

THE EFFECTIVENESS OF GINGER AND MINT LEAVES DECOCTION TOWARD THE FREQUENCY OF EMESIS GRAVIDARUM

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ABSTRACT

The pregnancy causes physical, psychological and hormonal changes of the mother. This is can cause a variety of trouble or complaints, and one of them is nausea and vomiting. Although, the emesis gravidarum is considered normal for first trimester pregnant if the frequency of nausea is excessive vomiting must be aware. Emesis gravidarum in early pregnancy can be reduced by non-pharmacological approaches including herbs such as ginger, mint, chamomile, acupuncture, and massage. The research method used is Quasy Experiment Design with Time Series Design. The study was carried out at Kesesi I Public Health Center in Pekalongan Central Java 2018. The sampling using purposive sampling and obtained as many as 30 respondents. The statistical test used is the Mann Whitney Test. The results of this study showed that administration before and after ginger decoction in pregnant women reduced the frequency of emesis gravidarum with an average difference of 2,333 with p-value 0,000 <α (0,05). In the mint leaf group, the mean difference was 1,200 with p-value 0,000 <α (0,05). This shows that both the ginger stew and mint leaves have an effect on decreasing the frequency of emesis gravidarum in pregnant women. For efficacy results obtained the decoction of ginger with a mean rank of 20.87 compared with the group of mint leaves decoction of 10.13 so it can be concluded that the ginger stew is more effective than mint leaves.

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INTRODUCTION

The pregnancy causes physical, psychological, and hormonal changes on the mother. These can cause various troubles or complaints, and one of them is nausea and vomiting. This is normal during the pregnancy. Nausea and vomiting in the pregnancy are often called as morning sickness (It can happen anytime). Most of the pregnant women will experience *emesis gravidarum*.^{1,2}

Even though the complaint of emesis gravidarum is considered normal and not harmful for the pregnant women, if the frequency of nausea is excessive, then they must be aware. Hyperemesis gravidarum can affect 0,3-2% of pregnancy and can cause dehydration, It affects 80-90% of pregnant women at every level, and more than 5% of them lose their weight.^{3,4}

Nausea and vomiting in early pregnancy can be reduced by non-pharmacological approaches including herbs such as ginger, mint, chamomile, acupuncture, and massage.⁴ Ginger functions against nausea and can be used by pregnant women to reduce emesis gravidarum. A study showed that ginger is really effective to decrease

metoclopramide which is a compound that induces nausea and vomiting. Ginger contains volatile oil so that ginger can be used as an alternative treatment to cure *emesis gravidarum*.⁵

Another study showed that the morning sickness had 13 times in frequency before having hot ginger, and after having hot ginger, it decreased up to 3,18 times. This shows that hot ginger is really effective to reduce the frequency of nausea and vomiting on the first trimester pregnant women.⁶ E. Haji, S. Javadi et al (2013) assert that ginger and vitamin B₆ are effective to reduce nausea and vomiting on pregnant women. Even though the effect of vitamin B₆ is bigger, there is no significant difference statistically.⁷ The result of the study conducted by F. Saberi et al (2014) found that ginger capsule was more significant to deal with nausea on the pregnant women than the control group and placebo. In another study also showed that ginger was more effective than acupressure to reduce nausea on pregnant women.⁹

Mint leaves contain a lot of volatile oil that is menthol that can cut down flatulence, nausea, vomiting, muscle pain, and contain the carminative effect that works in small intestine through gastrointestinal so that it can take away nausea and vomiting. This is in line with a study which asserts that having peppermint decoction regularly can influence to reduce the frequency of nausea and vomiting.

The result of the study which was conducted on July 29th, 2018 at Kesesi 1 Public Health Center was found that there were 10 first trimester pregnant women suffering from nausea and vomit. There were 8 people (80%) who lacked knowledge about the advantages of ginger and mint leaves to reduce nausea and vomiting. While there were 2 people who consumed ginger, but that was just used as the ingredient for cooking. On the other hand, there were no people who consumed mint leaves or 10 people (100%) did not consume them at all.

Based on the data assessment and elaboration of the background of the study, most of the women get pregnant experienced *emesis gravidarum* in the first trimester. In society, nausea and vomiting can be cured by pharmacological treatment. It is better for them to take advantage of non-pharmacological treatment or to take advantage of local culture by consuming ginger or mint leaves so that it can reduce the effect of pharmacological treatment. Therefore, the researcher is interested in conducting a study by comparing "The effectiveness of ginger and mint leaves decoction toward the reduction of the frequency of *emesis gravidarum*".

METHOD

The method which is used in this research is a queasy experiment design with the time series design. The population of this research is all the pregnant women who are the age of pregnancy between 4-12 weeks at Kesesi 1 Public Health Center consisting of 41 people. The sample of this research is pregnant women with *emesis gravidarum*, who are able to be the respondents and do not suffer from the certain disease. According to Hastono (2007), as cited in Lampau (2015), one independent variable needs 15 samples, so that two independent variables need 30 samples. In this study not using the control group, all samples were given an intervention because the purpose of the study was to see the effectiveness of ginger stew and mint pepper leaves. The sampling of this study was using a purposive technique that is by determining the criteria according to the objectives of the study.

As the result, the number of sample in this research is 30. The technique sampling of this research is by using purposive sampling. Exclusion criteria: 1) First-trimester pregnant woman (gestational age less than 16 weeks). 2) Experiencing *emesis gravidarum* or nausea vomiting less than 10 times. 3) Pregnant women in Kesesi 1 Public Health Center working area. 4) Willing to be a respondent.

The data instrument of this research is the register book of Kesesi 1 Public Health Center. In addition, the data collection process was done when the respondents did ANC or the researcher visited the respondents' house every morning for 15 days. The assessment of the frequency of nausea and vomiting was done before and after having a decoction of ginger and mint leaves. The type of ginger used is white/small yellow ginger / 2.5 grams of empirical ginger sliced and boiled with 250 ml of water plus enough brown sugar (± 10 grams) taken 2x1 a day for 15 days. Another treatment used 2.5 grams of mint leaves, then boiled with 250 ml of water plus enough sugar (± 10 grams) taken 2x1 a day for 15 days. The analyses of this research are univariate and bivariate. Statistic test which is used in this research is Mann Whitney test.

RESULTS

Table 1. The Analysis Result of the Difference between a Frequency of *Emesis Gravidarum* before and after Having a Ginger Decoction

Intervention	N	Mean	Mean changes	SD	SE	p - value
Before	15	3.60	2.333	0.986	0.254	0.000
After		1.27		0.704	0.182	

Based on table 1 was obtained that mean of the intensity of nausea and vomiting before having ginger decoction is 3,60 which the standard deviation is 0,986 and it was obtained 1,27 in the mean of the intensity of nausea and vomiting which the standard deviation is 0,704 after having ginger decoction. The difference between pretest and posttest in the experiment class is 2,333. The analysis result obtained p-value $0,000 < \alpha 0,05$, It can be concluded that there is a significant difference between the mean of the frequency of nausea before and after having ginger decoction.

Table 2. The Analysis Result of the Difference between a Frequency of *Emesis Gravidarum* before and after Having Mint Leaves Decoction

Intervention	N	Mean	Mean changes	SD	SE	p - value
Before	15	3.67	1.200	1.175	0.303	0.000
After		2.47		0.915	0.236	

Based on the table 2 found that mean of the intensity of nausea and vomiting before having mint leaves decoction is 3,67 which the standard deviation is 1,175, and it was obtained 2,47 in the mean of the intensity of nausea vomiting which the standard deviation is 0,915 after having mint leaves decoction. The difference between pretest and posttest in the experiment class is 1,200. The analysis result obtained p-value $0,000 < \alpha 0,05$, It can be concluded that there is a significant difference between the mean of the frequency of nausea before and after having mint leaves decoction.

Tabel 3. The Comparison of the Effectiveness of *Emesis Gravidarum* Frequency after Having a Decoction of Ginger and Mint Leaves

	Groups	N	Mean rank	p-value
Result	Ginger	15	20.87	0.000
	Mint leaves	15	10.13	
	Total	30		

The analysis result was obtained $0.000 < \alpha 0.05$, it can be concluded that having ginger and mint leaves decoction can effect on reduction nausea and vomiting toward the pregnant women. However; the result of the mean rank of both experiment classes found that the result of ginger decoction was more effective to reduce the frequency of nausea and vomiting that is 20,87 than the result of mint leaves that is 10,13. It can be concluded that ginger decoction is more effective than mint leaves.

DISCUSSION

Based on the result of the study that has been conducted at Kesesi 1 Public Health Center, it was obtained that the mean of intensity of nausea and vomiting before having ginger decoction is 3,60 which the standard deviation is 0,986, and it was obtained 1,27 in mean of intensity of nausea and vomiting which the standard deviation is 0,704 after having ginger decoction. The difference between pretest and posttest in the ginger decoction experiment class is 2,333. The analysis result obtained $p\text{-value } 0,000 < \alpha 0,05$, it can be concluded that there is a significant difference between the mean of the intensity of nausea and vomiting before and after having ginger decoction. In addition, mint leaves were obtained that the intensity mean of nausea and vomiting before having mint leaves decoction is 3,67 which the standard deviation is 1,175 and the mean of intensity after having mint leaves decoction is 2,47 which the standard deviation is 0,915. The difference between pretest and posttest in that experiment class is 1,200. The analysis result obtained $p\text{-value } 0,000 < \alpha 0,05$, it can be concluded that there is a significant difference between the mean of the frequency of nausea and vomiting before and after having mint leaves decoction.

The result of this study is in line with the study conducted by Fitri Rahma (2013) that asserted there is a significant difference of the frequency of nausea and vomiting before having ginger decoction, and after having the intervention, $p\text{-value}$ is 0,000. From this result can be concluded that ginger is more effective to reduce nausea and vomiting toward the first trimester pregnant women. Ginger is recommended to be used as the intervention for the pregnant women who suffer from nausea and vomiting. The result of the mint leaves decoction is also in line with the study conducted by Banun, Istiqomah & Yani (2017) that is about the effectiveness of having peppermint decoction on pregnant women toward the reduction of the frequency of emesis gravidarum, they asserted that having peppermint decoction regularly can effect to reduce the frequency of nausea and vomiting on the pregnant women.³ According to Elshabrina (2013), as cited in Nuryanti (2015), It is relevant to the theory that peppermint can be used as an effective drug to cure nausea and vomiting to the pregnant women.¹²

Based on the result of the research by using Mann-Withney Test, it was obtained $0.000 < \alpha 0.05$. It can be concluded that having ginger and mint leaves decoction effects on reducing nausea and vomiting toward pregnant women, however; the result of mean rank for both experiment classes found that ginger decoction is more effective to reduce the frequency of nausea and vomiting toward pregnant women that is 20,87 than mint leaves decoction which is 10,13. As the result, it can be concluded that ginger decoction is more effective than mint leaves.

A study conducted by Santi Dwi Rukma (2013) on the effect of the aroma of blended peppermint and ginger oil toward nausea of the first trimester women pregnant showed that there is the effect of blended peppermint and ginger oil toward the reduction of nausea of the first trimester pregnant women.¹³ The effectiveness of ginger decoction than mint leaves decoction to reduce emesis gravidarum is in line with a study conducted by Marlina & Nurul (2016) which entitled the advantages of ginger candy and mint candy to cure hyperemesis gravidarum on pregnant women showed that there is a significant difference of mean of the hyperemesis gravidarum frequency between ginger candy (19,57) and mint candy (11,43). As the result, ginger candy is more effective than mint candy.¹⁴ A study conducted by H. Pasha, et al (2012) showed that the aroma of peppermint cannot reduce emesis gravidarum significantly than placebo.¹⁵

CONCLUSION

The result of the study showed that having ginger decoction for the first trimester pregnant women can reduce the frequency of emesis gravidarum whose mean is 2,333 with the $p\text{-value } 0,000 < \alpha (0,05)$. In the group of mint leaves is obtained 1,200 in mean

with the p-value $0,000 < \alpha$ (0,05). This showed that either ginger decoction or mint leaves decoction can affect on reducing the frequency of emesis gravidarum for the first-trimester pregnant women. The result of the effectiveness of ginger decoction is 20,87 in mean rank which is compared to the result of mean decoction that is 10,13. As the result, it can be concluded that having ginger decoction is more effective than mint leaves. It is better for pregnant women to take advantage of nonpharmacological ingredients to reduce nausea and vomiting during the first trimester period so that it can minimize to consume pharmacological drugs. For further research, it can be used as evidence base and additional information to develop effective and more applicable research on ginger and mint leaves to reduce nausea and vomiting toward pregnant women.

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