Proceedings
The International Conference of Advancements in Nursing Care (ADNURS)
Volume 3 Issue 1 (2026)
E-ISSN: 3110-0120

Section: General Nursing

Benson relaxation technique to reduce anxiety in preoperative patient in hospital setting

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Abstract
A fracture is a medical condition characterized by a partial or complete loss of bone continuity, which is determined by the specific type and mechanism of the injury. Management strategies for fractures are generally categorized as either conservative or operative. Typically, patients scheduled for surgical intervention experience physiological and psychological hyperarousal, including tachycardia (a rapid heartbeat), elevated blood pressure, tachypnea (rapid, shallow breathing), diaphoresis (excessive sweating), muscle tension, and a surge in stress hormones such as adrenaline and cortisol. Collectively, these manifestations signify preoperative anxiety. To mitigate this distress, the Benson relaxation technique serves as a highly effective, non-pharmacological nursing intervention. This case study aimed to evaluate the application of the Benson relaxation technique in reducing preoperative anxiety levels in a patient presenting with distal radius and ulna fractures in the Cempaka I Ward at Temanggung District Hospital. The research methodology employed a comprehensive case study design. Data collection was carried out through direct clinical observation, a thorough head-to-toe physical assessment, semi-structured interviews with the patient and family, and secondary data extraction from the hospital's Electronic Medical Record (E-RM) system. The study focused on a single preoperative fracture patient experiencing acute anxiety. The Benson relaxation intervention was administered once daily over three consecutive days.

Keywords: Anxiety, Benson relaxation technique, clinical outcomes, perioperative nursing, surgery

Introduction

A fracture is a loss of bone continuity, either total or partial, determined by its type and extent (Konstantelos et al., 2022). Fracture is a disruption of the normal continuity of the bone that occurs when the pressure on the bone is greater than the strength of the bone itself. The aetiology or causes of fractures include direct trauma, indirect trauma, physical force trauma, and spontaneous degeneration (Alhawas & Alghamdi, 2023). A study state that the incidence of fractures is increasing, approximately 13 million people with a prevalence rate of 2.7% (Kong et al., 2025). Fractures in 2019 occurred in approximately 15 million people with a prevalence rate of 3.2% (GBD 2019 Fracture Collaborators, 2021). Data in Indonesia in 2021 showed that there were 1.775 fracture cases (3.8%) out of 14.127 sharp or blunt force traumas, 236 people (1.7%) experienced fractures. Fractures can be treated conservatively or surgically. Surgery is an invasive medical procedure that involves opening a body part through an incision, followed by suturing and closing the wound (Cousins et al., 2019). Surgery can cause tissue damage, alter the body physiologically, and affect other organs, including emotionally (Pinto et al., 2016). Patients' emotional responses before surgery include fear, anger, and anxiety. Some of the physiological effects of anxiety include a faster heart rate, higher blood pressure, increased breathing, increased sweating, muscle tension, and increased production of stress hormones such as adrenaline and cortisol. Therefore, the most common clinical manifestation found in fracture patients with planned surgery is anxiety (Shebl et al., 2025).

Anxiety interventions can be delivered pharmacologically and non-pharmacologically. Preoperative patients experiencing anxiety can receive non-pharmacological interventions with minimal side effects. Drug interventions sometimes produce drowsiness and respiratory depression, which can complicate post- operative recovery (Laporta et al., 2021). Non-pharmacological therapies such as using Benson relaxation, lavender oil for relaxation, healing touch, hand reflexology, avoiding distractions, and providing lessons are some examples of non- pharmacological interventions. Relaxation techniques are one of the nursing/non-pharmacological interventions used as a complementary method for managing anxiety, including Benson relaxation therapy (Lakshmi & Naganandini, 2024). Benson relaxation therapy involves deep breathing accompanied by patient confidence. Relaxation can relax muscles and allow patients to divert their attention to the activity (Toussaint et al., 2021). When the body is relaxed, cortisol and adrenaline levels decrease. Furthermore, serotonin and endorphin levels increase. These hormonal increases

influence physiological responses, including decreased heart rate, decreased anxiety, and a calmer patient. Relaxation therapy is one of the links in the Indonesian Nursing Intervention Standards for diagnosing anxiety.

A robust body of literature supports the efficacy of the Benson relaxation technique in mitigating preoperative anxiety (Barabady et al., 2020). This suggests that while both non-pharmacological interventions are universally effective in alleviating stress, Benson relaxation therapy achieves a more pronounced average reduction in anxiety metrics. While these foundational studies confirm that the Benson relaxation technique successfully diminishes preoperative anxiety, existing literature predominantly relies on instruments such as the State Anxiety Inventory (SAI) and the HARS. Consequently, there remains a distinct clinical need to evaluate preoperative anxiety using alternative, comprehensive tools—specifically the Amsterdam Preoperative Anxiety and Information Scale (APAIS), which uniquely differentiates between a patient's need for information and their emotional anxiety. Driven by this literature gap, the researcher was compelled to conduct a targeted case study titled for this technique to reduce anxiety in preoperative patient.

Case Description

The respondent in this case study was Mr. C, a 19-year-old male admitted with a medical diagnosis of a closed fracture of the right (dextra) radius and ulna. The patient was hospitalized on January 26, 2025, following a motor vehicle accident where he was struck by a car while traveling home. He was subsequently scheduled for orthopedic surgery on January 30, 2025 (four days post-admission). Upon baseline nursing assessment, the patient's primary subjective complaint was profound anxiety regarding his impending surgical procedure and overall physical condition. This distress was objectively verified using the Amsterdam Preoperative Anxiety and Information Scale (APAIS), which yielded a baseline score of 24 (Severe Anxiety). In addition to psychological distress, the respondent complained of acute localized pain and restricted range of motion in his right upper and lower extremities. Based on the synthesis of this clinical data, Anxiety was established as the primary nursing diagnosis, supported by two concurrent secondary diagnoses: Impaired Skin and Tissue Integrity and Impaired Physical Mobility.

Discussion

The nursing process begins with a comprehensive assessment, which is executed through direct clinical observation, a physical examination, and structured interviews regarding the patient's current complaints and emotional state. Within this framework, the author conducted an assessment from January 27 to January 29, 2025, on Mr. C, a 19-year-old male. Psychologically, the patient reported profound anxiety stemming from delays in his surgical scheduling, expressing deep concern that the prolonged wait would exacerbate his orthopedic injuries. This anxiety was visibly manifest, and the patient actively refused a medical referral to an alternative hospital for immediate surgery due to fears that transit would further destabilize his injuries. To objectively evaluate this psychological distress, the Amsterdam Preoperative Anxiety and Information Scale (APAIS) was administered, yielding a baseline score of 24 (Severe Anxiety). From an orthopaedic standpoint, an anteroposterior and lateral (AP/Lat) X-ray of the right antebrachii revealed a displaced comminuted fracture of the right medial radius, alongside a displaced segmental fracture of the right ulna, with no visible joint dislocation. Physically, Mr. C reported acute pain secondary to a motor vehicle accident that occurred on the night of January 26, 2025. A pain assessment revealed that the pain was throbbing, located in the right hand and foot, exacerbated by excessive movement, and occurred intermittently for durations of less than 15 minutes. Furthermore, the patient presented with compromised tissue integrity. Physical examination revealed dry surgical dressings with minor blood seepage over wounds on his left forehead, nose, right foot, and right hand. Notably, the surrounding margins of these wounds showed no signs of localized infection, such as edema, erythema, or increased warmth. His baseline vital signs were stable, with a blood pressure of 121/82 mmHg and a pulse rate of 104 beats per minute. Due to his extensive musculoskeletal injuries, the patient was placed on strict bed rest and required total assistance with all activities of daily living (ADLs). His overall range of motion (ROM) was significantly decreased, restricting him to passive ROM exercises exclusively on his right upper and lower extremities.

The results of this study states that several clinical manifestations in patients with fractures include pain at the fracture site. This occurs due to muscle spasms, overlapping fracture fragments, or injury to surrounding bone structures. Swelling can appear immediately as a result of serous fluid accumulation at the fracture site and extravasation into the surrounding tissue (Billingham & Mittal, 2023). Another study described all patients as fearing a recurrence after a fracture, as well as a fear of disrupting the aesthetic appearance of the post-fracture limb (Kakehi et al., 2023). Other research has found that fear causes dysfunction in the neural network connected to motor imagination, making patients vulnerable to recurrent injury (Zhang et al., 2025). Therefore, psychological and physical interventions are the most effective approaches to managing fear in post-traumatic patients. The assessment data shows that there is a nursing diagnosis of anxiety, this is in line with several statements by several researchers above, in patients with fractures not only physical symptoms are found, several psychological symptoms such as anxiety, depression and body image disorders will become serious problems if not handled properly immediately.

Nursing diagnosis aims to identify the responses of individual clients, families, and communities to health-related situations (PPNI, 2017). The impact of trauma on fractures includes limited activity, due to pain resulting from displacement of motor and sensory nerves in the fracture wound so that most fracture patients' quality of life is

disturbed in the domain of physical function and physical limitations. Abraham Maslow, in his theory of the hierarchy of human needs, proposed that safety needs are second only to physiological needs. These needs encompass protection from physical and psychological harm, including anxiety and uncertainty. However, anxiety is a response to the perception of threat or uncertainty (Judah et al., 2025). If an individual does not feel safe either physically, emotionally, or in the social environment, then the need for safety becomes dominant, and all of the individual's psychic energy will be focused on overcoming this fear and anxiety. So, based on the findings of the study and the similarities with the nursing theory above, 3 main diagnoses were raised and anxiety/anxiety became the main diagnosis, which is expected to be able to overcome the complaints that occurred in the respondents.

In the nursing process, intervention planning is systematically developed following the formulation of nursing diagnoses. This phase involves constructing an evidence-based care plan prioritized according to the clinical urgency of the assessment findings, which requires establishing explicit objectives and measurable outcome criteria. For this case study, the nursing care plan prioritized the resolution of preoperative anxiety. The designated therapeutic goal was to achieve a significant reduction in anxiety metrics over three consecutive days of care. The expected outcome criteria included decreased verbalizations of confusion and worry regarding the impending surgery, reduced restless and tense behaviour, improved sleep patterns, and a downscaling of the objective anxiety score to a mild level. To achieve these outcomes, the Benson relaxation technique was selected as the primary independent nursing intervention. Relaxation strategies broadly function to calm the mind and body, thereby preventing acute mental, physical, and emotional stress. While various modalities exist—such as five-finger hypnosis—the Benson relaxation technique stands out as a unique alternative that integrates rhythmic diaphragmatic breathing with a cognitive anchor, such as a repeated word or phrase reflecting the patient's personal beliefs. Mechanically, this combination triggers a relaxation response by inhibiting sympathetic nervous system hyperarousal, which subsequently lowers systemic oxygen consumption, relaxes skeletal muscle tension, and induces a state of psychological calm and physical comfort. This approach aligns directly with the Indonesian Nursing Intervention Standards (SIKI), which classifies relaxation therapy as a primary, independent intervention package for managing anxiety. Ultimately, following the systematic implementation of Benson relaxation sessions once daily over three consecutive days, a final evaluation of Mr. C demonstrated a profound clinical improvement. His anxiety score on the Amsterdam Preoperative Anxiety and Information Scale (APAIS) dropped from a baseline of 24 (Severe Anxiety) to a post-intervention score of 12 (Mild Anxiety). This successful outcome strongly corroborates previous empirical literature asserting that the Benson relaxation technique is a highly effective, non-pharmacological tool for reducing preoperative anxiety in surgical patients.

Conclusion

The initial nursing assessment identified the respondent, Mr. C, as a preoperative patient diagnosed with a right radius and ulna fracture who exhibited classic manifestations of acute anxiety. Consequently, Anxiety was established as the primary nursing diagnosis for this case study. Two secondary diagnoses also emerged during the clinical analysis: Impaired Physical Mobility related to musculoskeletal impairment and Impaired Tissue Integrity (D.0129) related to mechanical factors. To address the primary diagnosis, the Benson relaxation technique was selected as the core non-pharmacological nursing intervention. Implementation of the therapy was consistently carried out once daily over three consecutive days. The final clinical evaluation revealed that Mr. C's anxiety was successfully resolved. Objective data captured via the Amsterdam Preoperative Anxiety and Information Scale (APAIS) demonstrated a significant clinical shift, with the patient's baseline score dropping from 24 (Severe Anxiety) to a post-intervention score of 12 (Mild Anxiety). These evaluative outcomes strongly align with current peer-reviewed literature, corroborating that Benson relaxation effectively mitigates anxiety levels in preoperative fracture patients. Ultimately, this case study demonstrates that the systematic integration of Benson relaxation therapy can serve as a valuable clinical reference for healthcare providers managing perioperative anxiety in patients scheduled for orthopaedic surgery.

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