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Effectiveness Of Applying Asitri (Ginger Oil) Essential Aromatherapy To Reduce Nausea And Vomiting Symptoms In Post-Open Appendictomy Patients In The Teluk Jambe Karawang Regency General Hospital

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ABSTRACT
Background: Surgery is an invasive procedure performed to treat disease, injury, or deformity. It is generally performed through incisions that can cause physiological changes in the body and affect other organs. Objective: To analyze the effectiveness of applying Asitri (Ginger Oil) Essential Aromatherapy to reduce nausea and vomiting in post-op patients in the Teluk Jambe ward, Karawang Regional General Hospital. Research Method: This study is a quantitative quasi-experimental study using the Paired T-Test. The nausea and vomiting measurement instrument used the RINVR (Rhodes Index of Nausea, Vomiting, and Retching) scale. The number of respondents was 18 people, consisting of 9 patients in the treatment group (given Asitri Essential Aromatherapy) and 9 patients in the control group (not given any intervention). Results: The results of the Paired Sample T-Test in the treatment group showed a p-value of 0.000 ($p < 0.05$), meaning there was a significant difference between nausea and vomiting scores before and after being given Asitri essential oil aromatherapy. Conclusion: Asitri Essential Aromatherapy is effective in reducing the effects of nausea and vomiting in post-operative patients.

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1. INTRODUCTION

Post surgery is the period after surgery is carried out which begins when the patient is transferred to the recovery room until further evaluation (Uliyah & Hidayat, 2013 in Utami & Khoiriyah, 2020). Surgery or surgery is any procedure that uses invasive methods to diagnose, treat diseases, injuries or deformities of the body. Generally, it is done by making incisions that can cause physiological changes in the body and affect other organs of the body (Krismanto & Jenie, 2021).

Based on data obtained from the World Health Organization (WHO), the number of patients with surgery has increased significantly from year to year. It was recorded that in 2017 there were 140 million patients in all hospitals in the world, while in 2019 the data increased by 148 million people (Krismanto & Jenie, 2021). Among them is Laparatomy surgery, with the prevalence of postoperative patients with laparotomy, reaching 98 million incidents in 2018 (Ramadhania, 2022). According to the Ministry of Health of the Republic of Indonesia (Depkes RI) in 2019, surgery was the 11th out of 50 diseases in Indonesian hospitals with a percentage of 12.8% or 1.2 million people, and it is estimated that 32% or 384,000 of them were laparotomy surgery cases (Ramadhania, 2022). Surgery in West Java Province in 2017 amounted to 3,884 cases, (Ministry of Health of the Republic of Indonesia, 2017). The number of lymphophymy cases in 2014 in several hospitals in West Java province, namely Doctor Hasan Sadikin Hospital Bandung, was 220 cases (Wati,

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2020). From research conducted by Ningrum at the Bandung City Hospital, 36 patients underwent colon surgery from January 2014 to December 2014 (Abdillah, Lukitto, & Nurrokhmawati, 2016).

Based on data obtained at Karawang Hospital, one of the regional general hospitals in Karawang on April 21, 2026, the number of patients with surgical cases at Karawang Hospital in 2024 was 2966 patients, as many as 1466 including Special Surgery, 750 major surgeries, 563 moderate surgeries, and as many as 187 minor surgeries.

Based on the Triana Arisdiani Journal entitled "The effect of non-pharmacological nursing interventions of ginger aromatherapy on the nausea and vomiting of postoperative patients" showed that the results of the study obtained a value of p = 0.010 which showed that there was a significant/significant difference in the score of nausea and vomiting between the control group and the intervention, the results showed that ginger aromatherapy had an effect in reducing the nausea and vomiting score in postoperative patients.

Referring to the 2022 Marta tania journal, entitled "Factors that affect the incidence of nausea and vomiting after surgery", the results of the analysis showed that there were 56.7% of respondents experiencing mild nausea and vomiting and 43.3% experienced moderate nausea, 66.7% of respondents were over 50 years old, 66.7% were male, 87.6% had no history of nausea and vomiting and 56.7% had a history of smoking. The conclusion is that gender has a significant correlation with the incidence of nausea and vomiting after surgery.

The results of the study published in the research journal Ayu Retno in 2018 entitled "The Effect of Ginger Aromatherapy on Postoperative Nausea in Postoperative Patients with General Anesthesia" The research method used was a quasi-experiment with *a non-equivalent control group design*, the number of samples of 16 people analyzed the data used was univariate analysis and bivariate analysis using the t-independent test, the results of this study were obtained p <0.05 which is p=0.003, this means that there is a difference in postoperative nausea and vomiting scores in the control and intervention groups with a mean difference of 0.88. Although these studies show a positive effect of ginger oil aromatherapy therapy on nausea and vomiting, special studies examining the effect of ginger oil aromatherapy on nausea and vomiting in postoperative patients are still limited. Therefore, further research is needed to explore the influence of ginger oil aromatherapy in influencing nausea and vomiting in postoperative patients, which may contribute to the development of more comprehensive and holistic therapeutic protocols.

2. RESEARCH METHODOLOGY

The research design is a model or method used by the researcher to conduct a study that provides a way for the conduct of the research "The Effectiveness of the Application of Aromatherapy *Essential Astri (Ginger Oil*) to Reduce Symptoms of Nausea and Vomiting in Post op Patients in the Jambe Bay Room of the Karawang Regional General Hospital". This study is a quantitative research on *a quasi-experimental method* using the Paired T-Test. The research subject is an object or individual that is researched by the researcher through observation, reading or conducting questions and answers related to certain research problems. (Mochamad nashrullah et al., 2023). In this study, the researcher took 16 post-operative patient clients in the Teluk Jambe room of Karawang Hospital as research subjects in accordance with the desired criteria in accordance with the research objectives with inclusion and exclusion criteria set for the research subjects, namely:

Inclusion criteria: Postoperative appendectomy patients within the first 24 hours after surgery. Patients aged 15-60 years, both male and female. Patients who experience nausea and/or vomiting after surgery (based on a scale of nausea or subjective complaints). Patients who are conscious and cooperative to participate in the aromatherapy intervention. Patients who are willing to participate in the study by signing informed consent. Patients who are not using antiemetics routinely in the last 2 hours before the intervention.

Exclusion criteria: Patients with a history of allergy to ginger or ginger oil-based products. Patients with postoperative complications such as bleeding, surgical wound infections, or impaired consciousness. Patients with olfactory impairment or acute respiratory tract disease (e.g. severe sinusitis, severe allergic rhinitis). Patients with a history of severe gastric disorders (e.g. active peptic ulcer or severe GERD). Patients who are on long-term intravenous antiemetic therapy or other antiemetic combinations. Patients who refuse or are unwilling to undergo aromatherapy procedures.

2. RESULT AND DISCUSSION

Results

Place/Location and Time of the Research

The location of this research was carried out in the bay room of Karawang Hospital from May – June 2026.

The study focused on patients 6 hours after appendictomy surgery who experienced Post Operative Nausea and Vomiting (PONV). The researcher provided aromatherapy intervention with Astry essential oil and took measurements using RINVR (Rhodes Index of Nausea, Vomiting, and Retching). The number of respondents was 18 people, consisting

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of 9 patients in the treatment group (given Aromatherapy Essential Astry) and 9 patients in the control group (not given intervention).

Characteristics of Respondents by Gender and Age

Table 1 Distribution of Respondent Characteristics

Features	Treatment (n=9)	Control (n=9)	Total (n=18)
Gender			
Male	5 (55,6%)	4 (44,4%)	9 (50%)
Women	4 (44,4%)	5 (55,6%)	9 (50%)
Age (years)			
17–25	3 (33,3%)	2 (22,2%)	5 (27,8%)
26–35	4 (44,4%)	5 (55,6%)	9 (50%)
36–45	2 (22,2%)	2 (22,2%)	4 (22,2%)

Based on table 1, it can be seen that of the 18 respondents in the Teluk Jambe Room of Karawang Hospital, most of the respondents were 26–35 years old, with a balanced gender distribution. This shows characteristics

Univariate Analysis

Descriptive analysis of RINVR scores before and after the application of Aromatherapy Essential Acidity (Ginger Oil) in the Treatment group.

Table 2 Paired Statistical Samples (Treatment Groups)

	Mean	N	Std. Deviation	Std. Error Mean
RINVR_Pretest	18.33	9	1.73	0.58
RINVR_Posttest	8.22	9	1.64	0.55

Table 3 Paired Sample Correlations (Treatment Group)

Pair	N	Correlation	Say.
Pretest & Posttest	9	0.623	0.047

Table 4 Paired Sample Test (Treatment Group)

Pair	Mean Difference	Std. Deviation	t	df	Sig. (2-tailed)
Pretest – Posttest	10.111	1.364	22.418	8	**0.000**

From the table 4 There was a significant difference between before and after the administration of Ascitric aromatherapy in the treatment group ($p = 0.000$).

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Bivariate Analysis

Differences in RINVR Scores in the treatment group before and after the application of Aromatherapy Essential Alasty (Ginger Oil)

Table 5 Paired Sample t-Test Results (In Groups)

Groups	Mean Pretest	Mean Posttest	Mean Difference	t	df	Sig. (2-tailed)
Treatment	18.33	8.22	10.111	22.418	8	0.000
Control	18.78	17.78	1.000	1.000	8	0.341

Table 5 shows that in the treatment group there was a significant decrease in scores where the results (p = 0.000) while in the control group there was no significant result (p = 0.341). This shows that Aromatherapy Astri is effective in reducing nausea and vomiting. It is evident that in the treatment group, there is a significant difference between the score before and after aromatherapy (p = 0.000). while in the control group, there is no significant difference (p = 0.341). That is, Aromatherapy

Essential Asistri (Ginger Oil) is effective in lowering RINVR scores in postoperative appendictomy patients. Differences in RINVR Scores in the Control group without the application of Aromatherapy Essential Acidity (Ginger Oil)

Table 6 Paired Statistical Samples (Control Group)

	Mean	N	Std. Deviation	Std. Error Mean
RINVR_Pretest	18.78	9	1.64	0.55
RINVR_Posttest	17.78	9	1.30	0.43

Table 7 Paired Sample Test (Control Group)

Pair	Mean Difference	Std. Deviation	t	df	Sig. (2-tailed)
Pretest – Posttest	1.000	1.000	1.000	8	**0.341**

Table 7 shows that there was no significant difference in the control group (*p = 0.341*).

Independent Sample T-Test Results

Table 7 Test Results for Independent T-Test (Intergroup)

Groups	N	Mean (Penurunan_Skor)	Std. Deviation	Std. Error Mean
Treatment	9	10.11	0.78	0.26
Control	9	1.00	0.00	0.00

The results showed *a p value = 0.000* (< 0.05), which means that there was a significant difference in the decrease in RINVR scores between the treatment and control groups. Thus, the administration of Astri aromatherapy was shown to be statistically and clinically effective in reducing nausea and vomiting in postoperative patients.

Tabel 8 Independent Samples Test

	Levene's Test for Equality of Variances	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
F = 2.163	Sig = 0.159	33.452	16	**0.000**	9.111	0.272	8.526– 9.696

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Table 8 shows the results There was a significant difference between the treatment and control groups (*p = 0.000*). This means that Aromatherapy *Essential Alasty* was effective in lowering nausea and vomiting score (RINVR) in Postoperative Apendictomy patients. Independent t-test between groups: significant (*p = 0.000*). Aromatherapy Essential Athisri was shown to be effective in reducing nausea and vomiting (RINVR) after 6-hour appendectomy surgery.

RINVR Score Before and After Patient Post Appendectomy Surgery 6 hours

Table 9 Post Op Appendictomy Patient RINVR Score 6 hours

Groups	N	Mean Pretest	Std. Dev.	Mean Posttest	Std. Dev.	Differences
Treatment	9	18.33	1.73	8.22	1.64	10.11
Controls	9	18.78	1.64	17.78	1.30	1.00

Before the intervention, the average RINVR scores of the two groups were almost the same, which was about 18, indicating moderate-severe levels of nausea and vomiting. After 6 hours, the treatment group experienced an average decrease in score of 10.11 points, while the control group decreased by only 1 point**.**

Discussion

Univariate Analysis

The results of the RINVR score in the treatment group before and after the application of Aromateraphy Essential Astri (Ginger Oil). The results showed a significant decrease in the RINVR score in the treatment group after being given Aromatherapy Astri (*p = 0.000*). This is in line with the theory that aromatherapy works through the olfactory system, which stimulates the limbic system and hypothalamus**,** thereby affecting emotions, relaxation, and the body's response to nausea and vomiting. The active content of limonene, sitral, and linalool in *Asitri essential oil* has a calming effect, decreases sympathetic nerve activity, and reduces the stimulation of the vomiting center in the medulla oblongata. Thus, Astri aromatherapy helps postoperative patients feel more comfortable and reduce the intensity of nausea. Based on the results of the study, Astri aromatherapy can be applied as a non-pharmacological intervention to reduce postoperative nausea and vomiting. Nurses can integrate aromatherapy into postoperative nursing care plans, especially in meeting the patient's comfort needs. Provide education to patients and families about the benefits of aromatherapy as a complement to medical therapy. Supervise patients' responses to aromatherapy, including tolerance and comfort.

Bivariate analysis

Differences in RINVR scores in the treatment group before and after the application of Aromateraphy Essential Asitry (Ginger Oil) The results of the Paired Sample T-Test in the treatment group showed a value of p = 0.000 (p < 0.05), which means that there was a significant difference between the score of nausea and vomiting before and after the administration of Aromatherapy essential oil Asitri. This shows that the administration of aromatherapy significantly reduced the rate of nausea and vomiting in postoperative appendictomy patients. In contrast, in the control group, a value of p = 0.341 (p > 0.05) was obtained, which means that there was no significant difference between the score before and after observation without the administration of aromatherapy. Thus, it can be concluded that the decrease in scores in the control group occurred naturally and not due to intervention. Furthermore, the results of the Independent Sample T-Test between the treatment group and the control group at the posttest value showed p = 0.000 (p < 0.05). This result proves that there is a significant difference between the two groups after treatment. Thus, aromatherapy essential oil Asitry has been shown to be effective in reducing the level of nausea and vomiting in postoperative appendictomy patients. The results showed a value *of p = 0.000* (< 0.05), which means that there was a significant difference in the reduction in RINVR score between the treatment groups before and after the application of Aromtheraphy Essential Asitri. Thus, the administration of Astri aromatherapy has been shown to be statistically and clinically effective in reducing nausea and vomiting in postoperative patients. In line with the research conducted by Marta Tania 2022, entitled "Factors that affect the incidence of nausea and vomiting postoperatively", the results of the analysis showed that there were 56.7% of respondents experiencing mild nausea and vomiting and 43.3% experienced moderate nausea, 66.7% of respondents were over 50 years old, 66.7% were male, 87.6% had no history of nausea and vomiting and 56.7% had a history of smoking. The conclusion is that gender has a significant correlation with the incidence of nausea and vomiting after surgery. The results of the study published in the research journal Ayu Retno in 2018 entitled "The Effect of Ginger Aromatherapy on Nausea and Vomiting in Postoperative Patients with General Anesthesia" the research method used was a quasi-experiment with *a non-equivalent control group design*, the number of samples of 16 people the data analysis used was univariate analysis and bivariate analysis using the t-independent test, the results of this study were obtained p <0.05,

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which is p = 0.003, this means that there is a difference in postoperative nausea and vomiting scores in the control and intervention groups with a mean difference of 0.88.

The difference in RINVR score in the control group that did not apply Aromateraphy Essential Asistri (Ginge Oil). In the control group, there were no significant results (*p = 0.341*). This shows that Aromatherapy Astri is effective in reducing nausea and vomiting. It is evident in the treatment group, there is a significant difference between the score before and after aromatherapy (*p = 0.000*). while in the control group, there is no significant difference (*p = 0.341*). because in the control group, patients are not given the application of *Aromateraphy Essential Asistri (Ginger Oil)*

4. CONCLUSION

Aromatherapy Essential Astri (Ginger Oil) has been shown to reduce the effects of nausea and vomiting in Postoperative Appendicitis patients. The results showed a significant decrease in the RINVR score in the treatment group after being given Astri aromatherapy (*p = 0.000*). This is in line with the theory that aromatherapy works through the olfactory system, which stimulates the limbic and hypothalamus systems**,** thereby affecting emotions, relaxation, and the body's response to nausea and vomiting. The active content of limonene, citral, and linalool in *Asitri essential oil* has a calming effect, decreases sympathetic nerve activity, and reduces the stimulation of the vomiting center in the medulla oblongata.

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