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Implementation of Deep Breathing Relaxation to Manage Acute Pain in Dyspepsia Patients in the Internal Ward of Serui Regional General Hospital

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Abstract. *Dyspepsia is a common digestive disorder characterized by symptoms such as epigastric pain, nausea, and vomiting. Its prevalence in Indonesia reaches 40–50% and it is a leading cause of hospitalization. Acute pain in dyspepsia often affects patients' quality of life, thus requiring appropriate nursing care. This case study applied a nursing process approach, including assessment, diagnosis, intervention, implementation, and evaluation, to provide care for a dyspepsia patient experiencing acute pain, aiming to reduce complaints and improve comfort. Data were collected through interviews, observations, and physical examinations on February 24–25, 2025, at Serui Regional General Hospital. The data analysis concluded that effective communication skills were essential during assessment, nursing diagnoses were tailored to the patient's condition, and the diagnoses identified included acute pain, nausea, nutritional imbalance, and knowledge deficit. The primary priority was acute pain, managed through pain management interventions, resulting in decreased pain levels. The acute pain issue was resolved on the first day, achieving the desired goals and outcome criteria. Nursing care provided to patient Nn. R.T successfully addressed the acute pain problem.*

Keywords: *Nursing care, Dyspepsia, Acute pain*

1. INTRODUCTION

Dyspepsia is a medical condition characterized by pain or discomfort in the upper abdomen. Although it is a non-communicable disease, its complications can result in a high mortality rate. This condition is one of the most frequently encountered health problems in daily life, often related to gastrointestinal complaints (Putri, 2024).

Clinically, dyspepsia can cause early satiety, bloating, general discomfort, nausea, and vomiting. Various diseases may arise from consuming unhealthy foods, which disrupt the body's balance, particularly affecting digestion and stomach health. Gastric acid production can be increased by certain chemicals, including alcohol, common analgesics, and vinegar. Digestive disorders can also be triggered by spicy foods, acidic foods and beverages, and stimulating spices (Nugraheni, 2023).

Dyspepsia is a non-communicable disease experienced worldwide. According to the South East Asian Regional Office (SEARO), morbidity and mortality from non-communicable diseases are projected to increase by 42% and 50%, respectively, while the WHO projects global mortality to rise by 73% and morbidity by 60% (Octaviana, 2021). Globally, 15–40% of the population experiences dyspepsia, with about 25% affected each year. In Asia, 8–30%

of the population suffers from this condition. In Indonesia, dyspepsia ranks sixth for outpatient visits and fifth for inpatient admissions (Timah, 2021).

Nationally, approximately 40–50% of Indonesians suffer from dyspepsia. Cases, representing around 11.3% of the total population, were projected to rise from 10 million to 28 million by 2020. Dyspepsia is among the ten most common diseases in Indonesia and one of the five leading causes of hospitalization. Its prevalence is higher among individuals under 55 years old, reaching 66%. Among adolescents aged 15–24 years, 18.3% experience dyspepsia (Laili, 2024). Modern lifestyle, stress, consumption of irritating foods, and irregular eating patterns are contributing factors.

Dyspepsia can result from organic and functional disorders. Organic diseases involve the digestive system or nearby organs, such as the pancreas or gallbladder, while functional dyspepsia can be triggered by psychological factors and resistance to certain foods or medications (Patty, 2021).

Patients with dyspepsia commonly face nursing issues such as acute pain caused by physiological damage, nutritional deficits due to swallowing difficulties, and exercise intolerance due to weakness. Clients may experience intermittent but persistent epigastric pain. Dyspepsia can indicate more severe conditions, such as gastric cancer or severe gastritis (Kedoh, 2021).

In Papua, particularly in Yapen, dyspepsia management combines lifestyle modifications and, if necessary, medical treatment. Effective management emphasizes lifestyle changes, including proper nutrition and regular exercise. Medical consultation is essential for accurate diagnosis and appropriate therapy if symptoms persist. Lifestyle interventions include consuming healthy foods, avoiding triggers, and engaging in regular physical activity. Medications such as antacids, acid suppressants, or prokinetics may be prescribed if needed (Marinu, 2023).

Based on the background above, the researcher considers it important to conduct a study on Nursing Care for Acute Pain in Dyspepsia Patients at Serui Regional General Hospital.

2. METHODE

This study employed a case study design, an approach that allows an in-depth examination of a single unit, enabling a comprehensive understanding of the variables involved and depicting the case's conditions, including previous history and interventions. The study focused on the nursing problems of Nn. R.T., a patient experiencing acute pain due to dyspepsia in the Internal Ward of Serui Regional General Hospital in 2025. The subject of this case study

was Nn. R.T., with a primary focus on acute pain resulting from dyspepsia. The operational definitions included: acute pain, defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage lasting less than three months (PPNI, 2023); dyspepsia, defined as epigastric pain caused by metabolic imbalance, commonly affecting adults aged 30–50 years (Sabrillah, 2025); and deep breathing relaxation, a focused diaphragmatic breathing technique performed slowly and regularly to calm the nervous system (Lehrer, 2022). The research instruments included an assessment format provided by the Diploma III Nursing Program, Kepulauan Yapen. The study was conducted in the Internal Ward of Serui Regional General Hospital from February 10 to March 3, 2025, with the case data collected on February 25, 2025. Data were gathered using bio-physiological assessments, observation, structured interviews, questionnaires, and a pain scale. Pain assessment followed the PQRSTUV framework: Provocative/Palliative (cause of pain), Quality/Quantity (characteristics and intensity), Region/Radiation (location and spread), Severity (degree of pain), Timing (onset and duration), Understanding (patient's perception), and Values (goals and expectations for pain management). The collected data were analyzed to evaluate the effectiveness of nursing interventions, particularly deep breathing relaxation, in reducing acute pain in patients with dyspepsia.

3. RESULT AND DISCUSSION

a. Result

1) Patient Identity

The subject of this case study was Nn. R.T., a 17-year-old high school student from Papua, Christian, unmarried, residing at Kampung Ambai. She was admitted to the Internal Ward of Serui Regional General Hospital on February 23, 2025, via wheelchair through the emergency department, with a medical record number 12 67 88. Data collection for the study was conducted on February 25, 2025. The patient's admission diagnosis was dyspepsia.

2) Medical History

The patient presented with epigastric pain, nausea, and vomiting. The main complaint was intermittent epigastric pain, described as a "stabbing" sensation, moderate in intensity (pain scale 4/10), lasting approximately 8 minutes. Two days prior to admission, symptoms began after consuming food from a local eatery, followed by nausea, vomiting, and fever. She had a previous history of malaria hospitalization and

had received oral medications and paracetamol. Her weight prior to illness was 58 kg, and she had no history of surgery.

3) General Condition and Vital Signs

The patient was conscious and compos mentis (E4 V5 M6), with blood pressure 90/70 mmHg, respiratory rate 20/min, pulse 90/min, and body temperature 36.2°C. She demonstrated understanding of her illness and attributed it to dietary negligence.

4) Assessment According to SDKI Approach

a) Physiological Needs

- *Oxygenation*: No complaints. Oxygen saturation was 97%, respiratory rate 20/min, pulse 90/min, blood pressure 120/80 mmHg. Lung auscultation revealed bronchovesicular sounds; no signs of aspiration or circulatory compromise were observed. No nursing problems identified.
- *Nutrition and Fluid*: The patient experienced nausea and decreased appetite. She consumed meals three times daily, preferred soft food during illness, and drank approximately 1,900 mL of water daily. Objective assessment showed height 157 cm, weight 55 kg, BMI 22.3 (normal nutritional status). Abdominal tenderness and reduced skin turgor were observed. Nursing diagnosis: Nausea (D.0076).
- *Elimination*: No complaints during urination or defecation. Bowel habits: 2x/day, soft consistency; urination: 2–3x/day. No urinary catheter or diaper use. Objective assessment revealed normal abdominal findings except mild tenderness. No nursing problems identified.

b) Activity and Rest

- *Sleep*: The patient reported difficulty sleeping due to pain. Daytime nap: 12:00–12:40 WIT; nighttime sleep fragmented, total 4–5 hours. Pre-sleep routine included using a mobile phone.
- *Activity*: Patient engaged in limited activities within the ward. Physical assessment showed normal posture, active range of motion, normal muscle tone, no tremor or paralysis. Assistance was needed for feeding. Nursing diagnosis: Disturbed Sleep Pattern (D.0055).

c) Psychosensory Needs

- *Pain and Comfort*: The patient reported acute epigastric pain, described as "stabbing," moderate in intensity (pain scale 4/10), lasting ≤8 minutes. She

practiced deep breathing as a self-management strategy. Emotional response included facial grimacing. Nursing diagnosis: Acute Pain (D.0077).

- *Neurosensory*: Patient was alert, oriented, with normal pupil reaction and reflexes. No nursing problems identified.

d) Other Categories

- *Ego Integrity, Growth and Development, Behavioral, Relational, Environmental*: No nursing problems identified.
- *Family Health History*: No issues reported.

5) Nursing Diagnoses

The primary nursing problems identified were acute pain related to dyspepsia and nausea due to decreased appetite. Interventions focused on pain management through deep breathing relaxation, monitoring vital signs, and supporting nutritional intake. Other assessed domains revealed no additional nursing problems.

6) Intervention

The nursing care plan for Nn. R.T., a 17-year-old patient admitted to the Internal Ward of Serui Regional General Hospital with dyspepsia and acute pain, focused on addressing her psychological needs related to pain and comfort. The nursing diagnosis was Acute Pain (D.0077) with the goal of reducing pain intensity (L.08066). Interventions included assessing the location, characteristics, duration, frequency, quality, and intensity of pain, using a pain scale, teaching deep breathing and relaxation techniques, recognizing nonverbal pain responses, and collaborating with the medical team to administer prescribed analgesics, including Ranitidine 1 ampule every 12 hours and Ondansetron 1 ampule every 8 hours.

7) Implementation

During the nursing care on February 25, 2025, the nurse performed a comprehensive pain assessment. The patient reported epigastric pain described as stabbing, moderate in intensity (pain scale 4/10), lasting up to 8 minutes. Objective observations included facial grimacing indicative of pain, with vital signs: BP 90/70 mmHg, RR 20/min, pulse 90/min, temperature 36.2°C, and oxygen saturation 97%. The nurse applied relaxation and deep breathing techniques, monitored pain responses, and administered the prescribed analgesics.

8) Evaluation

Following the interventions, the patient reported no pain, and the pain scale decreased from 4 to 0. Facial expressions normalized, indicating relief, and vital signs

remained stable (BP 110/70 mmHg, RR 21/min, pulse 90/min, temperature 36.0°C, O_2 saturation 97%). The acute pain diagnosis was resolved, demonstrating the effectiveness of the nursing interventions in reducing pain and improving patient comfort.

b. Discussion

1) Assessment

Nursing assessment is the initial stage of the nursing process aimed at collecting subjective and objective data to gain a comprehensive understanding of the patient's condition. The assessment was conducted on Nn. R.T., a 17-year-old female, on February 25, 2025, in the Internal Ward of Serui Regional General Hospital. The patient was admitted with a medical diagnosis of dyspepsia and was fully conscious (compos mentis). At the time of assessment, she was receiving intravenous Ringer Lactate (RL) fluid therapy at a rate of 20 drops per minute. The patient was first admitted on February 23, 2025, to the emergency unit with complaints of fever, nausea, and vomiting. After initial treatment and transfer to the inpatient ward, her fever subsided.

The assessment revealed that the patient's general condition was stable, with vital signs within normal limits: blood pressure 90/70 mmHg, respiratory rate 20 breaths/min, pulse 90 beats/min, temperature 36.2°C, and oxygen saturation 97%. Based on the primary complaint and medical diagnosis, acute pain was identified as the primary focus of the nursing assessment. According to Mardiyah and Saputri (2021), acute pain frequently occurs in patients with dyspepsia and is a key indicator for nursing assessment. Pain assessment includes identifying location, intensity, duration, precipitating and relieving factors, which is crucial for prioritizing nursing problems and planning interventions.

Dyspepsia is characterized by upper abdominal pain, postprandial fullness, early satiety, nausea, and bloating, with symptom variability among individuals. A systematic and thorough assessment is necessary. Direct observation of pain expressions, dietary patterns, medical history, and psychological factors that exacerbate symptoms are critical components of assessment (Yuliasari & Herminawati, 2023). Studies by Sari and Chanif (2020) also demonstrate that patients with dyspepsia commonly experience acute pain, shortness of breath, and

decreased functional ability, reflecting the multidimensional nature of pain as a sensory and emotional experience associated with actual or potential tissue damage.

A comprehensive nursing assessment, as conducted for Nn. R.T., allows for holistic understanding of the patient's condition, identification of priority problems, and planning of appropriate interventions. Structured collection of subjective and objective data forms the basis for accurate nursing diagnoses, intervention planning, and monitoring of patient responses.

2) Nursing Diagnosis

Based on the assessment of Nn. R.T. on February 25, 2025, the primary complaints were epigastric pain, nausea, and decreased appetite. Objectively, the patient displayed grimacing and held her abdomen, rating her pain as 6/10 on the numeric pain scale, indicating significant acute pain, commonly experienced by patients with dyspepsia.

According to the Indonesian Nursing Diagnosis Standards (SDKI) by PPNI (2017), acute pain is defined as a physiological and emotional response to actual or potential tissue damage, with sudden onset, short duration (less than six months), and usually identifiable causes. In dyspepsia, acute pain arises from gastric mucosal irritation due to increased acid secretion or hypermotility, producing discomfort in the epigastrium.

Linda (2023) supports that acute pain is a primary nursing diagnosis in dyspepsia patients. In the assessment, the patient reported epigastric pain radiating to the chest, evaluated using the PQRST method: P (provocative): epigastric pain; Q (quality): stabbing; R (region): epigastrium; S (severity): 5/10; T (timing): intermittent. Pain mechanisms involve nociceptor activation from tissue lesions and inflammation, releasing mediators such as prostaglandin E2, leukotrienes, and histamine, which contribute to hyperalgesia or allodynia.

Hanif Alya (2024) further confirms that acute pain diagnosis is relevant in dyspepsia, evidenced by epigastric pain, grimacing, and abdominal holding behavior. Additionally, knowledge deficits may exist due to insufficient patient information. Thus, acute pain is the primary problem requiring immediate intervention, supported by structured assessments that include physical and psychosocial aspects, guiding the development of precise and comprehensive nursing interventions.

3) Nursing Interventions

For acute pain management, non-pharmacological interventions are prioritized, including deep breathing relaxation techniques. These approaches are effective in reducing pain intensity without pharmacological side effects. Techniques include deep breathing exercises, distraction, dietary modification, body positioning, and lifestyle education.

Deep breathing relaxation helps reduce pain intensity through structured respiratory control. Musak (2023) describes it as slow maximal inspiration, brief breath-holding, and gradual exhalation, which lowers pain perception, improves pulmonary ventilation, and enhances oxygenation. Widiatie (2021) reports that such techniques reduce muscle tension, stimulate endogenous opioids, and increase tissue oxygenation, thereby decreasing pain signals to the brain.

In practice, patients perform 10 deep breaths with brief rest after every five, combined with 10 minutes of murottal therapy, showing effectiveness in alleviating pain (Maharani & Melinda, 2021; Widodo & Qoniah, 2020). Non-pharmacological interventions are cost-effective, accessible, and can empower patients in self-management (Appulembang & Abu, 2020).

Overall, interventions like deep breathing and finger relaxation are safe, practical, and effective for acute dyspepsia pain, with nurses playing a key role in education, guidance, and monitoring patient response.

4) Implementation

On the first day, interventions focused on patient education and non-pharmacological pain management. The patient was educated about the cause of her pain, gastric mucosal irritation due to acid secretion, to enhance understanding and compliance. The nurse guided the patient in deep breathing exercises: 4-second inhalation, 2-second hold, 6-second exhalation, repeated for three 10-minute sessions to reduce muscle tension and stimulate parasympathetic relaxation.

Pain was monitored every six hours using the Numeric Rating Scale (NRS) to evaluate intervention effectiveness. Pharmacological therapy, including antacids 30 minutes before meals, was administered in collaboration with the medical team.

Consistent implementation aligned with the nursing care plan improved therapy effectiveness, accelerated recovery, and indicated successful multidisciplinary collaboration. By the third day, pain decreased from 4/10 to 0/10, the patient appeared calm, and grimacing ceased, demonstrating the effectiveness of

combining education, deep breathing exercises, and pharmacological support in holistic pain management (PPNI, 2023; Damayanti & Handayani, 2023; Wardani & Prasetyo, 2023).

5) Evaluation

After one day of intervention, the patient's pain decreased from 6/10 to 2/10, demonstrating effectiveness of the pain management strategies. The patient began recognizing trigger foods and performing simple relaxation independently. Appetite improved, and she participated actively in care sessions.

By the third day, subjective reports indicated minimal pain, increased comfort, and better recognition of trigger foods. Objectively, appetite improved, facial expressions were relaxed, and cooperation during care was noted. These findings indicate that short-term goals of the nursing care plan were achieved (Wibowo & Dewi, 2022; Lailiyah & Hartati, 2021; Rahmawati & Suryani, 2024). Continuous evaluation is recommended to prevent recurrence and maintain stability.

Non-pharmacological interventions, particularly deep breathing relaxation, proved effective in managing acute dyspepsia pain, improving comfort, and supporting holistic nursing care. Sustained monitoring is necessary to ensure long-term patient stability and prevent symptom recurrence.

4. CONCLUSION

Based on the assessment, interventions, implementation, and evaluation conducted on a patient with dyspepsia, it can be concluded that acute pain is a significant primary issue that requires immediate management. Non-pharmacological interventions, particularly deep breathing relaxation techniques, have proven effective in reducing pain intensity, enhancing patient comfort, and supporting the patient's ability to manage symptoms independently. Providing education on the causes of pain, dietary habits, and pain management strategies, combined with pharmacological therapy such as antacids and ranitidine, resulted in a decrease in pain scale from 6 to 0 within three days of care. Evaluation demonstrated improvements in both subjective and objective patient conditions, including relaxed facial expressions, increased appetite, and active participation in care. These findings highlight the importance of a holistic nursing approach that integrates both pharmacological and non-pharmacological interventions for managing acute pain in patients with dyspepsia, and emphasize that continuous monitoring and evaluation are key to maintaining comfort and preventing symptom recurrence.

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