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Analysis of Nursing Practice in Clients with Primary Case of Post-Operative Inguinal Hernia Pain Through the Combination of Slow Deep Breathing and Spiritual Care

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ABSTRACT

Background: Inguinal hernia is a common surgical condition that frequently causes significant postoperative pain. Effective pain management is essential to accelerate recovery, prevent complications, and improve patient comfort. Non-pharmacological approaches, such as relaxation techniques combined with spiritual interventions, are increasingly recognized as complementary strategies in nursing care.

Aims: This study aimed to determine the effectiveness of dhikr combined with slow deep breathing (SDB) in reducing postoperative pain among patients with inguinal hernia.

Methods: A case study design was conducted involving two patients treated at PUSRI Hospital, Palembang. Nursing care was provided from November 6 to November 18, 2023. The intervention of dhikr combined with SDB was implemented on November 8, 2023, for patient 1 (Mr. B, 65 years old) and on November 15, 2023, for patient 2 (Mr. L, 70 years old). The intervention was performed twice daily for 10–15 minutes over two consecutive days. Pain intensity was measured using a numerical rating scale before and after the intervention.

Results: The findings showed a reduction in pain scores. Patient 1's pain decreased from 7 to 4, while patient 2's pain decreased from 8 to 4 after the intervention.

Conclusion: Dhikr combined with slow deep breathing is effective as a non-pharmacological nursing intervention to reduce postoperative pain in inguinal hernia patients. This holistic approach integrates physical relaxation and spiritual coping, enhancing overall patient comfort.

INTRODUCTION

Hernia is an emergency condition that must be carefully addressed in Indonesia. Hernia, also known as turun berok in Indonesia, is a condition that can affect all age groups (children, adults, and the elderly). It is typically characterized by a protrusion or bulge that appears and disappears. Hernia becomes an emergency when it develops into an incarcerated or strangulated hernia. The term "incarcerated" refers to an irreducible hernia accompanied by obstruction, while "strangulated" refers to an irreducible hernia with compromised vascularization (Suhartono et al., 2019).

According to the World Health Organization (WHO) in 2011, the incidence of hernia has continued to increase each year. Between 2005 and 2010, there were 19,173,279 cases (12.7%) of all types of hernia worldwide, with the highest prevalence found in developing countries such as those in Africa, Southeast Asia (including Indonesia), and the United Arab Emirates, which recorded the highest number of cases globally—around 3,950 in 2011. In Indonesia, there were 1,243 cases of hernia, with inguinal hernia accounting for 230 cases (5.59%) (Jamini et al., 2022).

Inguinal hernia is the protrusion of an organ, such as the intestine or abdominal tissue, into the inguinal or groin region. It is the most common type of hernia, especially in men. The protruding organ or tissue usually originates from the small intestine or fat tissue. In women, however, inguinal hernia may involve reproductive organs, such as the ovary or fallopian tubes. Often, inguinal hernia

goes unnoticed. Patients usually report a lump or bulge in the groin, and in some men, the bulge can extend into the scrotum, causing scrotal enlargement (Noor & Falach, 2024).

One of the primary treatments for inguinal hernia is surgery, which involves repositioning the intestine and closing the hernia ring to prevent recurrence. Post-surgery, several nursing problems may arise, including acute pain, nutritional imbalance, discomfort, risk of bleeding, and risk of infection. Acute pain is the most common issue due to the surgical incision, which disrupts tissue continuity, triggers histamine and prostaglandin release, and causes pain. This can interfere with daily activities and recovery (Pebriana, 2020).

Nursing diagnoses frequently observed in post-herniorrhaphy patients include acute pain related to tissue discontinuity, nutritional imbalance due to nausea and vomiting, discomfort, risk of bleeding, and risk of infection. Among these, acute pain is the most critical issue. Postoperative pain arises from mechanical stimulation caused by tissue injury from the surgical incision, which activates catecholamine release. Excess catecholamines affect the cardiovascular system, increasing blood pressure and heart rate, leading to hemodynamic instability, reduced oxygen perfusion, and delayed wound healing (Rosdiana et al., 2023).

Management of acute pain in post-inguinal hernia surgery patients can be pharmacological—using analgesics—or non-pharmacological, such as relaxation techniques (deep breathing), distraction (watching television, listening to music), or warm compresses. Deep breathing relaxation is often used because it helps patients feel more comfortable and reduces pain intensity (Noor & Falach, 2024).

The nurse's role is crucial in providing nursing care, which includes educating patients about postoperative hernia management (pain control, early mobilization, and wound care) and curative interventions to prevent complications. This holistic approach ensures optimal recovery (Asmaya et al., 2024).

One effective intervention for reducing pain is slow deep breathing. This relaxation technique involves abdominal (diaphragmatic) breathing and pursed-lip breathing. Slow deep breathing stimulates the autonomic nervous system, influencing the sympathetic and parasympathetic responses. Continuous practice induces vasodilation in cerebral vessels, improving oxygen supply and tissue perfusion (Agustini et al., 2024).

The recommended frequency is six breaths per minute for 15 minutes. This enhances baroreceptor sensitivity, activates the parasympathetic nervous system, and increases acetylcholine secretion, which lowers heart rate and cardiac output, ultimately reducing blood pressure. Studies have shown that slow deep breathing performed twice daily for three months can significantly lower diastolic blood pressure and pulse rate (Pramesti et al., 2023).

In addition to slow deep breathing, nurses can incorporate spiritual care interventions, such as dzikir (Islamic meditation), listening to Qur'anic recitation for Muslim patients, or spiritual songs and prayers for non-Muslim patients. Regular dzikir practice has been shown to promote peace of mind and enhance psychological, social, spiritual, and physical health (Muzaenah & Hidayati, 2021).

A preliminary study in the Flamboyan Ward of PUSRI Hospital Palembang found 11 cases of inguinal hernia in September–October 2023. The most common problem observed in postoperative patients was pain. Treatment provided was mainly pharmacological, as prescribed by physicians, with no non-pharmacological interventions documented. Therefore, the authors are interested in implementing a combination of slow deep breathing and spiritual care (dzikir meditation) as an intervention to reduce postoperative pain in patients with inguinal hernia.

RESEARCH METHODS

This study used a case study design involving two patients diagnosed with post-operative inguinal hernia pain. The study aimed to analyze the effectiveness of combining slow deep breathing with spiritual care (dzikir meditation) in reducing pain intensity after hernia surgery. The research was conducted in the Flamboyan Ward of PUSRI Hospital Palembang during September–October 2023.

The participants in this case study were two patients selected through purposive sampling based on specific inclusion criteria, namely: patients diagnosed with post-operative inguinal hernia, experiencing acute pain after surgery, conscious and cooperative, and willing to participate. Patients with impaired consciousness, severe complications, or communication barriers such as hearing or speech impairments were excluded.

The intervention consisted of two components. First, the slow deep breathing technique, performed at a rate of six breaths per minute for 15 minutes, twice daily for three consecutive days. Second, spiritual care through dzikir meditation, in which patients were guided to recite dzikir (subhanallah, alhamdulillah, allahu akbar, la ilaha illallah) with calm and rhythmic breathing for 15 minutes, conducted after or during the relaxation sessions.

Pain intensity was measured using the Numeric Rating Scale (NRS) ranging from 0 (no pain) to 10 (worst pain). Assessments were carried out before and after each intervention session to evaluate changes in pain levels. Data were analyzed descriptively by comparing the pre-test and post-test pain scores of both patients, and the results were presented in tables and narrative form.

Ethical considerations were observed throughout the study. Permission was obtained from the head of the Flamboyan Ward, PUSRI Hospital Palembang, and both patients provided informed consent. Confidentiality and anonymity were maintained to ensure that the rights and privacy of participants were respected.

RESULTS AND DISCUSSION

The implementation of nursing care for a client diagnosed with inguinal hernia in the Inpatient Ward of PUSRI Hospital was carried out from November 6, 2023, to November 18, 2023. The nursing care was provided in stages, beginning with assessment, identification of nursing problems, nursing care planning, implementation, and evaluation of nursing actions, which together are referred to as the nursing process. The details of these stages are described in the following sections.

Table 1. Characteristics of the Case Description

No.	Patient Name	Age	Blood Pressure	Pulse	RR	Temperature	Postoperative Pain	Date of Care
1	Mr. B	65 years	100/70	98x/min	25x/min	36,5°C	7 (severe pain)	6-8 November 2023
2	Mr. L	70 years	102/66	78x/min	26x/min	36°C	8 (severe pain)	15-18 November 2023

This Final Scientific Work of Nursing (KIAN) was carried out in the Intensive Care Unit (ICU) of PT Graha Pusri Medika Hospital Palembang, located within the PT PUSRI complex on Mayor Zen Street. PT Graha Pusri Medika Hospital, also known as Pusri Hospital, is a Class C hospital that provides healthcare services based on the values of humanity, ethics, professionalism, benefit, justice, equality, non-discrimination, equity, patient protection, and safety. As a health service institution with social functions, the hospital is required to meet essential standards, including appropriate location, infrastructure, facilities, and qualified human resources, in order to deliver professional health services.

The Intensive Care Unit (ICU) is an independent department within the hospital, equipped with specialized staff and advanced medical equipment, dedicated to the observation, treatment, and therapy of patients suffering from life-threatening or potentially life-threatening conditions with uncertain prognoses. The services provided in the ICU differ from those in general inpatient wards, as patients in the ICU have a high level of dependency on nurses and require the use of a wide range of medical devices. Therefore, human resources in the ICU must possess comprehensive knowledge, skills, analytical abilities, and a high sense of responsibility, along with the capacity to make accurate and timely clinical decisions.

Case Description of Patient 1 (Mr. B)

Mr. B lives with his children, son-in-law, and grandchildren. Whenever he experiences health complaints, care is usually provided by his family, either at home or in the hospital. According to the family, if the patient has a fever, they usually buy medicine from a local shop, and his condition tends to improve shortly afterward. His dietary intake is not specifically controlled, and the family does not restrict his food as long as it does not cause any health complaints. In performing activities of daily living (ADL), Mr. B is fully independent, including mobility, ambulation, eating, bathing, and elimination (urination and defecation). He is also able to carry out light household chores such as

sweeping the yard, burning trash, feeding livestock, and sweeping inside the house. In addition, he remains strong enough to walk to the shop on his own. Although he does not engage in structured exercise, he routinely walks around the yard, visits neighbors' houses, takes his grandchild for a walk, or goes to the local shop. Due to his work as a market vendor, he frequently lifts heavy loads, which is considered a risk factor for his current health complaints, particularly inguinal hernia.

Case Description of Patient 2 (Mr. L)

Mr. L reported that before falling ill, he was accustomed to discussing problems with his family members before making decisions. During the assessment, the patient actively asked questions regarding his current condition, length of hospitalization, and when he would be able to return home. However, he expressed constant fear of experiencing sudden pain. Throughout hospitalization, Mr. L appeared restless, with a grimacing facial expression, indicating discomfort and difficulty in independently managing his pain. Both the patient and his family were not yet familiar with non-pharmacological pain management techniques, which increased their reliance on medical interventions. Nevertheless, Mr. L demonstrated a fairly good understanding of his illness, including recognizing the symptoms that usually appear during recurrence.

Based on the assessment of both patients, the author identified several nursing diagnoses in accordance with the priority problems found. The primary nursing diagnosis was acute pain related to invasive procedures, particularly in the postoperative condition. The second diagnosis identified was impaired comfort, which was associated with the presence of pain experienced by the patients. In addition, the third nursing diagnosis raised was the risk for infection, which was closely related to the invasive procedures performed.

The focus of this nursing scientific report is to reduce postoperative pain through the intervention of combining dzikir with slow deep breathing. The nursing care was carried out from November 6 to November 18, 2023. The implementation of the combined dzikir and slow deep breathing intervention was conducted on November 8, 2023, for Patient 1, and on November 15, 2023, for Patient 2. The intervention was performed twice daily, with each session lasting 10–15 minutes. Observations were conducted over a period of two days to evaluate the effectiveness of the intervention.

Table 2. Pre-test Application of Dhikr Combined with Slow Deep Breathing in Mr. B and Mr. L on Postoperative Pain Reduction of Inguinal Hernia

Name	Mr. B		Mr.L	
Intervention	Session I	Session II	Session I	Session II
Pain Scale	Before	Before	Before	Before
Day				
1	7	5	8	6
2	6	4	5	4

Based on Table 2, it can be seen that during the pre-test phase, before the implementation of the combined dzikir and slow deep breathing intervention, Patient 1 reported a pain scale of 7 (severe pain) during the first session on Day 1, and a pain scale of 5 (moderate pain) during the second session. On Day 2, the first session recorded a pain scale of 6 (moderate pain), and the second session showed a reduction to 4 (moderate pain).

For Patient 2, on Day 1 the first session recorded a pain scale of 8 (severe pain), while the second session showed a reduction to 6 (moderate pain). On Day 2, the first session recorded a pain scale of 5 (moderate pain), and the second session further decreased to 4 (moderate pain).

Table 3. Post-test Application of Dhikr Combined with Slow Deep Breathing in Mr. B and Mr. L on Postoperative Pain Reduction of Inguinal Hernia

Name	Mr. B		Mr. L	
Intervention	Session I	Session II	Session I	Session II
Pain Scale	After	After	After	After
Day				
1	5	3	6	5
2	4	0	4	2

Based on Table 3, it can be observed that during the post-test phase, after the implementation of the combined dzikir and slow deep breathing intervention, Patient 1 reported a pain scale of 5

(moderate pain) during the first session on Day 1, and 3 (mild pain) during the second session. On Day 2, the first session recorded a pain scale of 4 (moderate pain), and the second session showed a complete reduction to 0 (no pain).

For Patient 2, on Day 1 the first session recorded a pain scale of 6 (moderate pain), and the second session decreased to 5 (moderate pain). On Day 2, the first session showed a pain scale of 4 (moderate pain), and the second session further decreased to 2 (mild pain).

The number of inguinal hernia cases at PUSRI Hospital was recorded at 61 patients in 2022, with 11 cases reported in September 2023. The phenomenon of inguinal hernia is caused by several conditions that are often not widely recognized by the surrounding community. The most common causes include indirect inguinal hernia, which occurs due to congenital defects in the abdominal wall and is usually found in infants or children, and direct inguinal hernia, which occurs as a result of weakened abdominal wall muscles due to repeated pressure, such as frequent heavy lifting, commonly observed in adults. Several risk factors that may contribute to the weakening of the abdominal wall include a family history of hernia, chronic cough, straining during urination or defecation, chronic constipation, pregnancy, history of abdominal injury or surgery, obesity, and smoking habits. Although it can occur in anyone, inguinal hernia is more common in males, including infants, children, and adults (Afdhal et al., 2022).

Inguinal hernia is often unrecognized. Individuals with this condition generally notice a lump or bulge in the groin. In some men, the bulge may extend into the scrotum, making it appear enlarged. The bulge caused by inguinal hernia can be intermittent or persistent. If persistent, several symptoms may appear, including a sensation of heaviness, burning or discomfort in the affected area, pain and swelling in the groin, and pain when coughing, straining, or bending. In children and infants, the bulge in the groin typically appears when the child cries, coughs, or defecates (Anoldo et al., 2024).

Common nursing problems among post-herniorrhaphy patients include acute pain related to tissue discontinuity caused by surgery, imbalanced nutrition less than body requirements related to nausea and vomiting, impaired comfort, risk of bleeding, and risk of infection. Among these five nursing diagnoses, pain is the most crucial issue for post-herniorrhaphy patients. Postoperative pain arises from mechanical stimulation caused by tissue damage during surgery, particularly from the incision wound. This painful stimulus can activate the excessive release of catecholamines (Rosdiana et al., 2023).

Pain is a sensory and emotional experience perceived when tissue damage occurs, whether actual or potential, or is described as an unpleasant tissue injury. Acute pain may arise from trauma, injury, spasm, or disease affecting the skin, somatic structures, muscles, or internal organs. The intensity of pain gradually decreases in line with the healing process of tissue damage. Postoperative patients often experience pain caused by incision wounds and the body positions maintained during surgery. In post-surgical conditions, pain is triggered by mechanical stimulation of the wound, which may lead the body to produce chemical pain mediators (Janiah, 2024).

Pain management can be addressed using pharmacological or non-pharmacological approaches. Pharmacological management involves the use of analgesics to reduce pain, while non-pharmacological methods may include music therapy, murottal recitation, compresses, relaxation techniques, massage, and aromatherapy. One of the relaxation therapies proven effective in reducing pain is Slow Deep Breathing (SDB). SDB is a conscious breathing technique performed slowly and calmly, aiming to regulate respiration to induce relaxation. The benefits of this technique include managing stress, hypertension, pain, and respiratory disorders (Shakil et al., 2020).

The application of Evidence-Based Nursing (EBN) in this nursing scientific report is the combination of dzikir with slow deep breathing, carried out twice a day for 10–15 minutes. Observations were conducted over two days. The target patients were two elderly patients who had undergone inguinal hernia surgery. The purpose of this EBN intervention was to reduce the pain scale of post-hernia surgery patients. Pain intensity was measured using the Numeric Rating Scale (NRS).

Based on Table 2, it can be seen that in the pre-test phase, before the implementation of the dzikir and slow deep breathing intervention, Patient 1 on Day 1 had a pain score of 7 (severe pain) during the first session and 5 (moderate pain) during the second session. On Day 2, the first session pain score was 6 (moderate pain) and the second session was 4 (moderate pain). For Patient 2, on Day 1, the first session pain score was 8 (severe pain) and the second session was 6 (moderate pain). On

Day 2, the first session pain score was 5 (moderate pain) and the second session was 4 (moderate pain).

Based on Table 3, in the post-test phase, after the implementation of the dzikir and slow deep breathing intervention, Patient 1 on Day 1 had a pain score of 5 (moderate pain) in the first session and 3 (mild pain) in the second session. On Day 2, the first session pain score was 4 (moderate pain) and the second session was 0 (no pain). For Patient 2, on Day 1, the first session pain score was 6 (moderate pain) and the second session was 5 (moderate pain). On Day 2, the first session pain score was 4 (moderate pain) and the second session was 2 (mild pain).

Pain management is crucial for surgical patients. Postoperative pain management aims to prevent the adverse effects of pain, facilitate recovery, and reduce treatment costs by minimizing or eliminating patient discomfort. Pain management can be pharmacological and non-pharmacological. Advances in the molecular mechanisms of pain have led to the development of multimodal analgesia, combining both approaches. Pharmacological interventions (analgesics) are widely used, but patients are not free from side effects. Nearly 25% of patients receiving pain medication experience adverse effects. Although analgesics are frequently used for acute and severe chronic pain, studies indicate that non-pharmacological pain management can reduce the emotional effects of pain, improve adjustment, and foster a sense of control in patients, thereby reducing pain and improving sleep. Non-pharmacological pain management incorporates various approaches such as psychological, spiritual, and alternative therapies, which are often regarded as effective adjuncts in managing both acute and chronic pain. One example is psychological and spiritual-based non-pharmacological pain management (Muzaenah & Hidayati, 2021).

The development of spiritual interventions ranges from daily practices to research and nursing applications. Dzikir meditation, commonly practiced as Islamic prayer, can be performed at any time. Typically, it is conducted twice daily, either in the morning or evening, wherever convenient. Dzikir fosters a peaceful state of mind, enhancing psychological, social, spiritual, and physical well-being. As an authentic Islamic relaxation technique, dzikir therapy is considered a spiritual intervention. Another spiritual care method is listening to the recitation of prayers (Fratama et al., 2024).

Slow Deep Breathing is a relaxation technique that reduces pain by stimulating the central nervous system, specifically the spinal cord and brain, to produce endorphins that act as natural pain inhibitors. Reduced metabolism during slow breathing influences the autonomic nervous system by inhibiting stretch receptor signals and hyperpolarization currents through neural and non-neural tissues. This synchronization involves neural elements in the heart, lungs, cerebral cortex, and limbic system. During inspiration, lung tissue stretch generates inhibitory signals, causing slowly adapting stretch receptor (SAR) adaptation and fibroblast hyperpolarization. Both inhibitory conduction and hyperpolarization help synchronize neural pathways toward modulating the nervous system and reducing metabolic activity, thereby decreasing pain intensity. Slow deep breathing also significantly enhances parasympathetic nervous system activity, producing a relaxation effect that contributes to pain reduction (Anggraeni, 2021).

CONCLUSION

The implementation of Evidence-Based Nursing (EBN) through the combination of dzikir and slow deep breathing in postoperative inguinal hernia patients proved effective in reducing pain levels. Pre-test results showed that patients experienced moderate to severe pain, while post-test results indicated a significant reduction to mild pain or even complete absence of pain. This finding demonstrates that non-pharmacological interventions, particularly those that integrate psychological and spiritual aspects, can serve as valuable complementary therapies in postoperative pain management. In addition to reducing pain intensity, such interventions also enhance comfort, relaxation, and promote patients' psychological and spiritual well-being. Therefore, the application of dzikir combined with slow deep breathing can be recommended as a non-pharmacological strategy in surgical nursing practice.

In line with this, it is recommended that nurses integrate this intervention as part of their routine postoperative care, especially for patients with strong spiritual needs. Patients and families should also be provided with education on how to practice the technique independently at home as a means of self-management for pain and stress. Nursing education institutions are encouraged to incorporate non-pharmacological pain management methods, particularly spiritual and relaxation-

based approaches, into their curriculum to strengthen students' holistic care competencies. Furthermore, future research with larger samples and longer observation periods is needed to validate the effectiveness and sustainability of this intervention in various types of postoperative patients.

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