NURSING CARE FOR CERVICAL CANCER PATIENTS WITH THE APPLICATION OF PROGRESSIVE MUSCLE RELAXATION TO ADDRESS NAUSEA IN THE TULIP WARD OF ARIFIN ACHMAD REGIONAL GENERAL HOSPITAL, RIAU PROVINCE

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Abstract

Cervical cancer is one of the cancers with the highest incidence and mortality rates among women in Indonesian. One of the main side effects of chemotherapy in cervical cancer patients is nausea and vomiting, which can reduce nutritional intake, cause dehydration, and decrease patients' quality of life. Management efforts include not only pharmacological approaches but also non-pharmacological interventions, one of which is Progressive Muscle Relaxation (PMR) therapy. The purpose of this case study was to determine the effect of progressive muscle relaxation (PMR) therapy in reducing nausea and vomiting in post-chemotherapy cervical cancer patients in the Tulip Ward of Arifin Achmad Regional General Hospital, Riau Province. The research design used was a case study with an Evidence-Based Practice Nurse (EBN) approach. Nursing care was provided to two cervical cancer patients. The intervention was conducted for three consecutive days, with each session lasting 30 minutes. Data were collected through interviews, observations, and completion of the Index of Nausea, Vomiting, and Retching (INVR) questionnaire. The results showed a decrease in nausea and vomiting scores after the implementation of Progressive Muscle Relaxation (PMR). In the first patient (Mrs. S), the nausea and vomiting score decreased from 29% to 8%, while in the second patient (Mrs. C), the score decreased from 23% to 2%, categorizing both patients as having mild nausea and vomiting. After receiving Progressive Muscle Relaxation (PMR) therapy, patients appeared more relaxed, were able to control nausea sensations, and demonstrated increased comfort. Conclusion, there was a decrease in the level of nausea and vomiting before and after the application of Progressive Muscle Relaxation (PMR) therapy. This therapy is an effective non-pharmacological intervention for reducing nausea in cervical cancer patients post chemotherapy.

Keyword: Cervical Cancer 1; Chemotherapy 2; Nause and Vomiting 3; Progressive Muscle Relaxation Therapy 4

INTRODUCTION

Cervical cancer is a disease that occurs in the cervix and can spread to the vagina and uterus. It is one of the major health problems affecting women worldwide, including in Indonesia. This disease is caused by a persistent infection of the Human Papillomavirus (HPV), particularly oncogenic types such as HPV-16 and HPV-18, which can trigger changes in cervical epithelial cells into precancerous lesions and even invasive cancer. Other risk factors include smoking habits, low socioeconomic status, early sexual intercourse, having multiple sexual partners, and a history of giving birth to many children (Burhan et al., 2023).

Breast cancer is the most common type of cancer in Indonesia, with 65,858 cases or 16.6%, followed by cervical cancer with 36,633 cases. In Indonesia, cervical cancer ranks second after breast cancer, with 36,633 new cases and 21,003 reported deaths in 2023 (Natosba et al., 2020). Cervical cancer is also one of the three diseases with the highest number of cases

at Arifin Achmad General Hospital, Riau Province. Based on data from 2016 to 2019, there has been an increase in both the number of new cases and mortality rates due to this disease. The Case Fatality Rate (CFR) shows an upward trend from 5.88% in 2016, rising to 10.36% in 2017, then increasing again to 17.30% in 2018, and reaching 17.37% in 2019 (Lismaniar et al., 2021).

Cancer treatment is determined based on the stage of the disease and may include surgery, radiotherapy, chemotherapy, or a combination of these methods. Chemotherapy is a cancer treatment method that involves administering specific drugs that function to destroy cancer cells, inhibit their spread, and relieve symptoms, even in late-stage cancer (Purwanti & Khoiriyah, 2024). However, this procedure often causes side effects in the form of significant physical responses, one of which is nausea and vomiting after chemotherapy, which can negatively impact patients' quality of life and reduce their adherence to treatment. Physical responses that may occur include hair loss (alopecia), diarrhea, constipation, myelosuppression, nausea and vomiting, hematologic disorders, inflammation, fatigue, and pain (Burhan et al., n.d.). These side effects may occur in several phases: acute (0–24 hours post-chemotherapy), delayed (24–120 hours post-chemotherapy), and anticipatory (prior to the next chemotherapy session due to previous experiences). Post-chemotherapy nausea and vomiting can be managed through both pharmacological and non-pharmacological techniques. Pharmacological management can be carried out by administering antiemetic medications. However, the use of antiemetic drugs may lead to additional side effects and is not always effective for all patients. Meanwhile, a non-pharmacological technique that can be provided to reduce post-chemotherapy nausea and vomiting is progressive muscle relaxation, which functions to enhance relaxation and comfort in cancer patients (Pujisantoso, 2021).

Progressive muscle relaxation techniques have been proven effective in reducing nausea and vomiting levels in cervical cancer patients. Progressive muscle relaxation is an exercise performed by tensing and then relaxing specific muscle groups. It is a type of relaxation technique that combines deep breathing exercises with a series of muscle contractions and relaxations (Octaviani et al., 2022). This technique works by activating the parasympathetic nervous system, creating a relaxation response, suppressing the activity of the sympathetic nervous system, and reducing the secretion of stress hormones such as cortisol and adrenaline. Progressive muscle relaxation helps reduce nausea and vomiting by regulating autonomic nervous system activity, suppressing the vomiting center in the medulla oblongata, and improving patients' ability to control their symptoms. In addition, this method stimulates an increase in endorphin production, which serves as a natural analgesic while also providing anti-stress effects (Shinta., 2021).

RESEARCH METHODS

The method used in this scientific work is a case study with a nursing care approach and Evidence-Based Practice (EBP) interventions. The main intervention applied is Progressive Muscle Relaxation as a non-pharmacological effort to manage nausea in cervical cancer patients. The intervention was given to patients diagnosed with cervical cancer post-chemotherapy, involving two participants.

The Progressive Muscle Relaxation intervention was carried out for three consecutive days on September 15 to 17, 2025, with a duration of 30 minutes for each therapy session. Evaluation of nausea and vomiting intensity was conducted using the Index of Nausea, Vomiting, and Retching (INVR) scale before and after the intervention. This intervention was implemented in the Tulip Ward of Arifin Achmad General Hospital Pekanbaru.

RESEARCH RESULTS

Table 1. Evaluation of the Results of Progressive Muscle Relaxation Therapy in Overcoming Nausea and Vomiting in Cervical Cancer Patients in the Tulip Room of Arifin Achmad Regional Hospital, Pekanbaru, Riau Province

Participant name	Day 1		Day 2		Day 3		Category of Nause and Vomiting
	Pre	Post	Pre	Post	Pre	Post	
Mrs. S	29%	20%	23%	14%	13%	8%	mild
Mrs. C	23%	16%	18%	8%	12%	2%	mild

Resource : primary data

The evaluation results in the table show that:

Client 1 (Mrs. S) experienced a decrease in nausea and vomiting. On the first day, her total score of 29% before progressive muscle relaxation therapy decreased to 20%, on the second day to 14%, and on the third day to 8%. After three days of progressive muscle relaxation therapy, she was categorized as mild nause.

Client 2 (Mrs. C) also experienced a decrease in nausea and vomiting, from a total score of 23% on the first day before progressive muscle relaxation therapy. On the first day, her nausea decreased to 16%, on the second day to 8%, and on the third day to 2%. The total reduction in nausea after three days of progressive muscle relaxation therapy was categorized as mild nause.

DISCUSSION

The evaluation results showed that the application of progressive muscle relaxation therapy to Mrs. S and Mrs. C was effective. The results of Mrs. S's pre-test and post-test questionnaires using the INVR questionnaire showed a decrease in scores from 29% to 8%, which is categorized as mild nausea. Meanwhile, for Mrs. C, the pre-test and post-test questionnaires showed a decrease in scores from 23% to 2%, which is categorized as mild nausea.

These findings align with a study conducted by Pujisantosos, H. (2021) entitled " The Influence Of Progressive Muscle Relaxation Therapy On Reducing CINV (Chemotherapy Indused Nausea and Vomiting) In RSUD Dr. Saiful Anwar Malang.," Conclussion of this study based on result that there is an effect of progressive muscle relaxation exercises on reducing nausea and vomiting due to chemotherapy from severe to mild, so this therapy is recommended as a non pharmacological management to reduce complaints of nausea and vomiting due to chemotherapy in patients with cancer.

These findings align with existing literature that supports the effectiveness of PMR in alleviating nausea and vomiting, particularly in clinical populations experiencing stress and somatic symptoms. PMR is a relaxation technique that systematically tenses and relaxes muscle groups to reduce physical tension and psychological arousal, thereby mitigating symptoms associated with stress and discomfort (Jacobson, 1938; McCallie, Blum & Hood, 2006). The progressive reduction in nausea scores observed in this study is consistent with research showing that relaxation therapies can modulate autonomic nervous system activity, which plays a role in gastrointestinal function and nausea perception (Bernstein & Borkovec, 1973).

The decrease in nausea and vomiting over consecutive days may be explained by the interaction between stress reduction and physiological regulation. Nausea and vomiting are not only physiologically driven but are also influenced by emotional and cognitive states (Heitkemper & Shaver, 2000). Psychological stress can activate the hypothalamic-pituitary-adrenal (HPA) axis and increase sympathetic nervous system activity, which may exacerbate gastrointestinal distress (Black, 2006). By promoting relaxation and reducing sympathetic arousal, PMR may help restore normal gut motility and decrease the severity of nausea symptoms, as observed in both clients.

Recent evidence further supports the use of relaxation techniques like PMR in managing nausea across various populations. A 2023 systematic review reported that relaxation interventions, including PMR, significantly reduced nausea severity among patients undergoing treatment for chronic illness and those with psychosomatic symptomatology (Johnson et al., 2023). This suggests that the benefits of PMR are not limited to acute stress contexts but also extend to symptom management in repeated or prolonged discomfort episodes. It is also important to consider that the progressive nature of the decrease — from moderate to mild nausea over three days — reflects the cumulative therapeutic effects of repeated PMR practice. Consistent engagement with relaxation exercises enhances individuals' capacity to regulate physiological stress responses over time, which can lead to more substantial and sustained symptom improvement (Carlson & Hoyle, 1993). These findings highlight the potential value of incorporating PMR as a non-pharmacological adjunct to traditional care for managing nausea and vomiting, especially in settings where these symptoms are stress-related.

CONCLUSION

During the assessment conducted on September 15, 2025, data were obtained from two patients, identified as Mrs. S and Mrs. C. Before the implementation of Progressive Muscle Relaxation (PMR) therapy, Mrs. S had a nausea and vomiting score of 29%, categorized as very severe nause and vomiting, and after the therapy was applied, the score decreased to 8%, categorized as mild nause and vomiting. Similarly, Mrs. C had a pre-therapy implementation of Progressive Muscle Relaxation (PMR) therapy score of 23% categorized as severe nause and vomiting, which decreased to 2% as mild nause and vomiting after the implementation of Progressive Muscle Relaxation (PMR) therapy.

The application of Progressive Muscle Relaxation (PMR) proved effective in reducing nausea and vomiting among cervical cancer patients undergoing post-chemotherapy treatment. Both participants experienced a consistent decline in INVR scores over the three-day intervention, showing improvements from moderate or severe nausea to mild or no nausea at all. These findings support the use of progressive muscle relaxation as a beneficial non-pharmacological nursing intervention that can enhance patient comfort, improve symptom control, and potentially increase adherence to cancer treatment.

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