
Acute Pain Nursing Care (Minor Head Injury) With Head Up 30° Position at RSUD Dr. R. Soedarsono Pasuruan

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Abstract

This study aims to describe the effectiveness of the 30° head-up position as a nursing intervention for managing acute pain in patients with a mild head injury (MHI). Although MHI is a prevalent neurological issue, there is limited research on non-pharmacological interventions for its associated acute post-traumatic headaches. Employing a descriptive qualitative approach with a single case study design, the research focused on one adult participant selected via purposive sampling at Dr. R. Soedarsono Hospital, Pasuruan. Data were collected using a triangulation method, including semi-structured interviews, physical observation, and documentation, and analyzed descriptively to identify key patterns. The findings demonstrated a significant reduction in the patient's pain, with the Visual Analogue Scale (VAS) score decreasing from 5 to 3 over three days. The intervention also improved the patient's sleep quality and stabilized vital signs. In conclusion, the 30° head-up position is a valuable and effective non-pharmacological nursing intervention for acute pain management in MHI patients, offering a promising alternative to traditional methods. However, the single case study design limits the generalizability of these findings.

Keywords: *Acute Pain, Case Study, Head Injury, Head-up Position, Nursing Care*

INTRODUCTION

Head injury is one of the most common neurological problems globally and is often a leading cause of morbidity, especially in the productive age group (Yanti et al., 2024). According to Indonesia's Basic Health Research data (Riskesdas), the prevalence of head injuries in 2023 reached 9.12%, with mild head injury (MHI) being the most dominant case (Kemenkes, 2023). Although often considered harmless, this injury can cause serious complications such as intracranial hemorrhage (Muttaqin, 2018) and lead to disturbing residual symptoms, one of which is acute post-traumatic headache (Nugroho, 2018; Singh et al., 2025). This type of headache can significantly impair a patient's quality of life and may even persist for up to a year after the initial injury (Prasetyo et al., 2021).

The pathophysiology of pain in head injuries is highly complex. Mechanical trauma to the head causes inflammation and the release of inflammatory chemicals that irritate pain nerves, resulting in pain sensation (Gurarie, 2024). Furthermore, a head injury can disrupt cerebral perfusion, leading to ischemia and anaerobic metabolism in brain tissue, which increases the production of lactic acid that stimulates headaches (Innez et al., 2017). The increase in intracranial pressure (ICP) resulting from the injury is also one of the primary triggers of headache experienced by patients (Lestari, 2021). Therefore, effective pain management in MHI patients is a top priority in nursing care to prevent complications and improve patient comfort.

Various interventions have been implemented to address headaches in head injury patients, both pharmacologically and non-pharmacologically. One promising non-pharmacological nursing intervention is the 30° head-up position. This position has been clinically proven to be effective in increasing cerebral venous blood flow and optimizing oxygen supply to the brain, thereby reducing ICP (Nugroho, 2018). Some preliminary studies have shown that this position can influence pain reduction in head injury patients (Kusuma, 2019). However, there is still limited information regarding the specific effectiveness of the 30° head-up position as a primary intervention for acute pain management in mild head injury

cases. Existing studies have more often focused on improving oxygen saturation or the level of consciousness in severe head injury patients (Nurfikasari et al., 2025; Utami et al., 2021).

Based on these phenomena and research gaps, it is important to conduct an in-depth study on nursing care for patients with acute pain due to mild head injury. Therefore, this study aims to describe nursing care for acute pain (mild head injury) with the 30° head-up position intervention at Dr. R. Soedarsono Hospital, Pasuruan. The urgency of this research lies in the effort to provide stronger scientific evidence regarding the effectiveness of a simple yet potentially non-pharmacological nursing intervention. The novelty of this study lies in its specific focus on acute pain management, not just other physiological parameters, in MHI patients.

RESEARCH METHODS

Research Design and Approach

This study employed a descriptive qualitative approach with a single **case study design** to provide an in-depth, holistic narrative of nursing care for a patient with acute pain following a mild head injury (MHI). This design is particularly suitable for exploring a contemporary phenomenon within its real-life context (Creswell & Poth, 2023). A qualitative case study allows for a detailed investigation of a single case—in this instance, a specific patient—to understand the process of nursing intervention and its outcomes (Sudaryono, 2021). The research followed a systematic nursing process, including assessment, problem formulation, planning, implementation, and evaluation, to describe the experience of providing care to the participant (Sugiyono, 2021). The study was conducted at Dr. R. Soedarsono Hospital in Pasuruan from May 18 to May 20, 2025.

Participants

The participant for this case study was selected based on a purposive sampling method (Sugiyono, 2021). The inclusion criteria for the participant were: (1) having a medical diagnosis of a mild head injury, (2) experiencing an acute headache, and (3) being an adult patient. Patients were excluded if they had a moderate or severe head injury, were underage, or had concurrent fractures in their extremities, as these conditions could confound the pain management outcomes. Patient confidentiality was strictly maintained throughout the study.

Data Collection and Analysis

Data were collected using a triangulation approach to ensure validity and a comprehensive understanding of the case (Emzir, 2021). The primary data collection techniques included:

1. Interviews: Direct semi-structured interviews were conducted with the patient to gather information on their biodata, chief complaints, and progress throughout the nursing care period.
2. Observation: Physical examinations were performed from head to toe to monitor the patient's condition and vital signs. The patient's response to the nursing intervention—the 30° head-up position—was specifically observed and documented.
3. Documentation: Patient medical records, including laboratory results, X-rays, and CT scans, were reviewed to support the clinical findings and diagnosis of mild head injury.

The data analysis followed a qualitative descriptive model. The data from interviews, observations, and medical records were organized and clustered based on the patient's biological, psychological, social, and spiritual needs to identify relevant patterns (Sugiyono, 2021). The collected data were then validated by cross-referencing information from different sources and comparing the findings with existing literature and prior research on the effectiveness of the 30° head-up position (Kusuma, 2019). A conclusion was drawn by synthesizing and interpreting these findings to provide a cohesive description of the nursing care process.

Ethical Considerations

This study was conducted in strict adherence to ethical research principles. Informed consent was obtained from the patient after they were provided with a clear explanation of the research purpose and their right to participate or refuse at any time. The principles of anonymity and confidentiality were upheld by using codes or initials instead of the patient's full name and by ensuring all patient information and data were kept secure and private.

RESULTS AND DISCUSSION

This chapter details the nursing care provided to Mrs. S, a patient with a mild head injury (MHI) and acute pain, and discusses the findings in comparison with relevant nursing theories and scientific literature. The discussion is structured into three main sections: Acute Pain, Implementation of the 30° Head-Up Position, and Changes in Pain Scale After Implementing the 30° Head-Up Position.

Acute Pain

The initial nursing assessment of Mrs. S, a 35-year-old housewife, upon her admission to the hospital on May 18, 2025, revealed several key findings. She reported a chief complaint of a "stabbing" pain in the middle of the right side of her head, with a pain scale of 5 on the Visual Analogue Scale (VAS). This pain, which she described as continuous, had begun following a traffic accident where she fell from her motorcycle and hit her head on the asphalt. The patient also reported disturbed sleep due to the pain and swelling on her right cheek, which made it difficult for her to lie on either side.

A physical examination confirmed objective data consistent with MHI. The patient appeared weak and restless, with a grimacing expression, and she exhibited protective behavior by using a pillow to shield her face. Vital signs were elevated, including a blood pressure of 130/80 mmHg and a heart rate of 120 beats per minute, which are common physiological responses to acute pain (Tim Pokja SLKI DPP PPNI, 2017). The patient was conscious with a GCS score of E4V5M6. Localized trauma was observed on her right cheek, showing redness, swelling, and abrasions on her fingers and knees. These findings align with the theoretical understanding that a traumatic head injury can cause tissue damage and trigger an inflammatory response (Misenda, 2025), leading to the release of inflammatory mediators such as prostaglandins and cytokines. This process, in turn, stimulates nociceptors and causes the sensation of acute pain (Innez et al., 2017). The data collected from Mrs. S confirms a direct link between the head trauma and the onset of acute pain, which became the primary nursing diagnosis (D.0077) (Tim Pokja SDKI DPP PPNI, 2017).

Implementation of the 30° Head-Up Position

The nursing intervention was designed to manage Mrs. S's acute pain using a non-pharmacological approach, specifically the 30° head-up position. This intervention was chosen based on its theoretical foundation in reducing intracranial pressure (ICP) and improving cerebral oxygenation (Yunus, 2024). The patient was educated on the rationale behind this position—that elevating the head to a 30° angle helps to prevent an increase in ICP, optimize cerebral venous blood flow, and enhance oxygen supply to the brain, thereby alleviating pain. This aligns with existing research indicating that a slight head elevation (15-30°) is safe and effective for patients with head trauma (Kusuma, 2019; Nugroho, 2018).

The implementation was carried out systematically over three days:

1. Day 1 (May 18, 2025): The nurse established a trusting relationship with Mrs. S and explained the intervention. The patient, initially with a pain score of 5, agreed to the intervention. The bed was adjusted to the 30° head-up position while ensuring her body remained straight.
2. Day 2 (May 19, 2025): The nurse reassessed the patient's condition. The patient reported feeling "much better and more comfortable." She stated that the "stabbing" pain was now intermittent, lasting less than 10 minutes, and her sleep quality had improved. Her pain score had decreased to 4, and vital signs were more stable.
3. Day 3 (May 20, 2025): The final assessment revealed significant improvement. The patient reported minimal pain, now only lasting less than 5 minutes at a time. Her pain score was now 3, and her vital signs had returned to a normal range (BP: 120/80 mmHg, HR: 70 bpm, RR: 19 bpm). She reported sleeping soundly through the night without frequent awakenings.

This successful implementation demonstrates that the 30° head-up position is a valuable and effective non-pharmacological nursing intervention for managing acute pain in MHI patients.

Changes in Pain Scale After Implementing the 30° Head-Up Position

The pain scale data from the three-day intervention period demonstrates a significant positive change. Before the intervention, the patient's pain was rated at a VAS score of 5. Following the consistent application of the 30° head-up position, the score progressively decreased to 4 on the second day and finally to 3 on the third day.

This outcome strongly supports the theoretical framework that the 30° head-up position can effectively reduce pain in patients with MHI. The gradual reduction in pain, improved sleep quality, and stabilized vital signs observed in Mrs. S align with the findings of Raihan (2023) and other studies that recommend this position for pain management in patients with head trauma. The intervention addressed both the physical discomfort and the related nursing diagnosis of disturbed sleep patterns, as a decrease in pain directly led to improved rest. This case study provides concrete evidence that a simple, non-invasive nursing intervention can have a significant and positive impact on patient comfort and recovery.

CONCLUSION

In conclusion, this case study demonstrated the efficacy of the 30° head-up position as a simple, non-pharmacological nursing intervention for managing acute pain in a patient with a mild head injury (MHI). The findings revealed a significant reduction in pain intensity, as evidenced by the progressive decrease in the patient's pain score from 5 to 3 over three consecutive days. Furthermore, the intervention positively impacted the patient's overall well-being by stabilizing vital signs and improving sleep quality, which was initially disrupted by the pain. This study provides strong evidence supporting the use of this non-invasive and cost-effective method as a primary intervention for acute post-traumatic headaches in MHI patients, offering a valuable alternative or complement to pharmacological treatments.

Despite the positive findings, this study has limitations, primarily due to its single case study design. The results are highly specific to the individual participant, Mrs. S, and therefore may not be generalizable to a broader population of MHI patients. Factors such as individual pain tolerance, the specific location and severity of the head trauma, and the patient's psychological state could influence the effectiveness of the intervention. For future research, it is recommended to conduct a study with a larger sample size, employing a randomized controlled trial design to provide more robust statistical evidence. Further research could also explore the long-term effects of this intervention and its potential application in different patient demographics and clinical settings.

REFERENCES

- Creswell, J. W., & Poth, C. N. (2023). *Qualitative inquiry and research design: Choosing among five approaches*. SAGE Publications.
- Efendi, N., Syamsuddin, F., & Gorontalo, U. (2023). Analisis Praktik Klinik Keperawatan Penerapan Intervensiterapi Finger Hold Terhadap Tingkat Nyeri Pada pasien Cedera Kepala Ringan. *Jurnal Inovasi Riset Ilmu Kesehatan*, 1(3), 2079. <https://doi.org/10.55606/detector.v1i3.2079>
- Emzir. (2021). *Metodologi penelitian kualitatif: Analisis data*. P.T. Raja Grafindo Persada.
- Gurarie, M. (2024, Desember). *Apa itu Sakit Kepala Pascatrauma*. Verywell Health. <https://www.verywellhealth.com/post-traumatic-headache-definition-treatment-and-more->
- Innez Karunia, M., Wulandari, Y., Setyowati, Z. D., & Rakhmawati, N. (2017). Kombinasi Guided Imagery and Music (Gim) dan Relaksasi Autogenik Terhadap Nyeri pada Cedera Kepala. *Adi Husada Nursing Journal*, 5(1), 45-49. <https://doi.org/10.33006/ji-husada.v5i1.247>
- Kementerian Kesehatan RI. (2023). *Riset Kesehatan Dasar (Riskesdas) 2023*. Kementerian Kesehatan Republik Indonesia.
- Kusuma, A. H., & Anggraeni, A. D. (n.d.). Pengaruh Posisi Head Up 30 Derajat Terhadap Nyeri Kepala Pada Pasien Cedera Kepala Ringan. *Jurnal Ilmu Keperawatan Dan Kebidanan*, 4(1), 417-418. <https://doi.org/10.433056/ji-keb.20031>
- Muttaqin, A. (2018). *Asuhan keperawatan klien dengan gangguan sistem persyarafan*. Salemba Medika.
- Nugroho, N. (2018). Pengaruh pemberian posisi kepala elevated 30° terhadap penurunan nyeri kepala pada pasien trauma kepala. *Jurnal Keperawatan*. 2(1), 1-8.

- Onwuchekwa, C. R. (2017). Computed tomography pattern of traumatic head injury in Niger Delta, Nigeria: A multicenter evaluation. *International Journal of Critical Illness and Injury Science*, 7(3), 150–155. https://doi.org/10.4103/IJCIIS.IJCIIS_6_17
- Prasetyo, A., Sari, F., & Dewi, P. N. (2021). Pengaruh terapi relaksasi Benson terhadap penurunan intensitas nyeri kepala pada pasien cedera kepala ringan. *Jurnal Ilmiah Keperawatan*. 12(1), 22-29.
- Raihan, S., Kasih, L. C., & Kamal, A. (2023). Asuhan Keperawatan Pada Tn. I Dengan Cedera Kepala Sedang: Studi Kasus. *Jurnal Ilmiah Mahasiswa Fakultas Keperawatan*, 7(2). <https://doi.org/10.55681/jim.v2i11.1843>
- Rezkiki, N. E. F. (2022). *Penerapan 3s (Sdki, Siki, Slki) Dalam Asuhan Keperawatan Di Ruang Rawat Inap Rsud M. Natsir Solok*. [Disertasi doktoral, Sumatra Barat].
- Schwartz, D. R. (2023). The refugee crisis and peer relationships during childhood and adolescence. *Journal of Applied Developmental Psychology*, 88. <https://doi.org/10.1016/j.appdev.2021.101263>
- Sudaryono. (2021). *Metodologi penelitian kuantitatif, kualitatif, dan mix method*. Rajawali Press.
- Sugiyono. (2021). *Metode penelitian pendidikan: Pendekatan kuantitatif, kualitatif, dan R&D*. Alfabeta.
- Tim Pokja SDKI DPP PPNI. (2016). *Standar diagnosa keperawatan Indonesia*. Persatuan Perawat Nasional Indonesia.
- Tim Pokja SIKI DPP PPNI. (2018). *Standar intervensi keperawatan Indonesia*. Persatuan Perawat Nasional Indonesia.
- Tim Pokja SLKI DPP PPNI. (2018). *Standar luaran keperawatan Indonesia*. Persatuan Perawat Nasional Indonesia.
- Yunus, P. U. (2024). penerapan posisi head up 30 pada cedera kepala. *Malahayati Nursing Journal*, 6(8), 3039–3049. <https://doi.org/10.33024/mnj.v6i8.15140>