APPLICATION OF PROGRESSIVE MUSCLE RELAXATION IN CERVICAL CANCER PATIENTS WITH CHRONIC PAIN IN THE ROOM OF TULIP ARIFIN ACHMAD HOSPITAL, RIAU

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Abstract

Cervical cancer is a condition in women in which cancer develops in the cervix, one part of the uterus. Cervical cancer often causes various complaints, one of which is pain. Preliminary studies conducted on patients show that 60% of cervical cancer patients experience pain. Pain management interventions for cervical cancer pain not only use pharmacology but can also use non-pharmacological methods such as Progressive Muscle Relaxation. Objective: The objective of this study is to determine the application of Progressive Muscle Relaxation in cervical cancer patients with chronic pain. Methods: The Evidence-Based Nursing (EBN) practice applied is Progressive Muscle Relaxation Therapy for cervical cancer patients. The study sample consisted of 2 patients experiencing cervical cancer pain. The intervention was conducted over 3 days, from July 10-12, 2025, with 1-2 sessions per day. The data analysis technique used in this EBN practice was comparative descriptive analysis, which involved describing the results of pre-test and post-test evaluations using a Numerical Rating Scale. Results: The results of the 3-day PMR therapy implementation showed a decrease in the pain scale in the first patient from 6 to 3. Meanwhile, in the second patient, the pain scale decreased from 5 to 2. The pain problem was resolved after PMR therapy was administered. It is hoped that PMR therapy can be used by nurses to manage pain in cervical cancer patients.

Keyword: cervix cancer 1; Progressive Muscle Relaxation2; pain scale 3.

INTRODUCTION

Cervical cancer is a problem in women where cancer develops in the cervix, one part of the uterus. According to the (Kementerian Kesehatan 2016), cervical cancer is more common in women than other types of cancer. Cervical cancer starts in the cervix, which is the entrance to the uterus and is an area of the female reproductive system located between the uterus and the sexual tract. (Banjarnahor et al. 2024). Based on data from the International Agency for Research on Cancer (IARC) GLOBOCAN 2020, there were 396,914 new cases and 234,511 deaths from cervical cancer globally (Sung et al. 2021). According to (Yusril, Ningsih, and Riani 2024) based on data from Arifin Achmad Regional General Hospital in Pekanbaru, Riau Province, in 2022, gynecological diseases, particularly cervical cancer, were found to be among the top diseases with approximately 1,167 patients. Data on the number of cervical cancer cases in the Tulip Ward in 2022 totaled 1,431 patients, and in January-June 2023, there were a total of 444 patients. Cervical cancer patients often experience various complaints, one of which is pain that is multifactorial and complex. This pain can arise due to tumor growth, tissue infiltration, or side effects of treatments such as chemotherapy and radiotherapy (Kementerian Kesehatan 2019). The main complaint of cervical cancer patients according to (Karepowan et al. 2025) is pain, and this is the most common reason for seeking medical treatment. 45-100% of cervical cancer patients experience moderate to severe pain. Pain management interventions for cervical cancer pain not only use pharmacology, but also non-pharmacology, namely Progressive Muscle Relaxation. The application of progressive muscle relaxation is one intervention that can help reduce pain and increase patient comfort (Rahmania, Natosba, and

Adhisty 2020). The purpose of this study is to determine the application of Progressive Muscle Relaxation on cervical cancer pain. Based on this, the author is interested in applying Progressive Muscle Relaxation therapy to reduce pain in cervical cancer patients in the Tulip Room of Arifin Achmad, Riau.

RESEARCH METHODS

The Evidence-Based Nursing (EBN) practice applied was Progressive Muscle Relaxation Therapy in cervical cancer patients with the following inclusion criteria: 1. Patients with stage II and III cervical cancer. 2. Patients diagnosed with cervical cancer who had been hospitalized for 3 days. 3. Patients who experienced pain and were willing to be respondents. Meanwhile, the exclusion criteria include: patients with physical disabilities that make it difficult to follow progressive muscle relaxation movements or rest in bed. The implementation method used is an experimental technique (treatment) on 2 respondents in accordance with the inclusion and exclusion criteria. Data were collected using direct observation methods according to the inclusion and exclusion criteria for the patients' clinical conditions, as well as using the Numeric Rating Scale pain measurement tool to measure the pain scale of cervical cancer patients. Data were collected before and after the intervention. The success indicator was determined based on changes in the pain scale of cervical cancer patients after the intervention. Increase in pain scale from pre-test Progressive Muscle Relaxation and decrease in pain scale from post-test Progressive Muscle Relaxation. In addition, based on the Indonesian Nursing Outcome Standards success criteria, namely a reduction in pain levels with a reduction in pain complaints, a reduction in anxiety, a reduction in facial expressions of pain, a reduction in difficulty sleeping, improved sleep patterns, improved blood pressure, improved pulse rate, and improved appetite.

RESEARCH RESULTS

The results of the case evaluation show that after three days of progressive muscle relaxation therapy, there was a significant improvement in both patients. In patient 1 (Mrs. S), based on the Indonesian Nursing Care Outcome Standards (SLKI) assessment, there was a decrease in pain complaints, a decrease in anxiety, a decrease in grimacing facial expressions, and an increase in appetite. The results of pain intensity measurements using the Numeric Rating Scale (NRS) showed that before therapy, the patient experienced moderate pain (scale 6), and after being given progressive muscle relaxation therapy, the pain intensity decreased to mild pain (scale 3). Meanwhile, in patient 2 (Mrs. D), the evaluation results also showed a decrease in pain complaints, decreased anxiety and grimacing facial expressions, as well as improved sleep quality and loss of appetite. Before therapy, the patient experienced moderate pain (scale 5), and after three days of progressive muscle relaxation therapy, the pain intensity decreased to mild pain (scale 2). Overall, these evaluation results indicate that progressive muscle relaxation therapy is effective in reducing pain intensity and improving the physiological and psychological condition of patients.

DISCUSSION

1. Nursing Assesment

Based on the assessment of patient 1 (Mrs. S), a 59-year-old woman with a medical diagnosis of CA Cervix II, with the main complaint of pain in the lower abdomen that sometimes spreads to the waist, intermittent pain, throbbing pain with a pain scale of 6 out of 10, pain that worsens when moving, and decreases when resting. In addition, the patient also complained of

decreased appetite, grimacing, appearing anxious and occasional nausea. Physical examination results showed dry mucosa, slightly chapped lips, pale appearance, a lump in the lower abdomen, occasional frowns, and occasional restlessness. Mrs. S's vital signs were blood pressure 132/89 mmHg, pulse rate 90 beats per minute, respiratory rate 20 breaths per minute, and temperature 36.8°C.

Based on the assessment of patient 2 (Mrs. D), a 27-year-old woman with a medical diagnosis of CA Cervix III, the main complaint was pain in the lower abdomen. The pain felt like a throbbing sensation, came and went with a pain scale of 5 out of 10, increased when moving, and decreased when resting. In addition, the patient also complained of sleep disturbances because the pain sometimes appeared during sleep and she felt unrefreshed when she woke up the next day due to lack of sleep. Mrs. D complained of weakness and loss of appetite, sometimes grimacing and feeling restless. Mrs. M's vital signs were blood pressure 117/82 mmHg, pulse rate 84 beats per minute, respiratory rate 20 breaths per minute, and body temperature 37°C.

2. Nursing Diagnosis

The results of data analysis conducted on patient 1 (Mrs. S) confirmed the nursing diagnosis of chronic pain associated with tumor infiltration. The results of data analysis conducted on patient 2 (Mrs. D) confirmed the nursing diagnosis of chronic pain associated with tumor infiltration. Pain is an uncomfortable and highly subjective feeling that can only be explained and evaluated by the person experiencing it. Pain can generally be defined as an uncomfortable sensation, ranging from mild to severe. The need for comfort in cervical cancer patients is very important, where comfort refers to safety in various aspects, both physiological and psychological (Kurniasih et al. 2023). Cancer pain sufferers may experience chronic, intermittent, or chronic pain at various stages of the disease (Pratitis and Adhisty 2022).

3. Nursing Intervention

Nursing interventions in this application focus on chronic pain nursing issues in patient 1 and patient 2, namely pain management (I.08238), which includes the following actions: identifying the location, characteristics, frequency, and intensity of pain; identifying the pain scale; identifying factors that cause pain; controlling the environment that exacerbates pain (temperature, lighting, noise); facilitating rest and sleep, teaching non-pharmacological techniques to reduce pain (progressive muscle relaxation), explaining the causes and triggers of pain, explaining pain reduction strategies, recommending non-pharmacological techniques to reduce pain, and collaborating in the administration of analgesics. The focus of nursing intervention is to apply non-pharmacological techniques to reduce pain through progressive muscle relaxation therapy. This is in line with research conducted by Adelia et al. 2024, which showed that the average pain scale before progressive muscle relaxation was 5.07 (moderate pain), while the average pain scale after PMR decreased to 3.74 (mild pain). Statistical test results showed a significant effect of progressive muscle relaxation on pain reduction in cervical cancer patients (p-value = 0.000). Cancer pain sufferers may experience chronic, intermittent, or chronic pain at various stages of the disease. Therefore, it is necessary to carry out various interventions in accordance with Evidence-Based Nursing Practice (EBNP), by providing Progressive Muscle Relaxation (PMR) therapy to reduce pain intensity in cervical cancer patients. PMR is one of the easiest relaxation techniques to perform, involving simple movements, widely used, and capable of enhancing patients' independence in managing health issues. PMR is performed by temporarily tensing muscles, then gradually releasing them from head to toe. This relaxation technique can create harmony between the body and mind, which is believed to facilitate physical and psychological healing. PRM exercises consist of deep

breathing exercises, a series of specific muscle contractions and relaxations, and distraction. The distraction process in ROP exercises causes changes in the intensity of pain felt by patients (Pratitis and Adhisty 2022). This decrease in pain intensity can occur because ROP exercises involve the autonomic nervous system by increasing parasympathetic nerve activity and decreasing stimulation of the sympathetic nervous system and hypothalamus, thereby minimizing the effects of physical stress on both. Activation of the parasympathetic nervous system will lower the heart rate, slow down the breathing rate, increase blood flow to the muscles and digestive tract, thereby reducing distress caused by physical symptoms. ROP will control activity, and the stimulus will then affect neurotransmitters (norepinephrine, serotonin, GABA) that regulate a person's feelings and thoughts. The transmission of stimuli to the central nervous system causes the release of endorphins, which reduce muscle tension and relax the body. Endorphins work by binding to opiate receptors and endogenous opiates, which then form an intrinsic pain suppression system. This binding reduces pain by preventing the release of receptors as pain-producing neurotransmitters (Pratitis and Adhisty 2022). According to (Rahmania et al. 2020), changes in the intensity of pain felt by respondents were not only due to the release of endorphins but also due to distraction, which required respondents to focus on each movement performed, thereby diverting their attention. A sense of comfort began to be felt during the 12th and 13th movements because the center of the pain was felt in the abdomen (stomach), so previous researchers recommended increasing the number of movements in that area.Progressive muscle relaxation intervention was carried out for 3 consecutive days, twice a day for 15 minutes. This intervention is in line with the recommendations in the Indonesian Nursing Intervention Standards (SIKI) regarding the provision of non-pharmacological therapy to reduce pain.

4. Nursing Implemention

The nursing intervention applied was the use of progressive muscle relaxation therapy on patient 1 and patient 2 who were experiencing pain by explaining and teaching progressive muscle relaxation techniques. Before applying progressive muscle relaxation, pain was measured using a numerical rating scale (NRS). The application began by creating a calm environment, adjusting the patient to a comfortable position, and then performing progressive muscle relaxation consisting of 14 movements in accordance with the predetermined standard operating procedure (SOP). According to research conducted by (Rahmania et al. 2020), progressive muscle relaxation therapy is applied in a lying or sitting position with the head supported as comfortably as possible. The results of the application on patient 1 (Mrs. S) after progressive muscle relaxation showed a decrease in the intensity of pain felt from a scale of 6 to a scale of 3. The results of the application on patient 2 (Mrs. D) after progressive muscle relaxation showed a decrease in the intensity of pain felt from a scale of 5 to a scale of 2.

5. Nursing Evaluation

The results of the case evaluation conducted 3 days after the application of progressive muscle relaxation in patient 1 (Mrs. S) based on the Indonesian Nursing Care Outcome Standards (SLKI) showed that the pain complaint had decreased significantly, blood pressure had improved, anxiety had decreased significantly, grimacing had decreased significantly, and appetite had improved. Based on the pain assessment scale using a numerical rating scale (NRS) before progressive muscle relaxation therapy was given, the patient experienced moderate pain with a score of 6, but after progressive muscle relaxation therapy was given, the pain was reduced to mild pain with a score of 3. The results of the case evaluation conducted 3 days after the application of progressive muscle relaxation in patient 2 (Mrs. D) based on the Indonesian Nursing Outcome Standards (SLKI) showed that pain complaints had significantly

decreased, blood pressure had improved, pulse rate improved, anxiety decreased significantly, facial expression of pain decreased significantly, complaints of weakness decreased, complaints of frequent waking/awakening decreased significantly, sleep dissatisfaction decreased significantly, and sleep patterns improved significantly. Based on the assessment of pain intensity using the Numeric Rating Scale (NRS) before progressive muscle relaxation therapy was given, the patient experienced moderate pain with a score of 5. However, after progressive muscle relaxation therapy was given, the patient's pain was reduced to mild pain with a score of 2.

CONCLUSION

1. The results of the cervical cancer patient assessment related to the application of progressive muscle relaxation show that patient 1 experiences chronic pain associated with tumor infiltration, characterized by a lump in the lower abdomen that is painful and radiates to the waist. The pain is intermittent and throbbing, with a pain scale of 6 out of 10. The pain increases with movement and decreases with rest. The results of the vital signs examination were blood pressure of 132/89 mmHg, pulse rate of 90 beats per minute, respiratory rate of 20 breaths per minute, and body temperature of 36.8°C. Patient 2 experienced chronic pain associated with tumor infiltration in the lower abdomen, throbbing pain, intermittent pain with a pain scale of 5 out of 10, increased pain when moving, and decreased pain when resting. Vital signs were blood pressure 117/82 mmHg, pulse rate 84 beats per minute, respiratory rate 20 breaths per minute, and body temperature 37°C.
2. The data analysis results established the nursing diagnosis for patient 1 (Mrs. S) as chronic pain related to tumor infiltration. Meanwhile, the nursing diagnosis for patient 2 (Mrs. D) was chronic pain related to tumor infiltration.
3. The nursing interventions carried out in this application refer to the Indonesian Nursing Intervention Standards (SIKI), namely pain management. In addition, the intervention also focuses on the application of Evidence-Based Nursing (EBN) results, namely the application of progressive muscle relaxation therapy in stage II and III cervical cancer patients with chronic pain nursing problems.
4. The nursing implementation provided to both patients in this application includes non-pharmacological therapy, namely the application of Evidence-Based Nursing (EBN) with progressive muscle relaxation aimed at reducing the pain scale. This application was carried out for 3 consecutive days and twice a day for 15 minutes.
5. The results of the nursing evaluation conducted after the application of progressive muscle relaxation therapy showed a decrease in pain scale in accordance with the Indonesian Nursing Outcome Standards (SLKI). Additionally, the assessment using the Numeric Rating Scale (NRS) showed that Patient 1 experienced a decrease in pain level from a scale of 6 to a scale of 3, and Patient 2 showed a decrease in pain level from a scale of 5 to a scale of 2.

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