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IMPLEMENTATION OF EVIDENCE-BASED NURSING PRACTICE : A COMBINATION OF GUIDED IMAGERY AND PC6 ACUPRESSURE TO REDUCE NAUSEA IN PATIENTS UNDERGOING CHEMOTHERAPY

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ABSTRACT
Chemotherapy-Induced Nausea and Vomiting (CINV) is a common side effect in cancer patients undergoing chemotherapy. This condition can reduce quality of life and therapy compliance. Non-pharmacological approaches such as guided imagery and PC6 acupressure are alternative evidence-based interventions. To describe the implementation of Evidence-Based Nursing Practice (EBNP) in the form of a combination of guided imagery and PC6 acupressure and to evaluate changes in nausea levels in patients undergoing chemotherapy. EBNP implementation was carried out on 10 cancer patients undergoing chemotherapy at Dr. Mohammad Soewandhie General Hospital, Surabaya. The interventions provided were guided imagery for 10–15 minutes and PC6 acupressure for 2–3 minutes. The level of nausea was measured before and after the intervention using the INVR (Index of Nausea, Vomiting, and Retching) instrument. Data analysis used the Wilcoxon test with a significance level of $\alpha = 0.05$. All respondents experienced a decrease in nausea scores after the intervention. A total of 5 (50%) respondents experienced a decrease in the nausea category, while 5 (50%) respondents remained in the same category even though the nausea score decreased. The results of the Wilcoxon test showed a p value = 0.025 ($p < 0.05$), which means there was a significant difference between before and after the intervention. The combination of guided imagery therapy and PC6 acupressure showed effectiveness in reducing nausea levels in chemotherapy patients.

Keywords: chemotherapy; CINV; guided imagery; nausea; PC6 acupressure

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INTRODUCTION

Cancer is a leading cause of morbidity and mortality worldwide. Chemotherapy remains the primary treatment for various cancers, both curative and palliative. Chemotherapy often causes disturbing side effects, one of which is chemotherapy-induced nausea and vomiting (CINV). reported to occur in 70–80% of patients receiving chemotherapy with moderate to high emetogenic levels , despite standard antiemetic therapy (Li et al., 2022).

The mechanism of CINV involves complex activation between the central and peripheral nervous systems, primarily through the release of serotonin (5-HT_3) from enterochromaffin cells in the gastrointestinal tract that stimulate the vagus nerve to the chemoreceptor trigger zone (CTZ) in the medulla oblongata (Di Mattei et al., 2024). In addition to causing physical disorders , CINV also has significant psychological impacts, such as anxiety, depression, sleep disorders, and a decrease in the patient's quality of life. (Samami et al., 2022; Correa-Morales et al., 2024). Pharmacological approaches using antiemetics are the primary therapy for CINV management. However, some patients still experience nausea despite adequate antiemetic therapy. Therefore, a complementary approach that is safe, effective, and easy to implement is needed. Guided imagery is a relaxation therapy that uses directed imagination to create positive mental experiences that help reduce stress, anxiety, and the perception of nausea. Guided imagery is one of the mind-body therapy

interventions that has been proven effective in reducing nausea, anxiety, and stress in cancer patients through relaxation mechanisms and modulation of the autonomic nervous system (Correa-Morales et al., 2024) . This technique works by creating positive visualizations that can reduce sympathetic nervous system activity and increase parasympathetic activity, thereby causing a relaxing effect and reducing the perception of nausea (Di Mattei et al., 2024).

Meanwhile , acupressure at the PC6 (Neiguan) point is a complementary therapy that works by stimulating the median nerve to inhibit the transmission of nausea impulses to the vomiting center in the brain. Several studies have shown that acupressure at the PC6 point is effective in reducing the frequency and intensity of nausea and vomiting in chemotherapy patients (Wahyuningsih et al., 2025; Rohmatus Sakdiyah, 2020). Although various non-pharmacological interventions have been recommended to reduce CINV symptoms, the application of a combination of guided imagery and PC6 acupressure in daily nursing practice remains suboptimal. Therefore, evidence-based nursing practice is needed to integrate scientific evidence into the nursing care of chemotherapy patients. The combination of guided imagery and acupressure at the PC6 point is believed to have a synergistic effect because guided imagery works through psychological mechanisms, while acupressure works through physiological mechanisms. Therefore, the implementation of this Evidence-Based Nursing Practice aims to analyze the effectiveness of the combination of guided imagery and acupressure at the PC6 point in reducing nausea in patients undergoing chemotherapy.

METHOD

This implementation is Evidence-Based Nursing Practice (EBNP) in the provision of nursing care, carried out while still adhering to the principles of nursing ethics, including informed consent, patient data confidentiality, beneficence, non-maleficence, autonomy, and justice. EBNP implementation is carried out through five stages: identifying clinical problems, searching for the best scientific evidence, critically reviewing articles, applying evidence in nursing practice, and evaluating implementation results.

The EBNP was implemented in the chemotherapy room at Dr. Mohammad Soewandhie Regional General Hospital in Surabaya. EBNP was implemented on 10 patients undergoing chemotherapy and meeting the inclusion criteria using a pre-post intervention approach without a control group. The implementation was carried out on patients who met the criteria of willingness to undergo chemotherapy. following the EBNP implementation program , diagnosed with cancer and undergoing chemotherapy, follow intervention session until finished and the patient No experience decline awareness. The intervention consisted of 10–15 minutes of guided imagery and 2–3 minutes of acupressure on the PC6 point. Nausea levels were measured before and after the intervention using the INVR (Index of Nausea, Vomiting, and Retching) instrument. Data were analyzed before and after the intervention. Data were analyzed using Wilcoxon signed rank test with a significance level of $\alpha = 0.05$.

RESULT

Respondent Characteristics

Table 1.
Respondent Characteristics (n=10)

Characteristics	f	%
Age 38–49 years	5	50
Age ≥50 years	5	50
Stage I	2	20
Stage II	3	30
Stage III	3	30
Stage IV	2	20
Adjuvant Chemotherapy	4	40
Neoadjuvant Chemotherapy	4	40
Palliative Chemotherapy	2	20

EBNP was implemented in 10 patients aged 38–62 years. The majority of respondents had stage II and III disease and underwent *adjuvant* or *neoadjuvant chemotherapy.* Table 1, the majority of respondents were in the 38–49 and ≥50 age groups, with equal proportions, 5 people each (50%). Based on disease stage, the majority of respondents were in stages II and III, 3 people each (30%). Meanwhile, based on chemotherapy type, the majority of respondents underwent adjuvant and neoadjuvant chemotherapy, 4 people each (40%).

Table 2.
Changes in INVR Scores Before and After Intervention

Respondents	Pre-test	Post-test
1	12	5
2	18	5
3	22	19
4	8	5
5	15	5
6	11	5
7	9	5
8	24	20
9	7	5
10	16	5

The results showed that all respondents experienced a decrease in nausea scores after the intervention. Five (50%) respondents experienced a decrease in their nausea category based on the INVR score classification, while the other five (50%) respondents remained in the same category despite a decrease in their nausea scores. No respondents experienced an increase in nausea levels after the intervention. Analysis using the Wilcoxon test showed a p value = 0.025 ($p<0.05$), so there was a significant difference between the level of nausea before and after the intervention.

DISCUSSION

In the implementation of EBNP, all respondents experienced a decrease in nausea scores after EBNP implementation. Five out of 10 respondents experienced a decrease in nausea category from moderate to mild after receiving a combination of guided imagery and PC6 acupressure interventions. The decrease in nausea levels that occurred in most patients indicates that the combination of interventions is able to provide a relaxation effect as well as physiological stimulation that supports CINV symptom control. These results indicate that the combination intervention has potential as a complementary therapy in controlling CINV symptoms. This is in line with the evidence summary by Li et al. (2022) which shows that PC6 point stimulation is an effective non-pharmacological intervention in reducing CINV symptoms in chemotherapy patients. Meanwhile, in the five (5) respondents who did not experience a change in nausea category, this condition is likely influenced by the higher emetogenic level of the chemotherapy regimen, the patient's psychological condition, previous chemotherapy experience, or variations in individual responses to complementary interventions.

Acupressure at the PC6 point works by stimulating the median nerve, which then affects the nucleus tractus solitarius (NTS) and the area postrema in the medulla oblongata, thereby reducing the activity of the vomiting center in the brain. Furthermore, PC6 stimulation can reduce the release of serotonin (5-HT_3), a key mediator of CINV, and increase the release of endorphins , which have relaxing and antiemetic effects (Wahyuningsih et al., 2025). This is in line with a meta-analysis showing that PC6 stimulation can reduce nausea by up to 50% and vomiting by up to 40% in chemotherapy patients (Li et al., 2022). Other studies have also reported that acupressure is a safe, non-invasive, and effective intervention in controlling CINV symptoms (Zhou & Chen, 2023).

On the other hand, guided imagery works through psychological mechanisms by increasing parasympathetic nervous system activity and decreasing sympathetic nervous system activity. This condition causes a decrease in stress hormones such as cortisol and adrenaline, thereby reducing

anxiety and the perception of nausea (Di Mattei et al., 2024). In addition, guided imagery also acts as a cognitive distraction that helps patients divert attention from the sensation of nausea. This intervention increases the patient's perception of self-control over their body condition, which has been shown to contribute to reducing nausea symptoms (Samami et al., 2022). The results of a systematic review showed that guided imagery is effective in reducing psychological symptoms such as anxiety and stress and has a positive impact on physical symptoms, including nausea, in chemotherapy patients (Correa-Morales et al., 2024).

The combination of guided imagery and acupressure on the PC6 point produces a synergistic effect because it works on two different pathways. Guided imagery helps control the psychological response to discomfort, while acupressure directly influences the physiological pathways involved in nausea and vomiting. This multimodal approach has been shown to be more effective than single interventions because it addresses both physiological and psychological aspects simultaneously. This also aligns with the concept of holistic nursing care, which emphasizes a holistic approach to the patient (Di Mattei et al., 2024).

The findings of this implementation have important implications for nursing practice, particularly in the development of non-pharmacological interventions based on Evidence-Based Nursing (EBN), which emphasizes the use of scientific evidence in nursing practice. Guided imagery and PC6 acupressure are safe, easy-to-perform, and low-cost interventions, thus having the potential for widespread implementation in oncology nursing services. Furthermore, these interventions can increase patient independence in self-managing nausea symptoms, ultimately contributing to improved quality of life for cancer patients. The implementation of EBNP has several limitations. First, the relatively small number of patients involved requires careful interpretation, and the results may not be representative of all characteristics of patients undergoing chemotherapy. Second, the implementation was conducted in only one service unit, so the results may be influenced by patient characteristics and the local care environment. Third, the evaluation was conducted over a limited period, thus not being able to describe the long-term effectiveness of the intervention. Therefore, further research with a larger sample size and a more robust study design is needed to confirm these findings.

CONCLUSION

Guided imagery therapy and PC6 acupressure demonstrated effectiveness in reducing nausea scores in patients undergoing chemotherapy based on the INVR instrument. Implementation results showed a significant difference between nausea scores before and after the intervention ($p = 0.025$).

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