

LITERATURE REVIEW: THE EFFECT OF LEMON AROMATHERAPY ON EMESIS GRAVIDARUM

Rini Sulistyowati, Rr Catur Leni Wulandari

Sultan Agung Islamic University

E-mail: rinisulis168@gmail.com, caturleny@unissula.ac.id

ARTICLE INFO

ABSTRACT

Received:

August, 26th 2021

Revised:

September, 12nd 2021

Approved:

September, 14th 2021

Nausea and vomiting (Emesis Gravidarum) often occurs in 1st trimester pregnant women. The cause is due to an increase in the hormones estrogen and HCG in early pregnancy. One of the effects is dehydration which causes the fetus to experience problems, therefore therapy is needed one of the therapies to deal with is the aroma therapy of lemon. International literature searched by electronic means with key words (emesis, lemon therapy, aromatherapy). 8 selection articles on the effect of lemon aromatherapy on emesis gravidarum. Result of this study is there were differences in emesis gravidarum in aromatherapy with the same treatment. One of the treatments for emesis gravidarum is a non-pharmacological method, namely lemon aromatherapy. Aromatherapy lemon therapy contains 66-80% limonene, geranyl acetate, nerol, linalyl acetate, 0.4-15% pinene, 1-4% pinene, 6-14% terpinene and myrcen. Chemical compounds such as geranyl acetate, nerol are useful for antidepressants, antiseptics, anti spasmodics to relieve feelings of anxiety, stress, and fatigue. Conclusion of this research that the use of lemon aromatherapy is effective in reducing the occurrence of emesis gravidarum.

KEYWORDS

Emesis, Lemon Therapy, Aromatherapy



This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International

Rini Sulistyowati, Rr Catur Leni Wulandari (2021) Literature Review: The Effect of Lemon Aromatherapy on Emesis Gravidarum. Journal Eduvest. 1(9): 931-942

How to cite:

E-ISSN: 2775-3727

Published by: <https://greenpublisher.co.id/>

INTRODUCTION

Emesis Gravidarum often occurs in pregnant women in the 1st trimester. The cause is an increase in the hormones estrogen and HCG in early pregnancy (Mariza & Ayuningtias, 2019). One of the effects is dehydration that causes the fetus to experience problems, therefore therapy is needed. One of the therapies to deal with is with the aroma of lemon therapy (Oktaviani, 2020).

The results of the report showed that almost 50-90% of pregnant women vomiting nausea occurs in the first trimester. This condition will improve at the gestational age of 12 - 16 weeks. This condition occurs in about 60 - 80% of primigravida and 40 - 60% occurs in multigravida (Putri, 2020). A prospective study of 160 women found that 74% reported nausea although only 1.8% experienced it as a symptom that only occurred in the morning (Chahyani Agustia, 2019). In 80% of sufferers, nausea can last throughout the day (Dewi, 2012), 51.4% of women experience nausea and 9.2% of women experience vomiting (Kundarti, Rahayu, & Utami, 2017).

Nausea vomiting in pregnancy has a significant impact on the body where the mother becomes very weak, the face is pale and the frequency of urination decreases drastically so that body fluids are reduced and blood becomes thick (hemoconcentration) (Vitrianingsih & Khadijah, 2019). This condition can slow down blood circulation so that oxygen and food supply to the tissues is also reduced this can cause tissue damage that endangers the health of the mother and fetus (Astuti & Ertiana, 2018). The principles of emesis gravidarum management include prevention, reducing vomiting nausea, and correction of fluid and electrolyte needs (Logo, 2020). Treatment of vomiting nausea can be done by pharmacological or non-pharmacological means. Pharmacological treatment is done by taking drugs such as anti-metik drugs or vitamin B6, but these drugs have side effects that may be experienced by pregnant women such as; headache, diarrhea and drowsiness. Other management that can be given is non-pharmacological or complementary therapies that have cheaper advantages and do not have pharmacological side effects, one of the therapies that are safe and can be given to pregnant women who experience nausea vomiting by providing lemon aromatherapy.

Lemon aromatherapy is an essential oil produced from orange peel extract (CitrusLemon) that is often used in aromatherapy (Silvia, 2018). Lemon aromatherapy is a type of aromatherapy that is safe for pregnancy and childbirth (Martin et al., 2013). Lemon aromatherapy contains content that can kill meningococcus bacteria, typhoid bacteria, has a fungal effect and is effective to neutralize unpleasant odors, as well as produce anti-anxiety, anti-depressant, anti-stress, and to lift and focus the mind (Saridewi, Bahar, & Anisah, 2018). Lemon essential oil is the most widely used herbal oil and is considered a good medicine in pregnancy. Lemon aromatherapy has been shown to have beneficial effects on gravidarum emesis. Average score of emesis gravidarum decreases over four days using lemon aromatherapy I (Kia, 2013). It is also in line with research conducted by Erick et al by observing the use of non-pharmacological treatments in women to eliminate emesis gravidarum (Cahyanto et al., 2020). The results showed that 40% of women use lemon aroma to relieve nausea vomiting, and more than half of those who have used it say it is effective (al Cidadapi, 2016).

RESEARCH METHOD

In this research method, journal searches were carried out through Google Scholar, PubMed, BioMed Central, NEJM. The purpose of this Literature Review is to solve the problem regarding Emesis Gravidarum through the administration of Lemon

Aromatherapy. The keyword used in this problem is “giving lemon aromatherapy to the incidence of emesis gravidarum”. The method used in searching this article is to use the relevant English and Indonesian languages. The articles obtained are reviewed to select articles that meet the criteria. And the articles obtained amounted to 8 articles of which 5 international journals and 3 national articles, will then be reviewed.

A journal article conducted by Umu Fauzah entitled "The Effect of Giving Lemon Inhalation Aromatherapy to Emesis Gravidarum in First Trimester Pregnant Women at the Umbulharjo I Health Center Yogyakarta City" uses a method using a Quasi Experiment type of research with the research design used is a pretest-posttest research design with a control group (pretest posttest with control group). This design model uses a comparison group (control). In this study, measurements were made in both groups before and after being given the intervention/treatment, then a comparison was made before and after the intervention was given. The population in this study amounted to 30 pregnant women who experienced emesis gravidarum with 15 control groups and 15 experimental groups. This study uses non-random sampling or also known as non-probability sampling, namely the Accidental Sampling technique, where the sampling is based on chance, that is, anyone who coincidentally / incidentally meets the researcher can be used as a sample. In this study, the sample set was 30 people. Fifteen respondents as the experimental group and 15 respondents as the control group. The data collection tool used is a data collection sheet in the form of a questionnaire consisting of name, age, gravida, gestational age, perceived complaints, diagnosis, therapy is given, nausea and vomiting score. The data analysis used was a paired sample t-test parametric statistical test with a significance limit of p-value <0.05 and an independent sample t-test parametric statistical test with a p-value significance limit > 0.05 .

The journal article conducted by Fitrianiingsih and Siti Khatijah 2019 entitled "Effectiveness of Lemon Aromatherapy for Treating Emesis Gravidarum" using the research design method used, namely Quasi experiment with one group pre-post test design. The research was conducted in April 2019 in the Berbah District of Sleman Yogyakarta. The research population is pregnant women who experience emesis gravidarum. The number of samples as many as 20 pregnant women were taken by purposive sampling technique. Inclusion criteria in sampling are pregnant women in the first trimester, pregnant women who experience nausea and vomiting, mothers who are not allergic to Lemon essential oil and do not have diseases related to the gastrointestinal tract. The exclusion criteria for this study were mothers who used other interventions to reduce nausea and vomiting and mothers who did not use aromatherapy within 12 hours/fall. The material needed in the research is Lemon essential oil. The concentration of lemon aromatherapy given is 10%, the concentration of lemon aromatherapy is based on the research of Kaviani et al. (2014).

The data collection method begins by asking a questionnaire to measure the degree of nausea and vomiting before being given treatment and filling in the respondents' answers on the questionnaire sheet. The measuring instrument in this study is the RHODES Index based on the scores obtained on the respondents' answers about the incidence of nausea and vomiting experienced. Furthermore, the researchers gave lemon aromatherapy to pregnant women to try to smell and explain how to intervene, namely by inhaling a cotton swab that had been given lemon essential oil when experiencing nausea and or vomiting for 5 minutes with a distance of about 2 cm from the nose, after 48 hours then continued with asked again the degree of nausea and vomiting after the intervention. Data were analyzed using Paired t-test.

The results of Lacasse's research (2014, in Tiran, 2014) in Canada from 367 pregnant women, 78, 47% of nausea and vomiting occurred in the first trimester with the

Rini Sulistyowati, Rr Catur Leni Wulandari

degree of nausea and vomiting that was 52.2% mild nausea and vomiting, 45.3 moderate and 2.5%

heavy. In the second trimester, 40.1% of women still had nausea and vomiting with details of 63.3% and 0.8% severe nausea and vomiting. In accordance with evidence-based practice. Midwives are the health workers who provide obstetric services, one of which is by providing examination services for pregnant women to determine the condition of the mother and fetus. In carrying out Antenatal Care (ANC) services, they should always provide explanations and motivations regarding how pregnant women feel, including nausea and vomiting

Researcher's journal article This study was carried out by Siti Cholifah and Titin Eka Nuriyanah entitled "Lemon Aromatherapy Reduces Nausea and Vomiting in First Trimester Pregnant Women". nausea and vomiting, sampling with consecutive sampling were 36 mothers in 2 BPM in Sidoarjo Regency who met the inclusion criteria willing to be studied, normal pregnancy <12 weeks of gestation and exclusion criteria for grande multigravida. From December 16, 2017 to January 16, 2018. Nausea and vomiting were measured before and after giving lemon aromatherapy with the Rhodes Index. The concentration of lemon aromatherapy was given by mixing 0.1 ml of lemon essential oil into 1 ml of water, the concentration of lemon aromatherapy was based on the research of Kaviani et al. (2014) then the mother inhales lemon aromatherapy placed in a cotton swab at a distance of approximately 2 cm from the nose while breathing deeply for + 5 minutes and can be repeated if she still feels nauseated and vomiting. Then evaluated after 12 hours.

Research journal articles by Parisa Yavari kia ; Farzaneh Safajou ; Mahnaz Shahnazi ; Hossein Nazemiyeh with the title "The Effect of Lemon Inhalation Aromatherapy on Nausea and Vomiting of Pregnancy: A Double-Blinded, Randomized, Controlled Clinical Trial" in 2014 This was a randomized clinical trial in which 100 pregnant women with nausea and vomiting who had eligibility criteria were randomly divided into intervention and control groups based on four- and six-random block sampling method. Lemon essential oil and placebo were given to the intervention and control groups, respectively, to inhale it as soon as they felt nausea. The nausea, vomiting, and retch intensity were investigated 24 hours before and during the four days of treatment employing PUQE-24

Results: There was a statistically significant difference between the two groups in the mean scores of nausea and vomiting on the second and fourth days ($P = 0.017$ and $P = 0.039$, respectively). The means of nausea and vomiting intensity in the second and fourth days in the intervention group were significantly lower than the control group. In addition, in intragroup comparison with ANOVA with repeated measures, nausea and vomiting mean in the five intervals, showed a statistically significant difference in each group.

A research journal article conducted by Ismail BIYIK, Fatih KESKIN entitled "The Lollipop with Lemon Aroma May Be Promising in Nausea and Vomiting in Pregnancy" uses a prospective case-control study design conducted in two centers; Bursa Karacabey and Mustafakemalpaşa State Hospitals between June 2016 and August 2018 and was approved by the Ethics Committee of the Bursa High Specialization Research and Training Hospital and informed written consent was obtained from each participant. The study was conducted following the required Declaration of Helsinki. Power 81%, Pregnancy -Unique Quantification of Emesis and Nausea (PUQE) study and control group scores at baseline and the first day were 1.23, significance level (α) 0.05, coefficient of variation on original scale 0.3 and sample size 33 +33 was calculated by the PASS 11 program. The group to be included in the first patient meeting the inclusion criteria was determined by a simple randomized method. Therefore, control group 1

patient and patient 2 were included in the study group. Patients with odd numbers were included in the control group and patients with even numbers were included in the study group. The study involved women aged 18-45 years with singleton pregnancies between 6-14 weeks. The week of pregnancy is determined by the date of the last menstrual period. If there is a difference of more than 1 week between the date of the last menstrual period and the ultrasound measurement, then the ultrasound measurement is accepted in determining the week of gestation. The diagnosis of NVP is a diagnosis of exclusion such as Patients with multiple pregnancies, molar pregnancies, or systemic diseases (pancreatitis, hepatitis, cholecystitis, etc.) women with hyperemesis gravidarum were excluded from the study. Pregnant with weight loss of >5%, findings of dehydration, ketosis, and electrolyte abnormalities are accepted as hyperemesis.

Research journal articles researched by Dr. Arshi Anjum, Dr. Kouser Fathima Firdose, Dr. Wajeeha Begum with the title "Effect of Sikanjabeen Lemooni in Qay'al-Haml: An Open Observational Study" using the type of research study. An open observation study was conducted from January 2017 to December 2017 at the Dept. OBG National Institute of Unani Medicine hospital, Bengalurus. The sample size is calculated using the formula, $n = 2 [(Z\alpha - Z\beta) \times \sigma]^2 / (\mu_1 - \mu_2)^2$ 15 around the difference in the mean PUQE of the two estimates. The mean and SD of PUQE were taken from previous studies. n = number of samples required, 1 = mean score before treatment, 2 = mean score after treatment, $\mu_1 - \mu_2$ = clinically significant difference, σ = standard deviation. The calculated sample size is 27.08; considering 10% dropouts, the total sample size was 30. Pregnant women with c/o nausea and vomiting with a single intrauterine pregnancy at 7 to 14 weeks gestation were included in the study. Women with hyperemesis gravidarum, treated with other antiemetics, with pregnancy-related medical conditions such as severe anemia, hypertension and diabetes mellitus and with a history of other non-obstetrical causes of vomiting such as cholecystitis and appendicitis were excluded from the study by performing Hb%, RBS, CUE, Ultrasound-obstetrics. A total of 68 patients were screened; 3 patients were ineligible because of HG. Of the 65 eligible patients; 22 refused to participate and 13 were excluded; 1 patient was aborted before treatment was started, 1 had multiple pregnancies, in 2 patients each gestational age >14 weeks and Hb% <11; 3 had hypothyroidism and 4 patients had UTI. 30 patients were included in this study.

This research journal article was researched by Masoumeh Namazi; Seddigheh Amir Ali Akbari; Faraz Mojab ; Atefe Talebi ; Hamid Alavi Majd; Sharareh Jannesari with the title "Aromatherapy With Citrus Aurantium Oil and Anxiety During the First Stage of Labor". This study used the method. This randomized clinical trial was conducted on two groups of pregnant women, who were referred to Vali-Asr Hospital (Tuysarkan, Iran) between June and September 2013. It was registered with the Iranian Clinical Trials Registry (IRCT ID: N6 201301306807). Considering similar studies, 95% confidence interval, and 5% probability of error, the sample size was calculated as 63 subjects in each group. Women were first briefed on the aims and methods of the study and then asked to provide written informed consent if they were willing to participate. Women were only included if they were Iranian, primiparous, and aged 18-35 years, had full-term, singleton pregnancy, cephalic presentation, spontaneous contractions, cervical dilation 3-4 cm at delivery, good hip condition and intact amniotic sac. , had not used analgesic drugs in the past eight hours, and had no liver, gallbladder, or respiratory disease on their records. People with impaired smell, allergy to herbal medicines, or complications of pregnancy (eg, preeclampsia, chorioamnionitis, placental abruption, and abnormal fetal heart rate at the time of the study) were excluded. Data were collected using obstetric and demographic questionnaires, examination and observation checklists including vital signs, vaginal examination, uterine contractions, and fetal heart rate, and

the Spielberger state anxiety questionnaire. The suitability of the first two tools was tested through content validity. In addition, the reliability of the checklist was agreed using the parallel form reliability ($r = 0.85$). After completing the first two instruments, the severity of anxiety was assessed with 20 items of the mentioned anxiety questions. As each item was assigned a score of 1-4, the total anxiety score ranged between 20 and 80 (20-40, mild anxiety; 41-60, moderate anxiety; 61-80, severe anxiety). This questionnaire is widely used to measure trait-state anxiety in clinical studies (11, 22–24) and has a correlation coefficient of 0.85–0.91 (25).

Exclusion criteria were allergy or intolerance, pregnancy complications such as vaginal bleeding during the study, and emergency cesarean delivery before study completion. The random number table was used to randomly allocate women who were eligible for aromatherapy and the control group ($n = 63$ each). The concentration of the purchased distillate (Iran-Gereban Co., Iran) was determined by the gravimetric method at the School of Pharmacy, Shahid Beheshti University of Medical Sciences (Teheran, Iran). Each 100 mL of the distillate contains 8 mL of essential oil. Gauze cloth impregnated with 4 mL of normal saline and distillate was attached to the collars of participants in the aromatherapy and control groups. The gauze is changed every 30 minutes. Anxiety intensity in both groups was measured at baseline and after intervention at 3-4 and 6-8 cm openings. Data analysis was performed with SPSS for Windows version 22.0 (SPSS Inc., Chicago, IL, USA). Descriptive statistics including central tendency, dispersion, and frequency distribution were used to describe the two groups. Chi-square and Fisher's exact test was applied to compare qualitative variables between groups. Quantitative variables were compared using an independent t-test. Comparison of the two groups in terms of qualitative variables with non-normal distribution and ordinal variables were performed using the nonparametric Mann-Whitney test. Finally, the Kolmogorov-Smirnov test was performed to check the normal distribution of the subjects.

Journal article conducted by Narges Joulaeeraad, Giti Ozgoli, and Fatemeh Salehimoghaddam entitled "Effect of Aromatherapy with Peppermint Oil on the Severity of Nausea and Vomiting in Pregnancy: A Single-blind, Randomized, Placebo-controlled trial in 2015. A single-blind randomized placebo-controlled clinical trial was conducted on 56 pregnant women with complaints of NVP, who were referred to the selected health center of Shahid Beheshti University of Medical Sciences in Tehran from December 2014 to the end of May 2015. .

Inclusion criteria were age 18 to 35 years, Iranian and at least educated, literate, basic level of NVP mild to moderate (scores 3 to 12) based on scores obtained from the PUQE questionnaire before the intervention, 6 to 20 weeks gestation based on the first day of the period. last menstrual period (LMP) or first-trimester ultrasound, have at least one ultrasound report to determine the number and health of the fetus, desired pregnancy according to individual, deficiency Olfactory problems according to individual, singleton pregnancy normal in all respects and no history of obstetric complications in current pregnancy (no symptoms of threatened abortion, less molar pregnancy), pregnant women who are healthy in all respects and no known history of the disease. based on information from maternal health profile records, non-smoking and alcohol consumption, individual insensitivity to herbal medicine, did not consume chemical and herbal antiemetic drugs in the 24 hours before the study began, did not experience mental health problems and bad luck in the six months before the study started.

In addition, participants were excluded from the study if severe nausea and vomiting occurred during pregnancy (score 13 or higher on the PUQE questionnaire), sensitivity to peppermint essential oil or intolerance to peppermint aroma, taking antiemetic drugs or herbal remedies during pregnancy. the study period, the

Rini Sulistyowati, Rr Catur Leni Wulandari

implementation of aromatherapy less than three times a day, the occurrence of symptoms of threatened abortion during the study period, and the reluctance to continue to participate in the study.

The tools used in this study included three questionnaires: (1) a demographic and obstetrics questionnaire; (2) PUQE questionnaire; and (3) the final questionnaire. The demographic and obstetrics questionnaire consisted of two parts, namely background information and obstetric history, which the researcher filled out for each woman. A PUQE questionnaire containing three questions about duration of nausea, amount of vomiting and frequency of vomiting (22, 23). This was used to determine the baseline level of NVP and its severity during the study period.

The final questionnaire was used to evaluate patient satisfaction with treatment, adherence to health and nutrition recommendations, and evaluation of changes in general symptoms from the pregnant woman's point of view.

The content validity of the final questionnaire was evaluated. In addition, the reliability of the PUQE questionnaire with a correlation coefficient of 0.9 was determined using the retest-test method.

A research journal article conducted by Rahajeng Siti Nur Rahmawati, Indah Rahmaningtyas, Trinanda Qonitah with the title "Lemon Aromatherapy To Reduce Emesis Gravidarum". In this method, this type of research is a quantitative study with a comparative design, where 2 groups receive a different intervention, namely the provision of hot ginger drinks and lime drinks. Before the intervention is given, a pretest will be given and after the intervention will be given a posttest. The research design is to distinguish groups against work procedures. Provision of hot ginger with the composition: ginger emprit (*Zingiber officinale*, the smallest and hottest type of ginger in Indonesia) sliced 2 grams, 1 tablespoon sugar, and 250 ml of warm water with a temperature of 60-70°C, given 2x1 a day for 4 days. Giving lime with the composition: 1 lime (*Citrus limon*) with a diameter of 1.5 - 2.5 cm, 1 tablespoon sugar and 250 ml of warm water with a temperature of 60-70°C, given 2x1 a day for 4 days.

RESULT AND DISCUSSION

A. Review Result

1. A journal article conducted by Umu Fauzah entitled "The Effect of Lemon Inhalation Aromatherapy on Emesis Gravidarum in First Trimester Pregnant Women at Umbulharjo I Health Center Yogyakarta City. moderate vomiting as many as 9 people (60.0%). The results showed that based on table 3 it can be seen that before being given lemon inhalation aromatherapy, most research respondents were in moderate nausea and vomiting category, namely 9 people (60.0%) and table 4.5 after being given lemon inhalation aromatherapy, most research respondents were in the no category. nausea and vomiting as many as 13 people (86.67). Based on table 3, p value = 0.000 < 0.05, it can be concluded that there is a significant difference in respondents before and after giving lemon inhalation aromatherapy in the experimental group where the average value of the intensity of nausea and vomiting before being given is 12.80 and after being given the average value of nausea and vomiting. decreased by 3.07. It can be seen that the difference in the average value between before and after is 9,733 with a standard deviation of 4,061.
2. Journal article conducted by Fitrianiingsih and Siti Khatijah 2019 entitled "Effectiveness of Lemon Aromatherapy for Treating Emesis Gravidarum" Based on table 3 p value = 0.000 < 0.05, it can be concluded that there are

significant differences in respondents before and after giving lemon inhalation aromatherapy. in the experimental group where the average value of the intensity of nausea and vomiting before being given was 12.80 and after being given the average value of nausea and vomiting decreased, namely 3.07. It can be seen that the difference in the average value between before and after is 9,733 with a standard deviation of 4,061. Various studies are in line with the results of this study, among other studies conducted by Rofi'ah (2019) that there is a difference in the degree of emesis gravidarum in pregnant women between before and after being given lemon aromatherapy, where the level of emesis gravidarum before being given lemon aromatherapy is in the score range of 3 – 23. and the level of emesis gravidarum after being given lemon aromatherapy on a score range of 0-19. In this study also compared the use of aromatherapy with various doses of 0.1 ml; 0.2ml; and 0.3ml. Based on the results of this study, there was no difference in the effectiveness of lemon aromatherapy between the three doses in overcoming emesis gravidarum, but if analyzed in each group, the results showed that lemon aromatherapy doses of 0.2 and 0.3 were effective in overcoming emesis gravidarum. Thus, health workers, lecturers or educators as service providers and transfer agents of knowledge can use references from various research results on the benefits of lemon aromatherapy in overcoming emesis gravidarum.

3. This research journal article was conducted by Siti Cholifah and Titin Eka Nuriyanah entitled "Lemon Aromatherapy Reduces Nausea and Vomiting in First Trimester Pregnant Women". after being given lemon aromatherapy Mean+ SD 13.67 + 4.071 Rhodes index score from the category of moderate nausea and vomiting to mild, the results of the Wilcoxon Sign Rank Test analysis showed a significant decrease in the Rhodes index score for nausea and vomiting after pregnant women inhaled lemon aromatherapy with P value = 0.0001 < = 0.05. The results of this study are supported by the research of Safajau, et al (2014) with the results of p = 0.0001 lemon inhalation aromatherapy can effectively reduce nausea and vomiting in pregnant women. In addition, Santi's (2013) study showed that p = Aromatherapy, a non-pharmacological therapy, is currently being widely used in the UK and Europe, with availability reported in 76% in German obstetrics departments, aromatherapy has recently been introduced to US hospitals and clinic (Seol et al., 2010; Horowitz, 2011; Conrad, 2010 in Smith V 2012). Lemon aromatherapy derived from the extraction of lemon peel (Citrus Lemon) is one type of aromatherapy that is safe for pregnancy and childbirth (Medforth, 2013). In this study, all respondents liked the smell of lemon aromatherapy. Lemon essential oil contains 66-80% limonene, geranyl acetate, nerol, linalyl acetate, -pinene 0.4–15%, -pinene 1-4%, terpinene 6-14% and myrcen (Young, 2011). Chemical compounds such as geranyl acetate, nerol, linalyl acetate, have antidepressant, antiseptic, antispasmodic, sexual arousal and mild sedative effects (Namazi, et al, 2014)
4. A research journal article conducted by Ismail BIYIK, Fatih KESKIN entitled "The Lollipop with Lemon Aroma May Be Promising in Nausea and Vomiting

5. in Pregnancy.” Among vegetable oils and non-pharmacological alternative aromatherapy, ginger, peppermint, and lemon essential oils are used to prevent NVP (10-12). The anti-emetic effect of lemon is known for a long time and so far no harm has been reported during pregnancy (13,14). Lemon in the form of essential oil (lemon orange) prepared for dispersal in bedroom air has been shown to lower NVP (15). The smell of lemon is reported to reduce symptoms of nausea and vomiting by as much as 40% (16). Smith et al. reported that fresh lemon odor was effective in reducing NVP symptoms (17). Yavari Kia et al. suggested that inhaling lemon for 4 days was effective in reducing NVP symptoms when compared to controls (8).
6. Although it is not known that the mechanism of chemotherapy-induced nausea and vomiting is the same as that of NVP, it has been reported that *Citrus aurantium* oral capsule reduces chemotherapy-induced nausea in patients with ovarian cancer (18). In addition, Ozdemir et al. reported that administering strawberry-scented lollipops to patients receiving cryopreserved peripheral blood stem cell (PBSC) infusions during bone marrow transplantation reduced treatment-related nausea and vomiting (9). Dimethyl sulfoxide, an ingredient of cryopreserved autologous peripheral stem cells (PBSC) is thought to reach mucosal surfaces such as the oral cavity and cause nausea and vomiting that smells like garlic. The gustatory branches of the olfactory and facial nerves, the glossopharyngeal nerve and the vagus nerve are thought to transmit these signals to the hypothalamus and limbic system. Perhaps the same mechanism applies to lemon lollipops. It is known that ketones produced during long-term starvation are excreted through exhalation and urination in the form of acetone halitosis and ketonuria. Excretion of ketones through respiration and ketonemia itself causes bad breath, bad breath, and vomiting which in turn causes hunger and ketone production returns in a vicious cycle. Inhalation of aromas or aromatic tastes can be used to suppress bad breath and break this cycle. Inhalation of lemon is thought to produce this effect by the olfactory center via olfactory receptors and induce a state of physical and mental well-being (8). The same effect may apply to the lemon-scented puffs in the form of lollipops. Although there are reports that inhaling lemon lowers NVP, there are no studies on the effects of oral administration of lemon-flavored lollipops. Lollipops are readily available and are much cheaper and acceptable than lemon flavored oil. Therefore, we investigated the effect of lemon-flavored lollipops (round candy with sticks) on NVP cases in this study. Decreased PQUE scores in the study group compared to the control
7. Research journal articles conducted by Parisa Yavari; Farzaneh Safajou; Mahnaz Shahnazi; Hossein Nazemiyeh entitled “The Effect of Lemon Inhalation Aromatherapy on Nausea and Vomiting of Pregnancy: A Double-Blinded, Randomized, Controlled Clinical Trial.” According to the findings of this study, the mean value of NVP decreased during four days of using inhaled lemon aromatherapy; however, this reduction in scores was statistically significant only on the second and fourth days of follow-up in the two groups. The use of complementary and alternative medicine (CAM) in Iran has a long

history and midwives and doctors are keen to use it. Aromatherapy is a method that in addition to having a physical effect, has a psychological effect (such as relaxation or stimulation) that can be repeated very quickly. Smell at the lowest basic level, can stimulate the body to respond physically and psychologically. When aromatic substances such as herbal oils give off odor molecules, receptor cells in the nose send impulses directly to the olfactory areas of the brain. This region is closely linked to other systems that control memory, emotions, hormones, sex, and heart rate. The pulse acts immediately and the hormones released are capable of stimulating, calming, or exhilarating the person, leading to the creation of physical and mental changes (10). Lemon aromatherapy can have a beneficial effect on NVP (17). The results of the Pretest-Posttest study in Indonesia, in 12 pregnant women with NVP showed that lemon aromatherapy reduced NVP (18), this is in line with the results of this study. Erick et al. investigated the use of non-pharmacological treatments by women for the relief of NVP. The results of his study showed that 40% of women used lemon scent to relieve NVP, and 26.5% of those who used it said it was effective (11).

8. The results of the study by Pasha et al. who used peppermint inhaled aromatherapy to relieve NVP in 60 pregnant women tried to report that recovery was improved to the delight of researchers, but that was not true. the likelihood of this type of bias may be higher in trials where placebo is used only as a treatment. The significant decrease in nausea and vomiting scores only on the second and fourth days between the groups may be due to different responses by individuals to aromatherapy. In other words, this treatment may be pleasant for some and maybe uncomfortable for others. In aromatherapy, patients need to inhale certain odors based on their psychosocial state, and each individual will react to certain odors differently (19). Therefore, it can be considered as one of the limitations of this study. Another limitation to this study was the inability to control psychological factors during the intervention. One of the strengths of this study is the use of the PUQE-24 questionnaire specifically designed for NVP. We have not found any clinical trials that have tested the therapeutic effect of Lemon aroma on NVP. Therefore, due to limited research in the field of aromatherapy on NVP, further research is needed in this area. Inhaled aromatherapy with Lemon essential oil has shown that this method can reduce NVP. In contrast to chemical treatments, aromatherapy has beneficial effects on physical and psychological health and may be useful as an alternative approach in the treatment of NVP.

The results of the review, which have described the level of giving lemon aromatherapy to the incidence of emesis gravidarum. According to (Winkjosatro, 2010), that pregnancy at a young age is one of the factors causing emesis gravidarum in a healthy reproductive period that the age for pregnancy and childbirth is 20-30 years, maternal mortality in pregnant women and giving birth at the age of under 20 years turns out to be 2 – 3 times higher than deaths that occur at the age of 20-35 years, maternal mortality increases again after the age of 35 years, this is due to the decline in the function of the female reproductive

organs.

CONCLUSION

Conclusions based on the analysis that has been done by the author, it is concluded that the use of lemon aromatherapy reduces the incidence of emesis gravidarum. Suggestions that can be given for the implementation of the next literature review is that it is better to use more databases so that you can get more and better articles and the limitation of the year for searching articles with the specified keywords is the last five years.

REFERENCES

- Al Cidadapi, Ibnu Eman. (2016). *Ramuan Herbal ala Thibun Nabawi: "Mengupas pengobatan herbal di dalam Thibun Nabawi"* (Vol. 1). Jakarta: Putra Ayu.
- Astuti, Reni Yuli, & Ertiana, Dwi. (2018). *Anemia dalam Kehamilan*. Semarang: Pustaka Abadi.
- Cahyanto, Erindra Budi, Ns, M. Kes, SSiT, Ika Sumiyarsi Sukamto, Nugraheni, Angesti, ST, S., Musfiroh, Mujahidatul, Ns, Msi, Argaheni, Niken Bayu, Novika, Revi Gama Hatta, & Fitri, Elfa Rahmawati. (2020). *ASUHAN KEBIDANAN KOMPLEMENTER BERBASIS BUKTI*. Pati: CV AL QALAM MEDIA LESTARI.
- Chahyani Agustia, Ayu. (2019). *Perbedaan Efektivitas Wedang Jahe Dengan Pemberian Terapi Akupresure Terhadap Mual Muntah Pada Ibu Hamil Di Wilayah Kerja Puskesmas Pujokerto Lampung Tengah*. Poltekkes Tanjungkarang.
- Dewi, Yulia Irvani. (2012). EFEKTIFITAS MINUMAN JAHE DALAM MENGURANGI EMESIS GRAVIDARUM PADA IBU HAMIL TRIMESTER I. *Jurnal Ners Indonesia*, 1(02).
- Kia, Amir. (2013). Determinants of the real exchange rate in a small open economy: Evidence from Canada. *Journal of International Financial Markets, Institutions and Money*, 23, 163–178.
- Kundarti, Finta Isti, Rahayu, Dwi Estuning, & Utami, Reni. (2017). Efektifitas pemberian serbuk jahe (*Zingiber Officinale*) terhadap tingkatan mual muntah pada ibu hamil. *Jurnal Ilmu Kesehatan*, 4(1), 18–30.
- Logo, Desmona Jayanti Kadek. (2020). *ASUHAN KEBIDANAN KOMPREHENSIF PADA NY. ST DI PUSKESMAS MANUTAPEN KOTA KUPANG TANGGAL 02 JULI S/D 26 AGUSTUS 2018*. Kupang: UNIVERSITAS CITRA BANGSA.
- Mariza, Ana, & Ayuningtias, Lia. (2019). Penerapan akupresur pada titik P6 terhadap emesis gravidarum pada ibu hamil trimester 1. *Holistik Jurnal Kesehatan*, 13(3), 218–224.
- Martin, Kathleen E., Tian, Yongming, Busani, Tito, Medforth, Craig J., Franco, Ricardo, van Swol, Frank, & Shelnutt, John A. (2013). Charge effects on the structure and composition of porphyrin binary ionic solids: ZnTPPS/SnTMePyP nanomaterials. *Chemistry of Materials*, 25(3), 441–447.

Rini Sulistyowati, Rr Catur Leni Wulandari

- Oktaviani, Linda. (2020). *APLIKASI AROMATERAPI LEMON PADA NY. N DAN NY. I TRIMESTER I DENGAN KETIDAKSEIMBANGAN NUTRISI KURANG DARI KEBUTUHAN TUBUH*. Magelang: Tugas Akhir, Universitas Muhammadiyah Magelang.
- Putri, Monifa. (2020). Hubungan Paritas dengan Kejadian Hiperemesis Gravidarum pada Ibu Hamil di RSUD Indrasari Rengat. *Jurnal Bidan Komunitas*, 3(1), 30–35.
- Saridewi, Mitta Nurfitri, Bahar, Meiskha, & Anisah, Anisah. (2018). Uji Efektivitas Antibakteri Perasan Jus Buah Nanas (*Ananas comosus*) Terhadap Pertumbuhan Isolat Bakteri Plak Gigi di Puskesmas Kecamatan Tanah Abang Periode April 2017. *Biogenesis: Jurnal Ilmiah Biologi*, 5(2), 104–110.
- Silvia, Devi. (2018). *Uji aktivitas antifungi ekstrak kulit buah jeruk nipis (Citrus aurantifolia) terhadap jamur Candida albicans*. Surabaya: UIN Sunan Ampel Surabaya.
- Vitrianingsih, Vitrianingsih, & Khadijah, Sitti. (2019). Efektivitas Aroma Terapi Lemon untuk Menangani Emesis Gravidarum. *Jurnal Keperawatan*, 11(4), 277–284.