Implementation Of Autogenic Relaxation Techniques to Reduce Pain Scale in Patients With Abdominal Colic

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ABSTRACT

Background: *Abdominal colic* brings up symptoms of pain that arise and disappear that can interfere with patient comfort, *abdominal colic* pain is usually accompanied by changes in pulse because the pain is very painful, and causes patients to pay less attention to the conditions around them because patients focus mainly on pain. Therefore, it takes effective treatment to overcome this pain, one of which is non-pharmacological techniques, researchers use *autogenic* relaxation techniques. *Autogenic* relaxation technique is a relaxation technique that comes from oneself using short sentences to make the mind calm and comfortable, it can also be called hypnosis to divert pain.

Objective: This study is to implement *autogenic* relaxation techniques to overcome pain.

Methods: This case study uses a descriptive method that aims to explore the problem, provide an overview of the case study and analyze more deeply about nursing care by implementing *autogenic* relaxation techniques to reduce the pain scale in patients with *abdominal colic*.

Results: After implementing *autogenic* relaxation techniques to reduce the pain scale in patients with *abdominal colic* for 3 days in the Dahlia room BLUD RSU Kota Banjar, it was proven effective to reduce the pain scale from a scale of 8 to 2, overcome pain, patients said the pain decreased, and seen from the grimace facial expression decreased.

Conclusion: the implementation of *autogenic* relaxation techniques has proven to be effective and very influential to overcome the problem of acute pain in patients with *abdominal colic*, so that it can be used as nursing care for these patients.

Keywords: *Abdominal Colic*, *Autogenic* Relaxation Technique, Acute Pain.

Introduction

The gastrointestinal system is one of the vital systems in the human body that plays an important role in the process of digestion, absorption of nutrients, and excretion of metabolic

waste. Disorders in this system can cause various clinical symptoms, one of which is abdominal pain. One type of abdominal pain that is often found in health care facilities is abdominal colic. Abdominal colic is abdominal pain that is intermittent and usually occurs due to smooth muscle spasm in hollow organs such as the intestines, gallbladder, or kidneys. This pain can significantly impair patient comfort and have an impact on quality of life, both from a physical and psychological aspect (Alma Purba et al., 2022) .

According to data from the World Health Organization (WHO) in 2019, the prevalence of abdominal colic in various countries is quite high. In the United States, about 20 million people or 10-20% of the adult population experience abdominal pain each year. In Europe, the prevalence reached 5.15%, while in Asian countries such as Japan, China, and North India recorded prevalence rates of 3.2%, 10.7%, and 7.1%, respectively. In Indonesia alone, data from the Ministry of Health in 2015 showed that the prevalence of abdominal colic reached 91.6% of the total number of patients with complaints of abdominal pain. This figure shows that abdominal colic pain is a serious health problem and requires appropriate and effective treatment (Beno et al., 2022).

Clinically, abdominal colic pain can be caused by various factors, such as gastrointestinal tract obstruction, inflammation, organ distension, or the presence of stones in the urinary or biliary tract. The pain can be moderate to severe, accompanied by nausea, vomiting, abdominal distension, and decreased appetite. This condition not only affects the physical status of the patient, but also has a psychological impact such as anxiety, stress and emotional tension. Therefore, the management of abdominal colic pain is not only focused on pharmacological treatment, but also needs to be combined with non-pharmacological approaches to obtain optimal results (Rahmawati et al., 2024) .

One of the non-pharmacological methods that are starting to be widely used in pain management is the autogenic relaxation technique. This technique is a relaxation method that comes from self-suggestion using short sentences that calm and cause a comfortable sensation. The principle of autogenic relaxation is to shift the patient's attention from focusing on pain to focusing on calmness and comfort, resulting in a decrease in the perception of pain felt. This technique also involves breath regulation, passive concentration, and warm and heavy body visualization exercises to stimulate the autonomic nervous system relaxation response (Mardiono, 2018) .

In a nursing context, the use of autogenic relaxation techniques is part of a non-pharmacological pain management intervention that is holistic and patient-centered. This technique has various advantages, including being easy to perform, does not require special tools, and can be applied independently by patients after receiving proper education from health workers. In addition, this technique is also safe and does not cause side effects as may occur with the use of analgesic drugs (Priyo et al., 2017) .

Various studies have shown that autogenic relaxation techniques are effective in reducing pain scales in various clinical conditions, including postoperative pain, menstrual pain, and pain due to digestive system disorders according to (Nurul Syafitri, 2018) . However, research related to the effectiveness of this technique in patients with abdominal colic is still limited, especially in clinical settings in Indonesia. Therefore, further research is needed to

explore the implementation of autogenic relaxation techniques in reducing pain scales in patients with abdominal colic, as well as its impact on patient comfort and physiological responses.

This research was conducted in the form of a case study to implement autogenic relaxation techniques in patients with abdominal colic in the inpatient room. The case study approach was chosen to describe in detail the nursing care process provided, starting from assessment, nursing diagnosis, intervention, implementation, to nursing evaluation. The results of this study are expected to be a scientific reference for health workers, especially nurses, in applying effective and measurable non-pharmacological interventions in pain management. In addition, the results of this study are also expected to improve the quality of nursing services and encourage the use of a holistic approach in caring for patients with acute pain.

With this background, the author feels interested in conducting a case study with the title "Implementation of Autogenic Relaxation Techniques Towards Decreasing Pain Scale in Patients With Abdominal Colic." This study not only aims to measure the effectiveness of the technique in reducing pain, but also to describe the implementation process thoroughly as part of nursing intervention.

Objective

This research aims to implement autogenic relaxation techniques as a non-pharmacological approach to managing pain and reducing pain intensity in patients.

Method

Design and setting

This study used a descriptive method with a case study approach carried out in the Dahlia Room BLUD RSU Kota Banjar for three days. The research subject was one patient who experienced *abdominal colic* with complaints of acute pain and met the inclusion criteria, namely conscious, cooperative, and had a moderate to severe pain scale. Data collection techniques were conducted through interviews, direct observation, and documentation studies. Measurement of pain intensity using the *Numerical Rating Scale* (NRS) measuring instrument with a scale of 0-10. Interventions in the form of *autogenic* relaxation techniques were carried out once a day for three days with a duration of 10-15 minutes per session, including breathing exercises, self-suggestion, and visualization of relaxed body parts. Data analysis was carried out descriptively to describe changes in the pain scale before and after the intervention and the patient's subjective response to the relaxation provided.

Population and sampling

The population in this study were all patients with a medical diagnosis of abdominal colic who were admitted to the Dahlia Room of BLUD RSU Kota Banjar. This population was selected based on the clinical characteristics of patients experiencing acute abdominal pain due to smooth muscle spasm in visceral organs, which is the target of autogenic relaxation technique intervention. This study focuses on the condition of patients who experience

moderate to severe pain and require comprehensive pain management, including through non-pharmacological approaches.

Inclusion criteria used in sample selection include patients who: (1) are fully conscious and cooperative, (2) experience acute abdominal pain with a pain scale of≥ 4 on the Numerical Rating Scale (NRS), (3) are able to communicate verbally, and (4) are willing to take part in the intervention and sign informed consent. Meanwhile, the exclusion criteria included patients with impaired consciousness, mental disorders that hinder participation, as well as patients who were undergoing pharmacological pain therapy in high doses that could affect the results of the intervention.

The sample in this study was taken using purposive sampling technique, which is the deliberate selection of subjects based on certain considerations in accordance with the research objectives. The number of samples in this case study was one patient, in accordance with the case study approach which emphasizes in-depth exploration of one unit of analysis. The selection of one patient is considered representative enough to describe the implementation of autogenic relaxation techniques in the context of nursing care in abdominal colic pain.

Instrument and measurement

The main instrument of this study was the *Numerical Rating Scale* (NRS) 0-10 which was validated as a measure of acute pain intensity. The scale was administered verbally to patients before and 15 minutes after each autogenic relaxation session; scores were recorded on the same observation sheet to maintain data continuity. In addition to the NRS, researchers used an autogenic relaxation implementation checklist sheet that included a sequence of steps (breath practice, self-suggestion, weight-warm visualization) as well as columns to record the patient's subjective (sense of comfort) and objective responses (facial expression, breath frequency, and basic vital signs). To improve reliability, the checklist sheet was reviewed by two senior clinicians and pilot tested on one different patient before the study began.

The measurement setup was in a quiet room, at the same time every day (10:00 am) to minimize environmental variability. The digital sphygmomanometer and oximeter were calibrated according to hospital procedures, while the researcher and accompanying nurse received a brief briefing to ensure consistent pain scale administration and observation procedures. During the intervention, the patient was positioned in semi-Fowler's position, lights were dimmed, and staff traffic was limited to allow the relaxation process to take place without distraction.

Data collection and analysis

Data were collected directly through structured interviews to obtain pain history (location, quality, duration) as well as patients' perception of comfort before and after the intervention, clinical observations recording facial expressions, breathing frequency, and basic vital signs; and documentation of the pain scale using the *Numerical Rating Scale* (NRS) measured just before and 15 minutes after each autogenic relaxation session for three consecutive days. All findings were recorded on a prepared daily observation sheet, so that

each variable - NRS score, vital signs, and subjective patient impression - had a consistent time record.

Analysis was performed descriptively quantitatively and qualitatively. NRS scores were analyzed by comparing pre- and post-intervention scores for each day, and a percentage reduction in pain was calculated to illustrate trends in effectiveness (e.g. a reduction from 8 to 2 equates to a 75% reduction). Qualitative data in the form of patient statements and observations of expression were extracted into themes of "increased comfort" and "reduced muscle tension", which were then elaborated to support the numerical findings. By combining both types of data, the analysis provided an overall picture that the autogenic relaxation technique not only consistently reduced pain scores, but also improved patient comfort and physiological responses.

Result

The patient's pain scale as measured by the *Numerical Rating Scale* (0 - 10) showed a consistent decrease throughout the three days of implementation of the autogenic relaxation technique. The initial score before the first session was 8 (severe pain). After the first day's session the scale dropped to 5, reflecting a 37.5% reduction. On the second day, the pain score decreased further to 3, showing a total reduction of 62.5% from baseline. The final session on the third day resulted in a score of 2 (mild pain), resulting in an overall reduction of 75 %. Qualitatively, the patient reported feeling "much more comfortable" in the abdomen, no more grimacing, more regular breathing, and being able to sleep without being awakened by pain. Vital signs (pulse and blood pressure) were stable within normal ranges throughout the intervention, supporting the conclusion that autogenic relaxation does not cause adverse physiological side effects.

Discussion

The results showed that autogenic relaxation techniques effectively reduced the pain scale in patients with abdominal colic, from a scale of 8 to 2 in three days of intervention. This finding is in line with the theory that autogenic relaxation works through activation of the parasympathetic nervous system which reduces muscle tension and provides a calming effect both physically and psychologically. The decrease in pain perception is also influenced by positive suggestions and patient focus on a relaxed body condition. These results are in line with previous research by (Priyo et al., 2017) . And (Djunaid et al., 2023) which showed the effectiveness of this technique on acute pain and anxiety. Despite the positive results, this study has limitations because it only involved one subject without a comparison group, so it cannot be generalized. Nevertheless, this technique has great potential as a non-pharmacological intervention that is safe, easy to perform, and increases the patient's active participation in the healing process. Further research with experimental designs and larger sample sizes is highly recommended to strengthen this scientific evidence.

Restate the Key Findings

This study shows that the implementation of *autogenic* relaxation techniques consistently reduces the pain scale in patients with *abdominal colic*. The pain scale which was initially at 8 (severe pain) decreased to 5 on the first day, then 3 on the second day, and reached 2 (mild pain) on the third day. Patients also reported increased comfort, reduced muscle tension, and better sleep quality after each intervention session. These results indicate that *autogenic* relaxation technique is an effective non-pharmacological approach to manage acute pain in *abdominal colic* cases.

Interpret the Results

The significant decrease in pain scale can be explained by the physiological mechanism of *autogenic* relaxation which works by stimulating the parasympathetic nervous system, decreasing sympathetic activity, and reducing muscle tension. This process creates a psychological and physical calming effect, which ultimately shifts the perception of pain and provides a sense of comfort. The self-suggestion used in this technique strengthens the individual's control over his or her body perceptions, including pain sensations. The visualization of a warm and heavy body helps the patient focus on relaxation, rather than on the perceived pain, so that pain perception can be suppressed naturally without pharmacotherapy.

Compare with Previous Studies

The results of this study are in line with the findings of Priyo, Margono, and Hidayah (2017) which state that autogenic relaxation is effective in reducing muscle tension and reducing pain in postoperative patients. Djunaid et al. (2023) also revealed that this relaxation technique is able to increase patient comfort and emotional stability, especially in cases of acute pain. In addition, a study by Wardany et al. (2025) reinforced that autogenic relaxation can be used in various medical conditions related to pain and anxiety. Thus, the results in this study expand the scientific evidence on the effectiveness of the technique, especially in patients with abdominal colic, which has not been studied in depth in Indonesia.

Highlight the Implications

The results of this study have important implications for nursing practice, especially in the non-pharmacological management of acute pain. Autogenic relaxation can be an effective, inexpensive, easy to teach, and safe alternative for patients. This intervention also encourages active patient involvement in the healing process through empowerment and self-control over body conditions. For health care institutions, the use of this technique can reduce dependence on analgesics and accelerate the healing process, which indirectly reduces the length of hospitalization and the burden of medical expenses.

Discuss the Limitations

This study has several limitations. First, the sample size used was only one person due to the case study approach, so the results cannot be generalized to a wider population.

Second, the absence of a control group makes it difficult to directly compare the effectiveness of this technique against other methods. Third, the intervention was only conducted for three days, which may not be enough to evaluate the long-term impact of the autogenic relaxation technique.

Suggest Future Research

Future research is recommended to use a quantitative design with a larger sample size and involve a control group to obtain more generalized and comparative results. In addition, longitudinal studies can also be conducted to assess the long-term effects of using autogenic relaxation techniques on pain management, sleep quality, and anxiety levels. The development of this technique in combination with spiritual approaches such as dhikr is also worth exploring to enhance a more holistic psychological impact.

Conclusion

The results of this study conclude that the implementation of autogenic relaxation techniques is effective in reducing the pain scale in patients with abdominal colic. The intervention, which was carried out in a structured manner for three days, showed a gradual and consistent decrease in pain scale, from a scale of 8 to 2. In addition to reducing pain intensity, patients also showed increased comfort and physical relaxation, such as reduced grimacing and calmer breathing. These findings suggest that autogenic relaxation techniques can be used as an alternative non-pharmacological intervention in nursing practice to manage acute pain. Although this research is still a case study, the results provide a scientific basis for the development of similar interventions on a wider scale, as well as encouraging the active role of nurses in empowering patients towards pain management independently.

Acknowledgement

Author Contribution

Both authors collaboratively played a full role in all stages of the research, from topic planning, proposal preparation, case study implementation, data collection and analysis, to writing and drafting scientific articles. Both authors also coordinated directly with the hospital and patients during the intervention implementation process. Both authors collaboratively ensured that this article was prepared in accordance with scientific principles and publication ethics.

Conflict of Interest

The authors declare that there is no conflict of interest in this study, either financially, professionally, or personally.

Ethical Clearance

This study has obtained ethical approval from the relevant educational institutions and hospitals where the research was conducted. Informed consent has been obtained in writing from patients who are research participants.

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