleurage, petrissage, and friction—to physically lower the patient's sympathetic nervous system activity and induce a state of vasodilation. Furthermore, the nurse serves as an educator and advocate for non-pharmacological management. Throughout the three home visits, the nurse does not only perform the massage but also explains the physiological connection between stress, muscle tension, and hypertension to Mrs. S. By documenting the objective decline in pain from a scale of 6 to 2 and the stabilization of blood pressure to 120/80 mmHg, the nurse provides clinical evidence that supports the integration of SSBM into standard home-care protocols. This role is essential for empowering the patient and their family; by the end of the intervention, the nurse has transitioned from a primary caregiver to a coach, teaching the family how to safely perform the massage to ensure the patient's long-term comfort and cardiovascular health.

Conclusion

Based on the nursing care provided to Mrs. S, it can be concluded that SSBM is an effective non-pharmacological intervention for reducing cephalgia (headache) in hypertensive patients. Following three consecutive home visits, the patient experienced a significant reduction in pain intensity, with the pain scale decreasing from 6 to 2. This improvement was accompanied by a stabilization of vital signs and a visible increase in physical relaxation. The clinical success of SSBM is attributed to its ability to enhance blood circulation, alleviate muscle tension, and stimulate the parasympathetic nervous system, which collectively work to lower blood pressure and reduce systemic stress. The findings of this study offer valuable implications for various stakeholders in the healthcare process. For patients, this therapy serves as an accessible method to increase self-care knowledge and manage hypertensive headaches independently. For nursing students, this case serves as a practical application of therapeutic communication and evidence-based clinical practice. Furthermore, this study provides academic institutions with a scientific reference for complementary nursing interventions. Finally, for clinical nurses, these results encourage the standardized implementation of SSBM according to established procedures to ensure optimal pain management and holistic care for patients with hypertension.

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