



Effect of Aromatherapy Applied in Palliative Treatment on Management of Nausea and Vomiting Symptoms

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Received: 21-05-2024

Reviewed: 07-06-2024

Accepted: 21-06-2024

Abstract

Despite advances in the diagnosis and treatment of cancer, patients still suffer from the various physical and psychological complications of cancer. Patients in palliative care often experience symptoms such as nausea, vomiting, anxiety, sleep disturbances, and pain. Managing the symptoms experienced by patients is important in improving the patient's quality of life. Effective management of these symptoms can be done by applying complementary therapies. In this regard, papermint aromatherapy can be used as a potential complementary treatment for symptom management in palliative care. This study aimed to determine the impact of papermint aromatherapy applied to patients in palliative care on the management of symptoms of nausea and vomiting. This research uses quasi-experimental research (single group study without a control group). One-Group Pretest Posttest research design is a measurement before and after treatment. The tool used in this research is a scale for assessing symptoms of nausea. The instrument used for variables dependent, namely to measure the intensity of nausea and vomiting felt by the client using the Rhodes Index for Nausea, Vomiting, and Retching (INVR). The nausea and vomiting scale at 0 indicates no nausea and vomiting, scale 1 indicates mild nausea and vomiting moderate, scale 3 indicates severe nausea and vomiting, and scale 4 indicates severe nausea and vomiting. For the independent variable, use the observation sheet. Findings revealed this study showed significant changes in scale scores, indicating the effectiveness of papermint aromatherapy on symptoms of nausea and vomiting commonly encountered in palliative care. The use of aromatherapy with papermint to treat nausea and vomiting has a p value of 0.027%. Based on this research, parents need to receive information about children with good delivery techniques, according to parents' needs, honestly, openly, in more detail about the child's condition and in accordance with procedures.

Keywords: bad news, communication, parents, chronically ill children

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Introduction

Palliative care for children is not easily available or accessible. Families with children in the palliative phase feel that they are not receiving enough support during this time of stress, uncertainty and vulnerability. Children with chronic illnesses have life-limiting or life-threatening conditions, where the focus of care is to improve quality of life. Globally, “Palliative care for children

Child care is active total care for the child's body, mind and soul, and also involves providing support to the family. It begins when a disease is diagnosed, and continues whether a child receives treatment aimed at the disease or not. Health care providers must evaluate and relieve the child's physical, psychological, and social distress. Effective palliative care requires a broad multidisciplinary approach that includes the family and utilizes available community resources; it can be successfully implemented despite limited resources. It can be provided in tertiary care facilities, in public health centers and even in children's homes.” What is done is to achieve the best quality of life for children with life-threatening illnesses (Vallianatos et al., 2021)

Children with palliative care often experience nausea and vomiting. Nausea and vomiting are one of the most common side effects of chemotherapy and are considered by some patients to be the biggest problem worse than pain. Chemotherapy-induced nausea and vomiting (CINV) is reported to cause fluid-electrolyte imbalance, dehydration, weight loss, physiological effects caused by poor absorption of the drug and/or decreased elimination from the kidney. They also have a negative impact on social life, work life, daily activities and psychological well-being. Additionally, nausea and vomiting cause some patients to refuse chemotherapy or discontinue treatment (Efe Ertürk & Taşcı, 2021). Chemotherapy-induced nausea and vomiting (CINV) is one of the most troublesome side effects in patients undergoing chemotherapy. Nausea and vomiting have the potential to affect 60% to 80% of patients if left untreated Nausea and vomiting impact the patient's quality of life (Yan et al., 2023)

Globally in the general population, especially in cancer and palliative care patients. The effectiveness of the treatment is still low; however, patients and relatives often use complementary and integrative therapies. Quality of life has a serious impact on the lives of children with advanced disease with symptoms such as pain, depression, dyspnea, constipation, and nausea and vomiting. Very often, patients seek help in using therapy to relieve these symptoms. Aromatherapy is a therapy that is well received not only by patients with advanced stages of the disease, but also by patients with initial complaints. Aromatherapy is used in many cultures and societies, often alongside conventional medicine. The exact mechanism of therapeutic benefits and the correct dosage of aromatic oils are still unclear. In palliative care, aromatic oils can be used to relieve various symptoms, such as anxiety, shortness of breath, nausea, tension in ascites, pain, cough, nausea, fatigue, and restlessness or simply to improve well-being The highest prevalence of complaints due to chemotherapy in cancer patients is nausea and vomiting, namely 40% - 70% (Eghbali et al., 2018)

According to the World Health Organization, 80% of cancer patients use complementary medicine methods. One of the most widely used complementary therapies is aromatherapy,

which refers to the use of aromatic oils to protect and improve physical and mental health, and this method is preferred in many countries such as Switzerland, Germany, England, Canada and America. State (Egeli & Kartal, 2023)

Peppermint has over 1,000 different chemicals, the most effective of which are menthol (50%), menthone (16%), isomentone (4%), and limonene (3%) [12-14]. Peppermint blocks serotonin and dopamine receptors involved in nausea. After inhalation, peppermint is absorbed through the lungs and nasotracheal mucosa and is rapidly absorbed by the bloodstream and exerts its rapid effects by acting on the limbic system (Ahmadi et al., 2020). Aromatherapy is used and can be used in symptom management in patients receiving palliative care (Uysal & Aykar, 2024)

There has not been much research on the impact of aromatherapy on symptoms of nausea and vomiting in children, especially children undergoing palliative care. Aromatherapy has been shown to improve pediatric patients' response to pain and reduce stress symptoms. Research shows that aromatherapy has a positive impact on symptoms. Aromatherapy can increase blood pressure, pulse rate, pain, anxiety and depression. The aim of this research is to measure the benefits of aromatherapy for nausea and vomiting. Where children report symptoms 5 to 60 minutes after using aromatherapy (Weaver et al., 2019)

Literature Review

Palliative care is a multidisciplinary specialty that has gained importance in recent years and focuses on preventing and reducing the distress of patients and their families who encounter life-threatening diseases. It aims to help patients who need support at all stages of the disease and at the end of life. Palliative care is an approach that aims to eliminate the problems caused by cancer itself or treatment methods, and to increase the quality of life of patients and their relatives (Parrish, 2020)

A study performed by Stallings-Welden et al.³³ measured the effectiveness of aromatherapy against the effectiveness of standard antiemetic treatment for PONV, and post discharge nausea and vomiting (PDNV). They used an aromatherapy blend called QueasEASE™, a commercially available blend of peppermint, spearmint, ginger, and lavender oils placed in an inhaler for ease of use, as the aromatherapy treatment. (Parrish, 2020)

Research Method

Design

This research was conducted in a halfway house unit in Padang City. This research was carried out in stages: quantitative stage. The quantitative phase of the study was realized as a quasi-randomized controlled study exploring the effects of peppermint oil on the incidence of nausea, vomiting, vomiting, and severity of nausea after chemotherapy. Before starting the research, papermint aroma therapy was given to several children to find out whether the oil

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had side effects or not. After this practice it was observed that peppermint oil has no side effects. These patients were not included in the study sample size. This study was conducted from September 2023 to March 2024, a total of 30 cancer patients undergoing chemotherapy were screened, and met all inclusion criteria. The inclusion criteria for selecting participants are as follows: 1) Vulnerable children aged 6-12 years 2) Children who are able to be taught to communicate well 3) Children diagnosed with cancer 4) Children experiencing the effects of nausea and vomiting after chemotherapy 3) Children who are at the Cahaya Kota Padang Community Foundation while undergoing chemotherapy 4) Children who are willing to be respondents 5) suffer from stage III cancer, 6) do not show mental disorders and agree to participate in the research. Study exclusion criteria: (a) have an allergy to peppermint or its carrier oil, (b) have a history of respiratory diseases such as asthma and chronic obstructive pulmonary disease, (c) have a history of diseases that cause vomiting such as liver and kidney disease. *Visual Analog Scale for Severity of Nausea*,

The Visual Analog Scale for Severity of Nausea was used to select patients for study and determine treatment efficacy. The VAS consists of a line 10 cm to the left of “No nausea 0. This form is prepared to record the patient's peppermint oil application status (for 5 days) and any problems that may occur during the application process. *Nausea, Vomiting, and Vomiting Index*, The Nausea, Vomiting and Vomiting Index (INRV) was developed by V. Rhodes and R. Mc Daniel to determine patients' frequency of nausea, vomiting, vomiting after chemotherapy, and the distress they experience due to these symptoms. This index consists of eight questions. The index provides a numerical value from 0 (least amount of distress) to 4 (greatest amount of distress) .The samples in this study were taken in the field where the data was collected. This research involved 30 people. The main aim of this research was to look at the impact of papaermint on children's nausea and vomiting. This research was reviewed and approved by the Ethics Committee of Fort De Kock University, Bukittinggi, Indonesia, No 148/KEPK/V/2023.

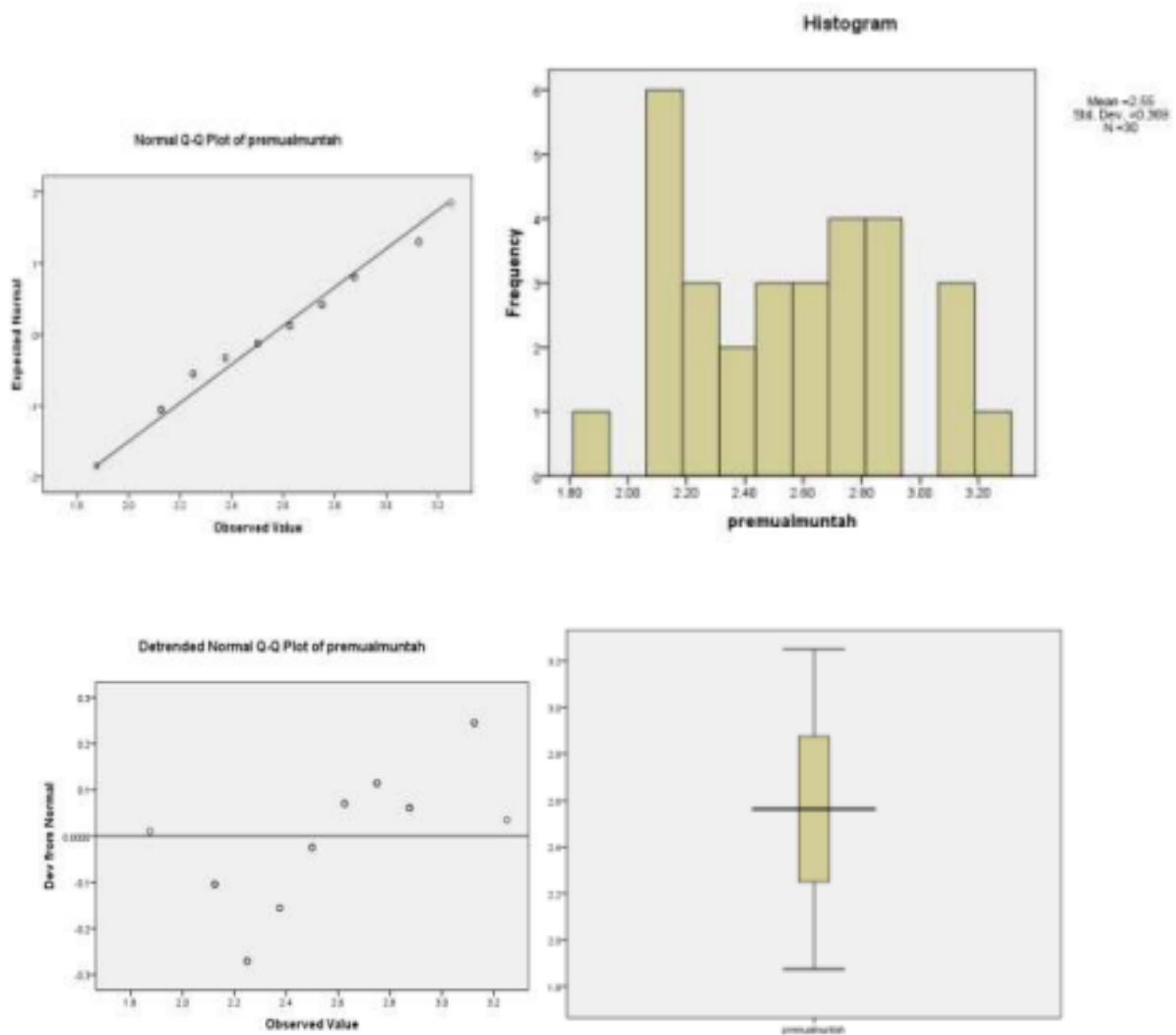
This research was presented before the Indonesian University Ethics Committee team. Written consent was requested from all participants involved in this study. The researcher submits the ethics first, after the ethics are approved the researcher submits a letter and also makes an initial presentation regarding the research plan. Continue by meeting the owner of the halfway house. Asking for the respondent's approval by providing an informed consent sheet. If the prospective respondent is willing to become a respondent, then the prospective respondent is asked to sign a consent form to become a respondent. Provides a guide to peppermint aromatherapy techniques. The method is to encourage respondents to relax and breathe normally 56 for 10 minutes in a room where there is no noise so that respondents can focus. This therapy is carried out 3 times a day and given at agreed times. **intervention** After the patient gives his consent, if nausea and vomiting occur, two drops of papermint oil applied to the cotton provided are given to the patient to use as needed. Participants in the intervention group applied one drop of the aromatic mixture to the point between the upper lip and nose, three times a day for five days after administration of chemotherapy.

The efficacy of papermint was evaluated after 10 minutes to 60 minutes (yes/no). Primary outcome measures were VAS-severity of nausea and the Nausea, Vomiting, and

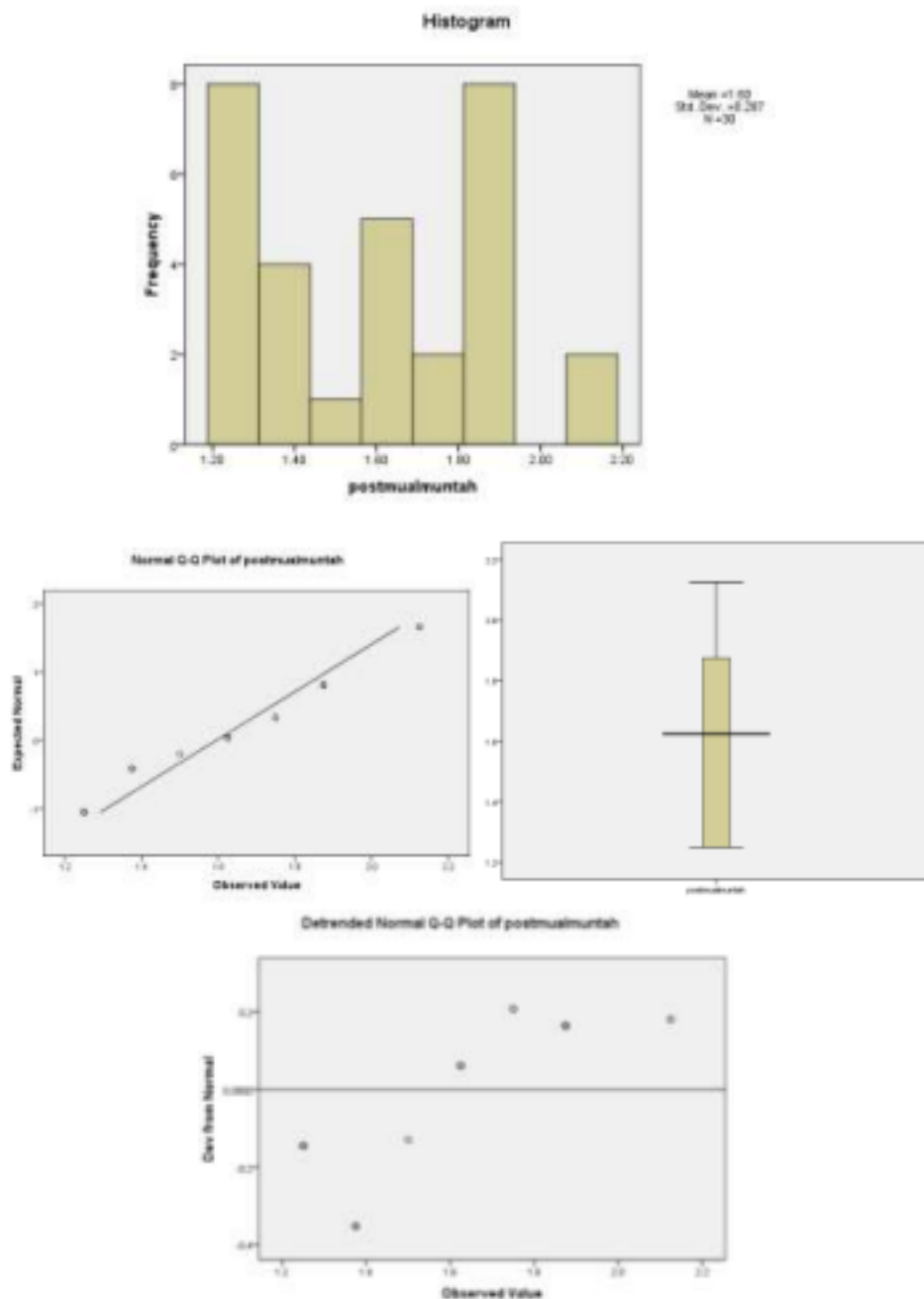
Vomiting Index. In this study, to determine the sample size when patients were allocated to the research group, bivariate data analysis in this study was carried out to see the effect of peppermint aromatherapy on nausea and vomiting in children with cancer undergoing chemotherapy at the Cahaya Kota Padang Community Foundation in 2023 by looking at the differences in values in the intervention group before and after therapy was then computerized to an interval scale, and processed using the dependent T test, namely the p value $\leq \alpha$.

Result/Findings

All patients gave their consent to the aroma treatment treatment against nausea and vomiting. All the uses of papermint for treating nausea and vomiting have been documented. A total of 30 patients received papermint oil to treat nausea and vomiting and were included in the analysis (Figure 1).



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We evaluated whether there was a relationship between the use of peppermint and its efficacy against nausea and vomiting after 10 minutes (yes/no). Of the 30 patients, the mean value was 2.55 and the value mean after 1.60 where peppermint is effective against nausea and vomiting. Aromatherapy oils have an effect on the psychology and cellular level which can provide a relaxing effect. The calming effect will reduce individual anxiety, which will also reduce the risk of nausea and vomiting. To increase its benefits, it can be combined with peppermint oil, which is very good for body health. The menthol content in peppermint oil aromatherapy helps reduce nausea and vomiting. The patient's already experienced taste changes and reduced oral intake due to affected olfactory receptors may be made worse with the addition of nausea and vomiting.

Discussion

Complementary therapy used to treat nausea and vomiting is aromatherapy. Inhaling aromatherapy can stimulate the smell of the limbic system and central nervous system, peppermint aromatherapy can cause calm and can cause relaxation (Efe Ertürk & Taşçı, 2021). The use of odors from essential oils also affects serotonin, which causes a person to be relaxed and comfortable (Kasiati, 2017). Aromatherapy oil can be used in several ways, namely inhaling it, adding it to water for bathing or by evaporating it, using it as a compress. Peppermint oil is also effective in the delayed phase. The research on peppermint oil has been used on 30 patients receiving palliative care to stem the tide of nausea and vomiting. The results of this study showed that peppermint oil helped relieve nausea in the patients involved in this study.

various structures involved in the vomiting pathway in the brain. Another mechanism that can cause nausea is the introduction of toxic chemicals into the gastrointestinal (GI) tract. These substances trigger enterochromaffin cells, located within the walls of the digestive tract, to release a substance called serotonin.¹⁴ Serotonin is released into vagal and sympathetic afferent nerve endings that travel to the NTS in the medulla, thereby initiating the gag reflex (Weaver et al., 2019)

Vomiting is also recognized in the usual conventional care. Nausea is a response with a dynamic threshold that depends on the interaction of individual innate factors and psychological factors. On the other hand, vomiting is a yes or no event that occurs when

stimulated exceeds threshold and is easier to control as long as the neural signature is present. So nausea is more difficult to overcome than vomiting. In addition, researchers measure nausea less frequently than vomiting

Ghballi et al. (22) conducted a randomized controlled clinical study to determine the effect of aromatherapy containing peppermint essential oil on nausea and vomiting in the acute phase (first 24 hours) of chemotherapy in 100 cancer patients. Patients with a confirmed diagnosis of breast cancer and receiving chemotherapy with drugs (cyclophosphamide and adriamycin) that cause moderate to severe nausea were included in the study and patients were randomly divided into intervention (n=50) and control (n=50) groups. In addition to the standard medication given by the doctor, patients in the intervention group were asked to pour two drops of 100% medical peppermint essential oil on tissue paper 3 times a day (morning, afternoon and evening), drop it on their collar and breathe normally for 20 minutes. In contrast, patients in the control group used the saline solution in the same way instead of inhaling peppermint oil for the specified time. The results of the study reported that the frequency of nausea and vomiting decreased in 76% of patients in the aromatherapy group, and there was a significant difference between the intervention and control groups. Based on this research, it is stated that the use of aromatherapy with the recommended dosage of peppermint essential oil does not cause any side effects and can be used as a therapeutic method along with medical treatment to reduce nausea. Aromatherapy has been used as a safe method for managing the symptoms of cancer patients (Dilek & Necmiye, 2020)

Peta et al. (18) conducted a study with the participation of 79 patients and evaluated the

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effectiveness of peppermint essential oil on the intensity of nausea in cancer patients. The results of this study indicate that the use of peppermint oil is effective in reducing the intensity of nausea experienced by patients compared to the control group. Although the sample size was low, in another study using peppermint oil to combat nausea in palliative care and hospice care, it was reported that the use of peppermint oil along with medical treatment reduced the frequency of nausea (Dilek & Necmiye, 2020). The use of aromatherapy is consistent with evidence that supports symptoms and makes the environment as comfortable as possible. No respondents stated that this drug was used to treat cancer or as an alternative to palliative care (Maddocks & Reid, 2020). Aromatherapy is also offered in the integrative program in the United States and Germany because, like massage, aromatherapy has been shown to reduce the effects of chemotherapy and is safe. According to participants, it is more often used to relieve nausea, vomiting, sleep, and anxiety (Mora et al., 2023)

Conclusion

Peppermint oil significantly reduces the frequency of nausea, vomiting, vomiting and the severity of nausea in cancer patients undergoing chemotherapy. Therefore, the use of peppermint oil along with antiemetics

Declaration of conflicting interest

The authors declare that there is no conflict of interest in this work.

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