

*Review article*

The Effect of Deep Breathing Relaxation Intervention to Reduce Pain Intensity in Gastritis Patients: A Scoping Review

Rani Anggraeni¹, Siti Umaemah¹, Nabila Isty Dwi Nur Anjani¹, Shinta Arini Ayu¹, Siti Yulianti¹, Rhifa Sasqi Nurazijah¹, Resty Oktaviani¹, Novia Febriyanti¹

1. Department of Nursing, STIKes Permata Nusantara Cianjur, Indonesia

*Correspondence: Rani Anggraeni | STIKes Permata Nusantara Cianjur | ranianggraeni0907@gmail.com

Abstract

Introduction: An inflammatory condition affecting the gastric mucosa is called gastritis. This inflammation can cause swelling of the gastric mucosa to the detachment of the superficial mucosal epithelium which is the most important cause of disorders in the digestive system. Pain is an unpleasant sensory and emotional experience due to actual and potential tissue damage. Deep breathing relaxation is intended to reduce muscle tension, and anxiety to prevent increased pain stimuli, as one method of pain management.

Method: Selected articles from the literature are reviewed and used in this study.

Results: This scoping review shows that from 7 articles that meet the inclusion and 5 supporting articles that have been reviewed, deep breathing relaxation therapy has an effect on reducing the pain scale. Conclusion: Based on several explanations that have been put forward, that providing breathing relaxation therapy used for the process of pain management is very helpful in relieving the pain experienced by patients, therefore facilitating the healing process and this technique is very easy to do independently by patients.

Conclusion: Deep breathing relaxation techniques are effective in reducing pain intensity in gastritis patients, so they can be included in nursing interventions in the nursing diagnosis of pain comfort disorders.

Keywords: Gastritis, Pain, Deep Breathing Relaxation

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INTRODUCTION

Gastritis or commonly known as the term "gastric ulcer" is a disease that can attack all levels of society from all ages and genders, but gastritis most often attacks at age productive. In the productive age, vulnerable communities affected by gastritis due to the level of busyness and lifestyle that is not well-maintained and stressful. Many people still think that that gastritis occurs due to late eating (Princess, 2021).

Gastritis is one of the most common diseases found in internal medicine clinics and everyday life because gastritis is an inflammation of the gastric mucosa due to irritation and infection, where the stomach can be damaged by the squeezing process if it occurs continuously. This causes abrasions and wounds that cause inflammation of the gastric mucosa and sub mucosa.

Based on the results of the prevalence of gastritis according to the World Health Organization (WHO), the incidence of gastritis in the world reaches around 1.8-2.1 million of the population per year, while the incidence of gastritis in Southeast Asia is around 583,635 of the population per year in the article (Nirmalarumsari & Tandil Pasang, 2020). Gastrointestinal diseases cause more than 8 million deaths per year worldwide. (Wahyurianto, Friska Tifani Yunanda Yasin, Teresia Retna PD, 2023).

The Ministry of Health of the Republic of Indonesia explains that the incidence of gastritis is quite high every year and the prevalence is 40.8% or 274,396 cases in 238,452,952 people. The number of gastritis cases in Indonesia is included in the top ten diseases that require hospitalization where data from the Ministry of Health of the Republic of Indonesia shows as many as 30,154 or 4.9% of cases (RI, 2018). Data obtained that the highest incidence of gastritis with a total of 457,452 or 91.6% was in the city of Medan. Meanwhile, in West Java, according to data from the West Java Provincial Health Office in 2021, the incidence of gastritis reached 58,085 people (21.1%) (Indonesia, 2022).

This gastritis disease often occurs suddenly, usually marked by nausea and vomiting, bleeding, fatigue,

decreased appetite, or headaches. This can be caused by the habit of consuming a type of food that is sensitive to the person, eating too quickly, or eating with emotional disturbances. Conditions that arise suddenly or stomach pain (acute) are generally short-lived. In addition, this disease sometimes occurs chronically, where the cause is not clearly known. Chronic gastritis can begin with an infection of a bacteria called *Helicobacter pylori*, which disrupts the defense of the mucosal wall. Foods and drinks that are irritating, namely spicy foods and drinks with caffeine and alcohol content are agents that cause irritation of the gastric mucosa.(Princess, 2021).

Clinical manifestations that often occur in gastritis patients are pain. The pain felt is heartburn or epigastric pain.(Pranata et al., 2024). Pain is an unpleasant sensory and emotional experience resulting from actual or potential tissue damage. In general, signs and symptoms that often occur in patients experiencing pain can be reflected in patient behavior such as voice (crying, groaning, gasping), facial expressions (grimace, biting the lip), body movements (restless, tense muscles, pacing, etc.), social interactions (avoiding conversation, disorientation of time)(Arindra Prasasti Nugraheni, 2021).

One of the non-pharmacological therapies that can be given to patients experiencing pain from gastritis is complementary therapy.(Utami & Kartika, 2018). Some independent actions that can be carried out by nurses to help clients are by using pain management to eliminate or reduce pain and increase comfort. Using therapeutic communication to find out the patient's pain experience, namely by using distraction techniques, relaxation (using deep breathing), effluent massage, guided imagery, warm water compresses, deep progressive muscle relaxation techniques, finger grip relaxation.(Tuti Elyta et al., 2022).

In this literature review, the author is interested in the intervention of deep breathing relaxation, where the deep breathing relaxation technique is breathing in the abdomen with a slow frequency and slowly, rhythmically, and comfortably by closing the eyes when breathing. The effect of this therapy is distraction or diversion of attention. Deep breathing relaxation aims to control gas exchange to be efficient, reduce breathing performance, increase maximum alveolar inflation, increase muscle relaxation, eliminate anxiety, eliminate useless respiratory muscle activity patterns, slow down breathing frequency, reduce trapped air and reduce breathing work. The mechanism of deep breathing relaxation in the respiratory system is a state of inspiration and expiration of breathing with a breathing frequency of 6-10 times per minute so that there is an increase in cardiopulmonary strain. Deep breathing relaxation therapy can be done independently, is relatively easy to do than other non-pharmacological therapies, does not take long for therapy, and can reduce the scale of pain in gastritis sufferers.

There is a statement about the application of deep breathing relaxation can reduce pain, namely according to a research article conducted by Thahir and Nurlaela (2018) which was applied in the inpatient room of the Haji Makassar Hospital in 2018 based on a sample of 6 respondents (8.6%) with a mild pain scale, 59 respondents (84.3%) with a moderate pain scale, and 5 respondents (7.1%) with a severe pain scale. After being given deep breathing relaxation therapy, the highest pain intensity was moderate pain as many as 37 respondents (52.9%) and mild pain as many as 33 respondents (47.1%). Based on the results of the study above, it can be concluded that there is an effect of providing deep breathing relaxation on reducing pain in gastritis patients in the inpatient room of the Haji Makassar Hospital with a p value = 0.0009(Thahir, 2018).

And besides that, there are also supporting articles stating that providing deep breathing relaxation therapy can reduce pain intensity, namely according to research conducted by Mohamad I. Jarrah et al., which states that the use of slow deep breathing relaxation exercises or slow deep breathing relaxation exercises during CTR is an effective technique for reducing pain where patients who receive breathing relaxation therapy experience a statistically significant decrease in pain levels during three therapy periods.(Jarrah et al., 2022). Based on the explanation that has been put forward above, the author is very interested in reviewing several related articles about deep breathing relaxation therapy on reducing pain in gastritis patients. As one way to reduce pain in gastritis patients.

METHOD

The method used in writing the scoping review begins with selecting a topic, then determining keywords for searching articles using Indonesian via Google Scholar and English via Pubmed. 7 Indonesian articles and 5 English articles were selected based on inclusion criteria. The inclusion criteria in this scoping review are deep breathing relaxation therapy for reducing pain. The search for this article is limited to the year from 2019 to 2024 but the latest publication is recommended. The keywords used are "Gastritis, Pain, Deep Breathing Relaxation Therapy". The criteria in the scoping review are deep breathing relaxation therapy for pain in gastritis patients.

RESULTS

Deep breathing relaxation technique is a form of nursing care, in which the nurse teaches the patient how to do deep breathing, slow breathing (holding inspiration to the maximum) and how to exhale slowly. In addition to reducing pain intensity, deep breathing relaxation technique can also increase lung ventilation and increase blood oxygenation.(Hasnani, 2021). Based on the results of the article search through the Online Database, there are several articles that have met the requirements or met the Inclusion and Exclusion criteria, then a systematic article review was carried out on these articles.

Table 1. Extraction Data Results

Author and year	Article Title	Objective	Method	Results
(Thahir, 2018)	The Effect of Deep Breathing Relaxation on Reducing Pain Intensity in Gastritis Patients in the Inpatient Room of the Haji Makassar Hospital	To find out the effect of deep breathing relaxation on reducing pain intensity in gastritis patients in the inpatient ward of Haji Makassar Regional Hospital.	Quantitative	There is an effect of providing deep breathing relaxation on reducing pain in gastritis patients with a value of $p < 0.000 < \alpha < 0.05$ with results before providing deep breathing therapy, a scale of 4-7 (moderate pain) and after given a scale of 1-3 (mild pain)
(Novitasari & Aprilia, 2023)	Deep Breathing Relaxation Therapy For Acute Pain Management in Gastritis Patients	The aim is to find out whether deep breathing-based relaxation techniques can reduce pain in gastritis patients.	Descriptive	Deep breathing relaxation therapy has been proven to be effective in minimizing the pain scale of gastritis sufferers with the criteria of pain results reduced from a pain scale of 6 (moderate) to pain scale 2 (mild).
(Cynthia Puspariny 1, Diny Fellyana2, 2019)	The Effect of Deep Breathing Relaxation Techniques on Pain Intensity of Gastritis Patients at the Antar Brak Health Center, Limau District, Tanggamus Regency	To determine the effect of deep breathing relaxation techniques on pain intensity in gastritis patients at the Antar Brak Health Center, Limau District, Tanggamus Regency.	Quasi-experimental design	There is a significant influence of deep breathing relaxation techniques on pain intensity in gastritis patients with a p value = 0.000.
(Rifka Zalila et al., 2023)	Application of Deep Breathing Relaxation Techniques in Gastritis Patients with Acute Pain Problems at Bhayangkara M. Hasan Hospital, Palembang in 2022	Gaining real experience and knowledge and being able to document the Application of Deep Breathing Relaxation Techniques in Gastritis patients with Acute Pain Problems in Gastritis patients	Descriptive	The patient experienced a decrease in the pain scale after being given deep breathing relaxation therapy with an initial scale of 6 to a scale of 0.
(Pangestu, Muhammad Fedi, Sapti Ayubana, 2022)	Application of Deep Breathing Relaxation Techniques to Pain in Gastritis Patients in Metro City	To determine the characteristics of the subjects and the effect of applying deep breathing relaxation on reducing pain in gastritis patients in Metro City in 2021.	Descriptive	Deep Breathing Relaxation Technique can reduce the intensity of the pain scale in gastritis patients with an initial scale of 5 (moderate pain) to scale 2 (mild pain)
(Saputra et al., 2021)	Application of Breath Relaxation Techniques to Pain Scale in Gastritis Patients	To identify the effectiveness of applying breathing techniques on the pain scale in gastritis patients.	Case study	Te,,,,,deep breathing relaxation techniques can help reduce the pain scale in gastritis patients with an initial scale of 6 (moderate pain) It is a scale of 5 (moderate pain)
(Yuliana Sari et al., 2023)	Deep Breathing Relaxation Techniques and Warm Compresses For	To find out the deep breathing relaxation techniques and warm	Case study	There was a decrease in pain in gastritis patients who were given deep breathing relaxation

	Reduction of Pain Intensity in Gastritis Patients in Bumi Sari Village, Natar District, South Lampung	compresses to reduce pain intensity in gastritis sufferers.		techniques with an initial pain scale of 5-6 to a scale of 3.
(Hany et al., 2019)	Effect of Deep Breathing Technique on severity of Pain among Postoperative Coronary Artery Bypass Graft patients	To find out the influence of the technique deep breathing on the degree of pain in post-operative coronary artery bypass graft patients	Descriptive	Deep breathing techniques are a non-pharmacological nursing intervention technique that is safe, inexpensive, and effective in reducing the severity of pain. post CABG. DBS can be recommended as a pain relief technique after CABG.
(Silpiyani & Novitasari, 2023)	Deep Breathing Relaxation Therapy for the Implementation of Acute-Pain in Post-ORIF of Patella Sinistra Fractures Patients	To determine whether pain intensity decreases after applying non-pharmacological deep breathing relaxation techniques.	Descriptive	Deep breathing relaxation therapy can be used to reduce pain intensity in post-orif fracture patients. This non-pharmacological breathing relaxation technique is one way to reduce the pain scale. With an initial scale of 6 (moderate) to 2 (mild)
(Wahyuni & Maghfiroh, 2022)	The effect of deep breathing exercise in minimizing pain level of primary dysmenorrhea: Study at physiotherapy students of Universitas Muhammadiyah Surakarta	To determine the effect of deep breathing exercises on reducing primary dysmenorrhea pain.	Quasi-experiment	There was a decrease in pain before and after deep breathing exercises for menstrual pain (dysmenorrhea) with the results obtained from an initial p-value of 0.05 to a p-value of 0.000.
(Jarrah et al., 2022)	The effect of slow deep breathing relaxation exercise on pain levels during and post chest tube removal after coronary artery bypass graft surgery	To evaluate the effectiveness of slow deep breathing relaxation training (SDBRE) in reducing pain levels in patients during chest tube removal (CTR) after coronary artery bypass grafting (CABG) surgery.	Quasi-experiment	The use of SDBRE during CTR is an effective technique to reduce and minimize pain.
(Komara Putri & Lestari, 2019)	The influence of deep breathing relaxation techniques in reducing blood pressure and pain caused by hypertension	To measure the effect of deep breathing relaxation techniques in reducing pain and blood pressure in hypertensive patients.	Case study	Deep breathing relaxation techniques can provide health benefits. First, it can reduce the scale of pain and maintain healthy blood pressure levels in hypertensive patients. With an initial scale of 3-4 (moderate) to 2 (light)

DISCUSSION

The article above is an article that discusses deep breathing relaxation interventions to reduce pain intensity in gastritis patients, by considering the criteria that have been set by researchers and using Quasi Experimental, Descriptive, Quantitative, and Case Study research techniques. This research article comes from within the country and supporting articles from abroad with 7 (seven) Indonesian language articles and 5 (five) supporting articles in English, it was found that deep breathing relaxation techniques are effective in reducing pain intensity in gastritis patients. stimulating manner, so this causes a decrease in the levels of cortisol and adrenaline hormones in the body which affect a person's stress levels so that it can increase concentration.

This literature review focuses on the research results of 7 (seven) articles in Indonesian about the effect of deep breathing relaxation techniques on pain intensity in gastritis patients and 5 (five) supporting articles which state that the use of deep breathing relaxation techniques can help reduce pain intensity.

Signs and symptoms that occur in patients with gastritis are pain. Pain is a personal and subjective

experience and no two individuals experience pain in identical patterns. Complaints of pain can cause discomfort that can interfere with daily activities (Saputra et al., 2021). Some actions that nurses can take to help clients include using pain management to eliminate or reduce the scale of pain and increase comfort. One technique that can be used in pain management to reduce pain is to apply deep breathing relaxation techniques, by regulating breathing patterns in such a way that it will reduce the pain caused by pain.

According to Rukmala, in (Ibrahim et al., 2020) Pain reduction can be done by using deep breathing relaxation techniques, where when someone does deep breathing relaxation to control the pain they feel, the body will increase the parasympathetic nerve components in a. Of the 7 (seven) articles reviewed, there are similarities in the provision of deep breathing relaxation techniques to gastritis patients where the administration is carried out after drug therapy for approximately 10-15 minutes which is carried out in 3 consecutive days with the results obtained before the administration of deep breathing therapy, the highest pain intensity is pain with a scale of 4-7 (moderate pain) and after the administration of deep breathing therapy, the pain intensity is pain with a scale of 1-3 (mild pain) even if deep breathing relaxation therapy is carried out continuously, the pain decreases to a scale of 0.

But according to research articles (Yuliana Sari et al., 2023) There is one of the three patients who did not experience a significant reduction in gastritis pain because the patient still did not pay attention to the diet they consumed every day, where the patient still consumed foods that could cause gastritis to recur and was reluctant to do the deep breathing relaxation therapy that was given because he thought that the pain would go away on its own.

Therefore, from the Literature Review of the 12 (twelve) articles, it was found that deep breathing relaxation techniques are effective in reducing pain in gastritis patients. The 5 (five) supporting articles stated that deep breathing relaxation therapy can reduce pain intensity in hypertensive patients, patients with left patella fractures after ORIF, patients after appendectomy, and in patients with dysmenorrhea pain. So this deep breathing relaxation technique can be performed by medical personnel to meet the comfort needs of patients who experience pain. In addition, this deep breathing relaxation technique is a non-pharmacological technique that can be performed with guidance or independently without the guidance of medical personnel.

Deep breathing relaxation techniques can also be combined with other non-pharmacological techniques, making them more effective in reducing pain intensity in gastritis patients. From the results of the research, the reviewed articles showed significant results before and after the deep breathing relaxation technique was carried out. This technique is in line with nursing interventions in the nursing diagnosis of pain comfort disorders, one of which is using the deep breathing relaxation technique. (Oktaviani M et al., 2024)

CONCLUSION

Gastritis is an inflammation that affects the gastric mucosa. This inflammation can cause swelling of the gastric mucosa to the release of the superficial mucosal epithelium which is the most important cause of disorders in the digestive system. According to this Literature Review comprehensively summarizes, assesses and reviews the available literature on gastritis pain and deep breathing relaxation therapy to reduce pain in gastritis patients.

The conclusion in writing this Literature Review is that deep breathing relaxation techniques are effective in reducing pain intensity in gastritis patients, so they can be included in nursing interventions in the nursing diagnosis of pain comfort disorders. And based on several explanations that have been put forward above, that the provision of deep breathing relaxation therapy used for the process of pain management is very helpful in relieving pain experienced by patients, therefore facilitating the healing process and this technique is very easy to do independently by patients.

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