



## Progressive Muscle Relaxation Therapy to Reduce Pain Level in Gastritis Patients: A case Study

Nur Hidayat<sup>1</sup>, Ade Fitriani<sup>1</sup>, Lilis Lismayanti<sup>1</sup>

<sup>1</sup>Department of Nursing, STIKes Muhammadiyah Ciamis, Ciamis, Indonesia

Correspondence author: Nur Hidayat

Email: [nurhidayataskm2018@gamil.com](mailto:nurhidayataskm2018@gamil.com)

Address : Jl. K.H Ahmad Dahlan No. 20 Ciamis, Jawa Barat, 46211, 085314741575

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### ABSTRACT

**Introduction:** Gastritis is a common gastrointestinal condition often associated with pain and discomfort. Exploring effective pain management strategies is crucial for enhancing the well-being of individuals affected by gastritis. This study investigates the potential effectiveness of progressive muscle relaxation therapy in alleviating pain among gastritis patients.

**Objective:** This study aimed to assess the effectiveness of progressive muscle relaxation therapy in alleviating pain among patients diagnosed with gastritis.

**Methods:** The research was conducted at BLUD RSUD Banjar City from May 27 to May 31, 2022. The participant for this study was Mrs. I, a 62-year-old individual presenting complaints of pain in the left upper quadrant of the abdomen.

**Results:** Findings from the case study indicated observable changes post-progressive muscle relaxation therapy. The patient exhibited signs of relaxation, and the pain scale, initially high, decreased to 4 within 2 days after the intervention. Further reduction to a pain scale of 2 was noted using the Numeric Rating Scale method.

**Conclusion:** The study concludes that progressive muscle relaxation therapy exhibits promise in effectively reducing pain. Consequently, this therapeutic approach holds potential applicability in addressing acute pain issues among gastritis patients.

**Keywords:** acute pain, gastritis, muscle relaxation

### Introduction

Digestive system disorders, particularly gastritis, pose significant health challenges for many individuals. Gastritis, characterized by an inflammation of the gastro mucosa leading to increased acidity, manifests with symptoms such as a burning sensation behind the

breastbone, extending to the neck or throat without a sour taste in the mouth (Kusmiati, 2020; Nurhaidah et al., 2021).

Globally, the World Health Organization reports an annual incidence of gastritis affecting 1.8 - 2.1 million individuals worldwide (Merita et al., 2018). In Indonesia, the incidence is notably high, reaching 40.8%, particularly in regions such as West Java, where the prevalence stands at 31.2% among a population of 48,683,861 (Ilham, 2019; Padilah et al., 2021). Gastritis ranks among the top ten most common diseases in hospital inpatient clients, with 30,154 cases reported in Indonesia's 2018 health profile (Padilah et al., 2021).

Various factors contribute to gastritis, including the use of aspirin or non-steroidal anti-inflammatory drugs, *Helicobacter pylori* infection, alcohol, smoking, stress, uncontrolled diet, and consumption of spicy and acidic foods (Nurmaidini, 2020). The pathophysiology involves damage to the duodenum and intestines, particularly through non-steroidal anti-inflammatory drug use, which inhibits prostaglandin synthesis, leading to decreased mucosal defenses (Amrulloh & Utami, 2016).

Consumption of acidic and spicy foods can elevate stomach acid, causing gastric muscle stretching, delayed food transit to the intestines, and resulting in a range of symptoms, including a full stomach, reduced appetite, nausea, vomiting, and pain (Barkah et al., 2021). Pain, a common symptom of gastritis, is an unpleasant sensory and emotional experience arising from tissue damage (Bahrudin, 2017).

Pain in gastritis can be either acute or chronic. Acute pain is sudden and localized, while chronic pain persists for more than 6-10 months (Rakhmat Akbar, 2019; Saputra, 2021). Gastritis complications may lead to pernicious anemia, impaired absorption of vitamin B12 and iron, pyloric antrum shrinkage, peptic ulcer, bleeding in the stomach, and an increased risk of gastric cancer (Oktoriana & Krishna, 2019; Syarifudin, 2020).

Diagnostic examinations for gastritis include complete blood tests, respiratory examinations, and stool examinations (Sihotang, 2021). Nursing management involves lifestyle modifications, regular medication intake, and stress avoidance (Debi Ardiansyah, 2021). Treatment strategies are adjusted based on the underlying causes, with drug therapy targeting stomach acidity reduction, antibiotic use for infections, and avoidance of irritating drugs (Gustiana, 2020; Rachmat Malham & Rini, 2018). Pharmacological management includes the use of antacids, acid blockers, and proton pump inhibitors (Hasibuan, 2021).

Notably, progressive muscle relaxation therapy, despite its potential benefits in reducing epigastric pain, is underutilized in gastritis management. This therapy offers a gentle massage, decreasing cortisol production, releasing hormones as needed, and promoting emotional-mental equilibrium (Supetran I Wayan, 2016).

## **Objective**

This study aimed to assess the effectiveness of progressive muscle relaxation therapy in alleviating pain among patients diagnosed with gastritis.

## **Method**

The research employed a descriptive case study approach, utilizing the nursing process methodology to comprehensively address the gastritis-related acute pain issues in patients. Data collection followed the nursing process, encompassing assessment, identification of nursing diagnoses, formulation of nursing plans, implementation, and evaluation. The

intervention administered was progressive muscle relaxation, conducted for 25 minutes twice daily.

The population under investigation consisted of Mrs. I, a 62-year-old female presenting complaints of pain. Participant selection criteria, inclusive of both inclusion and exclusion criteria, were established. Inclusion criteria comprised patients diagnosed with gastritis, those experiencing pain, and those willingly participating in the entire intervention. Conversely, exclusion criteria included respondents withdrawing from the case study and patients returning from the ward.

The research was conducted in the Dahlia BLUD room at Banjar City General Hospital, spanning a duration of 2 days from May 28, 2022, to August 29, 2022. Data collection methods involved interviews, physical examinations, observations, and documentation.

## **Result**

### ***Case Presentation***

Upon assessment, Mrs. I, a 62-year-old resident of Rejasari Village, Langensari District, presented to the ER BLUD RSU Banjar City on May 27, 2022, with complaints of epigastric pain, nausea, vomiting, and dizziness. During the assessment in the Dahlia room on May 28, 2022, the patient reported persistent abdominal pain resembling cramps, alleviated at rest, registering a pain scale of 4 out of (0-10), along with nausea and dizziness. The patient had a medical history of lung and heart disease, with no reported family history of similar ailments.

### ***Vital Signs Examination***

The obtained results included a weight of 54.9 kg, height of 150 cm, GCS 15, blood pressure of 140/80 mmHg, pulse rate of 80x/minute, respiration rate of 22x/minute, and a temperature of 36.0°C. Abdominal examination revealed a symmetrical and flat abdomen without masses or lumps. Palpation indicated tenderness in the upper left abdomen and the solar plexus. Laboratory results showed abnormal blood parameters, specifically a leukocyte count of 15.1 thousand/mm<sup>3</sup>, neutrophils at 76%, and lymphocytes at 16%. The patient received therapy comprising RL infusion, ranitidine 2x1 mg, ondansetron 3x8 mg, omeprazole 3x1 mg, and methylprednisolone 2x8 mg.

### ***Nursing Assessment and Diagnosis***

The assessment identified acute pain related to gastric mucosal irritation (D.0077, page 172), aligned with the patient's complaints of left upper quadrant abdominal pain, heartburn, and cramp-like sensations. The pain scale was noted at 4.

### ***Nursing Action Plan***

The nursing plan included assessing pain complaints, monitoring vital signs, explaining dietary factors triggering increased stomach acid, positioning the patient comfortably, implementing progressive muscle relaxation, and collaborating in analgesic and antacid therapy administration. The relaxation procedure consisted of 15 muscle movements, conducted for 25-30 minutes (Astutik, 2017).

### ***Nursing Care Evaluation***

After two days of care, on May 30, 2022, subjective results indicated decreased pain, while objective results showed a relaxed demeanor and a pain scale of 2 (0-10). The acute pain

assessment, planning, recommendation of progressive muscle relaxation, implementation of progressive muscle relaxation techniques, patient understanding, and intervention reassessment were all part of the evaluation process, demonstrating positive outcomes.

## **Discussion**

The nursing care provided to Mrs. I, a patient diagnosed with gastritis in the Dahlia BLUD room at RSU Banjar, underscores the importance of employing a comprehensive nursing process approach. Spanning from the initial assessment to the subsequent evaluation, the care plan includes a nuanced intervention strategy that integrates progressive muscle relaxation therapy aimed at alleviating pain in gastritis patients.

In the assessment phase, Mrs. I reported experiencing abdominal pain characterized by cramping sensations, predominantly located in the upper left abdomen. The Numeric Rating Scale was employed to quantify the intensity of the pain, revealing a score of 4 out of (0-10). Importantly, the pain persisted continuously, abating only in response to medication and periods of rest. A comprehensive physical examination corroborated these symptoms, identifying tenderness in the upper left stomach area, accompanied by complaints of nausea and dizziness.

The manifestation of pain in the left upper quadrant of the abdomen served as a pivotal aspect guiding the identification of nursing diagnoses. Pain, viewed as a discomfort arising from tissue damage, emerges as a salient symptom in the context of gastritis, particularly localized in the upper abdominal region (Bahrudin, 2017).

The assessment results for Mrs. I led to the identification of acute pain nursing issues linked to gastric mucosal irritation. This aligns seamlessly with the diagnosis number D.0077 stipulated in the Indonesian Nursing Diagnosis Standards on page 176. The subsequent nursing action plan was meticulously executed, encompassing a range of strategies. This included continuous assessment of pain complaints, vigilant monitoring of vital signs, educational interventions elucidating the impact of dietary factors on stomach acid levels, strategic positioning of the patient for optimal comfort, introduction of progressive muscle relaxation techniques, and collaborative efforts in administering analgesic and antacid therapies.

Progressive muscle relaxation, selected as a targeted technique for pain reduction, involves a sequential relaxation of muscles extending from the legs to the head or vice versa. This approach enhances the patient's awareness of bodily responses, contributing to an overall sense of well-being (Supetran I Wayan, 2016). The research team opted for this technique, capitalizing on its potential to mitigate pain levels in gastritis patients.

The results of the nursing evaluation unfolded as a substantial reduction in acute pain experienced by Mrs. I. Following a dedicated 2-day intervention involving progressive muscle relaxation, the patient reported a noteworthy decrease in pain levels—from a baseline of 4 (on a 0-10 scale) down to 2. On May 28, 2022, Mrs. I communicated a reduction from a pain scale of 4 to 3 (0-10), and by May 29, 2022, the scale further dwindled from 3 to 2 (0-10). In addition to the quantitative improvements, qualitative aspects of the patient's well-being were also evident. The patient exhibited an overall sense of relaxation, with vital signs recording a BP of 130/80mmHg, Pulse of 80x/minute, Temperature of 36.0°C, and Respiration of 20x/minute.

These outcomes resonate with the findings of earlier research (Supetran I Wayan, 2016), attesting to the efficacy of progressive muscle relaxation therapy in the context of

gastritis-induced pain alleviation. The success of this intervention highlights the potential for its integration into broader nursing care strategies for gastritis patients. Further research and exploration of the long-term effects and sustainability of such interventions could provide valuable insights into refining and optimizing nursing care for gastritis sufferers.

### **Conclusion**

Upon completing the research, it is evident that the application of progressive muscle relaxation techniques significantly contributes to the reduction of pain in gastritis patients. The observed daily decrement in pain levels, with a consistent difference of one point, underscores the effectiveness of progressive muscle relaxation therapy in managing gastritis-induced pain. These findings affirm the suitability of incorporating progressive muscle relaxation as a viable and beneficial therapeutic intervention for individuals grappling with gastritis-related discomfort. Further exploration and continued research could provide additional insights into optimizing the integration of progressive muscle relaxation within the broader spectrum of care for gastritis patients.

### **Conflict of interest**

There is no conflict of interest.

### **Ethical approval**

This research has received ethical approval from the Health Research Ethic Commission of the STIKes Muhammadiyah Ciamis number 023/KEPK-STIKESMUCIS/XII/2022.

### **Authors' contribution**

Each author contributed equally in all the parts of the research. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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