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A Case Study of Finger Grip Relaxation Intervention on Lowering Pain Scale in Appendicitis Patients

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Abstract

Background: Pain is the most common symptom that is often found in patients with appendicitis. One of the non-pharmacological interventions that can do to treat pain is Finger Grip Relaxation. **Objective**: This case study is to describe the finger grip relaxation technique intervention to reduce pain in appendicitis patients. **Methods**: This study uses a case study design with an evidence-based practice implementation approach focusing on nursing interventions. The research was conducted at the BLUD RSU Banjar City on 27-31 May 2022. The participant in this study was Mrs.C, a 35-year-old female who complained of right lower abdominal pain. The process of assessing and establishing a diagnosis focused on the main problem. Objective and subjective data become a reference for periodic evaluation of nursing implementation. The instrument used is a numeric rating scale. **Results**: the patient acknowledged that the pain decreased after the finger grip relaxation intervention. **Conclusion**: Finger grip relaxation intervention should be suspected to be effective in reducing pain in appendicitis patients, as evidenced by the subjective patient. Theoretically, this research does not conflict with previous research, so it can be a reference in future research. **Recommendation**: Clinically, finger grip relaxations can be an alternative intervention to reduce pain in patients with chronic diseases such as appendicitis in hospitals and health centers.

Keywords: appendicitis, fingergraph, head injury, pain

INTRODUCTION

Appendicitis is an acute inflammation of the vermiform appendix. The vermiform appendix is located in the lower right abdomen. It varies from 7 to 15 cm. Inflammation can occur due to several factors, such as lymph hyperplasia, appendix tumors, Ascaris worms that clog, and fecalith (1).

Data from the World Health Organization (WHO) states that the incidence of appendicitis in 2014 was the eighth leading cause of death worldwide, and it is estimated that in 2020 it will be the fifth leading cause of death worldwide. The incidence of appendicitis in Asia and Africa in 2014 was 4.8% and 2.6% of the total population, respectively. In Indonesia, appendicitis is about 7% of the total population, approximately 179,000 people (2).

The problem that usually arises in patients with appendicitis is pain. Pain that does not go away can affect discomfort, behavior, and daily activities. The patient characterizes pain often grimacing, frowning, biting his lip, being restless, and others. Pain management has several actions or procedures, both pharmacologically and non-pharmacologically. Pharmacological procedures are carried out by giving analgesics to reduce or eliminate pain (3,4). Meanwhile, one of the non-pharmacological pain management is using relaxation techniques.

Relaxation techniques allow patients to control themselves when there is discomfort or physical and emotional stress in pain. One type of relaxation used to reduce pain intensity is finger grip relaxation which is easy for anyone to do with the fingers and the flow of energy in our body (5). This is because when holding the finger, there will be a reaction that warms the points of entry and exit of energy meridians (energy channels) on the fingers. The reflex points on the hand will stimulate the reflex (spontaneous) when gripping. The stimulus will flow electricity to the brain, which will be received and greeted quickly, then to the nerves in the affected organs so that blockages in the energy pathways become smooth (6).

A study by Dikson et al., conducted in 2020, showed that before the finger grip relaxation intervention was given, patients who experienced pain were in the moderate category 13 respondents (65%). After giving finger grip relaxation intervention, most patients who experienced mild discomfort, as many as 12 respondents, got p value = $0.001 \leq \alpha = 0.05$. There is an effect of finger grip relaxation on changes in pain scale in post-op appendectomy patients in the Dahlia room, RSUD dr. T.C. Hillers Maumere (7). While various studies have found the benefits of finger grip relaxation in reducing pain, nurses rarely perform this intervention in clinical practice. They are more concerned with collaborative pharmacological interventions such as analgesia. At the same time, non-pharmacological therapy is one of the independent interventions that can be done by a nurse (8).

Finger grip relaxation is one of the independent nursing actions that can affect a decrease in the pain scale so that nurses can use it in hospitals or health centers in dealing with pain complaints in appendicitis patients. Therefore, the authors are interested in taking a case study titled "Case Study of Finger Grip Relaxation Therapy Interventions to Reduce Pain in Appendicitis Patients."

OBJECTIVE

This case study is to describe the finger grip relaxation technique intervention to reduce pain in appendicitis patients.

METHODS

This study uses a case study design with an evidence-based practice implementation approach focusing on nursing interventions. The research was conducted at the BLUD RSU Banjar City on 27-31 May 2022. The participants in this study were Mrs. C, age 35, female, who complained of abdominal pain. The process of assessing and establishing a diagnosis is focused on the main problem. Objective and subjective data become a reference for periodic evaluation of nursing implementation. Data analysis was carried out by exploring accurate and subjective data before and after the intervention.

RESULTS

Nursing Assessment

Patient Mrs. C, 35 years old, came to the emergency room at 10 am on May 27, 2022, with the main complaint of abdominal pain approximately 2 weeks ago, stabbing pain,

pain in the lower right abdomen, intermittent pain with a pain scale of 5 out of 10 patients also complained of cold sweats, nausea, and vomiting. The patient said it was the first time he had been hospitalized, and he was previously diagnosed with appendicitis in 2019.

After reviewing the main complaint and medical history, the vital signs were assessed. The results were blood pressure 110/80 mmHg, pulse 84 times per minute, respiration 20 times per minute, body temperature 36.7^{o}C, and oxygen saturation 98%. On physical examination, the focus was on the abdomen. The results obtained by the inspection were the shape of the abdomen was symmetrical and flat, and there were no masses or lumps. The results obtained an intestinal peristalsis frequency of 8 times per minute by auscultation. By palpation of the appendix for pain when pressed and released at the McBurney point. Subsequent assessment of percussion with tympanic results.

On diagnostic examination, the results of a complete blood count were normal. X-ray radiological results do not show active pulmonary tuberculosis, whole abdomen and normal results, and normal ultrasound results. RL infusion, ranitidine 2x50 mg, Ceftriaxone 1x1 gr, and paracetamol 3X50 mg are given therapy.

Nursing Diagnosis

The study found that psychologically emerging nursing problems were acute pain associated with obstruction of the lumen of the appendix with diagnostic number D.0077 on page 172 (7).

Nursing Intervention, Implementation, and Evaluation

Nursing interventions and activities need to be established to reduce, eliminate and prevent nursing problems for clients with acute pain related to obstruction of the appendix lumen, as follows in Table 1. Relaxation therapy is an alternative intervention that is scientifically proven to help the process of releasing endorphins (9,10). The endorphin hormone is a natural analgesic in the human body to reduce physiological pain responses (11). The combination of the relaxation process with finger grips is believed to be more optimal because there are acupuncture points that help reduce pain. In traditional Chinese medicine, acupoints are areas of the skin on collateral meridians (travels for energy traffic in the body), which are spread over the body's surface and are concentrated at specific points or areas (12).

Table 1. Nursing Intervention and Outcome

Nursing Outcome	Nursing Intervention
After nursing Intervention was given, it is expected that the level of pain can decrease with the following outcome criteria: a) Decreased pain complaints. b) Decreased grimacing. c) Decreased protective readiness. d) Decreased anxiety. e) Decreased sleep difficulties. f) Pulse frequency within normal limits.	Observation: a) Identify the location, characteristics, duration, frequency, quality, and pain intensity. b) Identify pain scale. c) Identify non-verbal pain responses. d) Monitor the success of complementary therapies that have been given. Therapeutic: Provide non-pharmacological techniques to reduce pain with Finger Grip Relaxation.

In the implementation, some procedures are carried out for acute pain patients related to obstruction of the appendix lumen, identify the location, characteristics, duration, frequency, quality, and intensity of pain, identify pain scales, identify non-verbal pain responses, and provide non-pharmacological techniques to reduce pain with techniques—finger grip relaxation.

According to what has been done on the patient, an evaluation was obtained on the 1st

day on 27 May 2022 and the 2nd day on 28 May 2022. The results obtained are as follows:

Table 2. Nursing Evaluation

Nursing Diagnosis	Evaluation	
	1st Day	2nd Day
Acute pain related to obstruction of the appendix lumen	S: The patient said the pain was slightly reduced on the scale to 4 out of 5 (1-10). O: The patient does not appear to be grimacing. A: Acute pain related to obstruction of the lumen of the appendix. P: Continue to apply finger grip relaxation when pain occurs. I: Finger grip relaxation. E: The patient understands how to deal with pain using finger grip relaxation. R: Finger grip intervention continued.	S: The patient said the pain was slightly reduced on the scale to 3 out of 4 (1-10). O: the patient does not appear to be grimacing. A: Acute pain related to obstruction of the lumen of the appendix. P: Continue to apply finger grip relaxation when pain occurs. I: Finger grip relaxation. E: The patient understands how to deal with pain using finger grip relaxation. R: Finger grip intervention is discontinued.

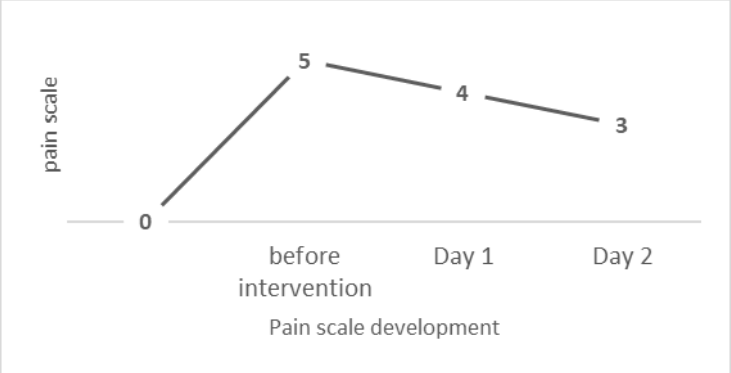

Figure 1. Pain scale development

The results of the intervention carried out by researchers show a decrease in the pain scale. Before the intervention, the patient's pain scale was 5 (1-10). After the first intervention, the patient's scale was reduced from 1 to a scale of 4 (1-10) based on the patient's expression. In the second intervention, the patient scale decreased from 4 to 3.

DISCUSSION

Nursing care for patients with appendicitis with pain problems at the BLUD RSU Banjar City has been carried out comprehensively by the authors based on theories from various sources. Nursing care procedures are carried out in 5 stages, including assessment, determination of diagnosis, intervention, implementation, and evaluation of nursing.

The results of the study obtained on Mrs. C are the patient complains of pain in the lower abdomen with pain like being slashed. Pain is felt in the lower right abdominal area, with a pain scale of 5 out of 10 using a numeric rating scale instrument, the pain comes and goes, and the patient looks a little grimaced. Physical examination showed a pulse rate of 84 beats per minute with a blood pressure of 110/80 mmHg. Meanwhile, temperature and respiration were within normal limits. The more a

person's pain increases, the higher the pulse rate. Pain can involve activation of the sensory nervous system and is a physiological response from the body; nociceptor stimulation and pain will affect changes in pulse rate. An increased pulse rate is a nociceptor stimulation in the vascular system, increasing peripheral resistance and pulse rate (8).

One of the pieces of evidence that the patient experiences pain is the patient's statement which says that the patient has pain in the lower right abdomen on a scale of 5 out of 10. In addition to subjective, objective data can be seen from the signs and symptoms that appear in pain, which can be found in the patient's looks, grimace, protective (e.g., alertness, pain avoidance position), restlessness, increased pulse rate, and difficulty sleeping. However, the assessment results on Mrs.C only found that the pulse was within normal limits and looked a little grimacing.

The patient's acknowledgment of his physical and psychological health condition is subjective data that can be considered when determining a nursing diagnosis (13). Therefore, based on the assessment results, the diagnosis was acute pain associated with obstruction of the appendicular lumen with the diagnostic code D.0077 on page 172 of the Indonesian Nursing Diagnostic Standards book.

To overcome this problem, researchers conducted nursing interventions and implementations per Indonesian nursing intervention standards number I.08238, page 201, including assessing the patient's vital signs and pain, such as location, characteristics, duration, frequency, quality, and intensity of the pain (14). However, researchers need to add a non-pharmaceutical in the form of a finger grip relaxation intervention. The finger grip is one of the relaxation techniques to reduce pain which is done by holding each finger for 2-3 minutes while taking deep breaths (15). This technique can warm the points of entry and exit of energy in the meridians (lines or pathways of energy in the body) located on our fingers so that they can provide reflex (spontaneous) stimulation when gripping. The stimulation will later flow waves to the brain, then proceed to the nerves in the organs experiencing disturbances, and blockages in the energy pathways become smooth (16).

A previous study showed a decrease in pain in appendicitis patients after being given a finger grip relaxation intervention for 3 consecutive days, a daily decrease of 1 point (17). Most of the postoperative Sectio Caesarea patients experienced moderate pain before being given therapy. However, after being given the finger grip relaxation technique, there was a change in the pain scale in postoperative Sectio Caesarea patients (15).

The results of the nursing evaluation showed positive changes to the patient's psychological status in the form of acute pain. The patient claimed to understand how to deal with acute pain with finger grip relaxation therapy, and after 2 interventions, the scale decreased from a scale of 5 down to a scale of 3 (1-10). These results align with other studies by providing 2 interventions in postoperative patients with Sectio Caesarea, with a decrease of 1 scale (18). The difference in the intensity of pain the respondent feels is possible because each individual's ability is different in responding to and perceiving the pain experienced. This situation can be related to the characteristics possessed by the respondent.

CONCLUSION

Finger Grip Relaxation Intervention should be suspected of effectively reducing pain in appendicitis patients, as evidenced by the patient's subjective acknowledgment of pain relief after the intervention. Pain reduction occurs as one of the impacts of the intervention in the form of decreased pain complaints, grimacing, decreased protective attitude, decreased anxiety, decreased sleep difficulties, and pulse frequency within normal limits. In addition, the researcher did not find a significant gap between theory and facts that hindered the study's results, so this research does not conflict with previous research.

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