



Gummy *Mandjah* (Honey, Tamarind, Red Ginger) on Emesis in Pregnant Women

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ABSTRACT

Introduction. One of the discomforts that mothers frequently experience during the start of pregnancy is emesis gravidarum, which is characterized by nausea and vomiting. The welfare of the mother and child will be impacted if emesis episodes are not handled right away. Herbal remedies like red ginger, tamarind, and honey can help people stay healthy. The purpose of this study is to examine how “Gummy *Mandjah*” can help pregnant women experience less nausea. **Methods.** This study used a pre-experimental research design, one group pretest posttest. Giving gummy made from honey, tamarind, and red ginger to 20 pregnant women who met the inclusion criteria, sampling technique using simple random sampling, Gummy was given for 14 days with a dose of 2 times a day and then assessed using the PUQE score. **Results.** The results obtained showed that there was a decrease in the frequency of emesis after consuming gummy with an average difference of 0.60. Data analysis used a paired sample t-test and showed that there was an effect of giving gummy on reducing emesis with a p-value of $0.001 < 0.05$. **Conclusion.** Honey, tamarind, and ginger can be an option to overcome nausea and vomiting in pregnant women. These ingredients are easy to obtain, practical to process, and have minimal side effects. With gummy innovations or other forms, it can make it easier for pregnant women to consume them and reduce the dominant smell and taste of each ingredient that can trigger mothers not to want to consume them.

1. Introduction

During pregnancy, a mother will experience discomfort which will disrupt the pregnancy process if not treated immediately, one of which is the occurrence of emesis at the beginning of the trimester.¹ Based on data in Indonesia, it is found that pregnant women with In 14.8% of pregnancies, hyperemesis gravidarum occurs during pregnancy. Increased levels of the hormones progesterone and estrogen, which are triggered by human chorionic gonadotropin (HCG) increase in the fetal placental serum, cause emesis during pregnancy.^{2,3}

Despite being normal, emesis during pregnancy can affect both the mother's and the fetus's growth and development if treatment is not received. Too much vomiting causes the mother and fetus to not absorb food as well as they should, which increases the risk of chronic energy deficiency, anemia, postpartum hemorrhage, intrauterine growth retardation, low birth weight, developmental abnormalities, and even fetal death.^{4,5}

To minimize the discomfort of nausea and vomiting, people previously used complementary

techniques and herbs that were easy to obtain and believed to be able to relieve the symptoms of emesis during pregnancy.⁶ Among these herbal ingredients are ginger, tamarind, and honey. The nutrients contained in freshly grated ginger or 250 mg ginger powder capsules are 3.4% potassium, 3.0% magnesium, 3.0% copper, 3.0% manganese, and 2.5% vitamin B6 (pyridoxine). Ginger provides immediate assistance to neutralize nausea and vomiting. Apart from that, tamarind, which is rich in polyphenols and flavonoids, is also known to reduce nausea and vomiting.^{7,8}

Increasingly severe emesis will reduce the mother's stamina, thereby worsening the mother's condition and endangering the growth and development of the fetus. Many people consume honey, which is believed to contain many ingredients such as amino acids, carbohydrates, protein, and several types of vitamins and minerals which quickly restore the body's vitality.¹

Honey, tamarind, and red ginger each have benefits for reducing nausea and vomiting in pregnancy because ginger contains essential oils,

namely gingerol, tamarind has flavonoids, and honey also contains pyridoxine. These substances are anti-chemoreceptors that can block or stop serotonin, dopamine, asticlone, histamine, and neurokinin which can activate the vomiting center. Red ginger and tamarind have no side effects on pregnancy, while honey is rich in nutrients and enzymes for the nutritional needs of pregnant women and the fetus. Honey contains the enzymes diatase, invertase, glucose oxidase, and peroxidase for metabolism, so it is absorbed more quickly by the body.⁸⁻¹⁰

2. Methods

This study used a pre-experimental research design with the one-group pretest and post-test method. The number of respondents was 20 pregnant women who met the inclusion criteria, namely all mothers who experienced nausea and vomiting, normal pregnancy, were willing to be respondents, and were able to communicate. Exclusion criteria were no history of hypertension, no diabetes, no history of congenital abnormalities, and no history of allergies to raw materials. The sampling technique used simple random sampling.

Gummy *Mandjah* was given twice a day for 14 days. This is based on previous research that has been done that giving the gummy for 7 days has had an effect, and this can be optimized for 14 days.^{11,12} Home visits were made 3 times a week for evaluation, and monitoring was done every day via online group. The data collection method used questionnaires and interviews conducted before and after the intervention.

The PUQE (Pregnancy-Unique Quantification of Emesis and Nausea) score is a validated scoring system that may be used to assess the severity of

symptoms of nausea and vomiting in pregnancy. PUQE scoring system was used to determine the effect of giving Gummy *Mandjah* to pregnant women on reducing the frequency of vomiting. The statistical test used was the paired sample t-test. This research has received an ethical recommendation letter with number: Number: 0159/UAB1.20/SR/KEPK/09.24.

3. Results

The results of research carried out gummy mandjah on the incidence of emesis in pregnant women at the Lubuk Baja Community Health Center, Batam City, used 20 respondents from pregnant who experienced nausea and vomiting (emesis) according to the criteria set by the researcher, with a research design namely pre-experimental design with one group pre-test post-test. "Gummy Mandjah" was given for 14 days with a dose of 2 times a day which was carried out in 2024. The results obtained include the following.

Based on Table 1 above, some pregnant women are in the high-risk category, namely 2 people (10%) aged <20 years and 1 person (5%) who is ≥ 35 years old, the rest of the respondents are at the reproductive age of 20 -35 years as many as 17 people (85%). In the Education category, half of the respondents had low education, namely 10 people (50%), and the other 10 people had high education (50%).

Then, for employment status, the majority of mothers were not working, namely 12 respondents (60%). The gestational age of respondents in the first trimester was 5 people (25%) and in the second trimester, there were 15 people (75%). Meanwhile, based on parity, most respondents in this study were primigravida (65%).

Table 1. Demographic characteristics of participants at the Lubuk Baja Community Health Center, Batam

Respondent Characteristics	Frequency (n)	Percentage (%)
Age		
< 20 year	2	10
≥ 20 – 35 year	17	85
> 35 year	1	5
Education		
Low (Elementary, and Junior High School)	10	50
High (High School and University)	10	50
Employment		
Working	8	40
Not working	12	60
Trimester		
Trimester 1	5	25
Trimester 2	15	75
Parity		
Primigravida	13	65
Multigravida	6	30
Grandegravida	1	5

Table 2. Frequency distribution of nausea and vomiting before and after being given "Gummy Mandjah" at Lubuk Baja Community Health Center, Batam

Frequency of Nausea and Vomiting (PUQE score)	Frequency (n)	Percentage (%)
Before		
Mild (≤ 6)	2	10
Moderate (7-12)	18	90
Severe (13-15)	0	0
After		
Mild (≤ 6)	16	80
Moderate (7-12)	4	20
Severe (13-15)	0	0

Table 3. Nausea and vomiting before and after being given "Gummy Mandjah" at the Lubuk Baja Community Health Center, Batam

Frequency of Nausea and Vomiting	N	Mean	Δ Mean	SD	p-value
Before intervention	20	1,90		0,308	
After intervention	20	1,20	0,60	0,410	0,001

Based on Table 2, the highest percentage of frequency of nausea and vomiting before Gummy *Mandjah* was given was in the moderate emesis category (90%), and the frequency of emesis after giving Gummy *Mandjah* in the mild emesis category was 80% and in the moderate category was 20%.

It can be concluded that of the 20 respondents who were given the Gummy *Mandjah* intervention, the results showed that before the intervention, the average frequency of nausea and vomiting was 1.90; after the intervention, the average frequency of nausea and vomiting dropped to 1.20 in the lowered category (Table 3). This difference was based on the average frequency before and after receiving gummy mandjah for 14 days. These findings demonstrate a noteworthy decrease, indicating that administering Gummy *Mandjah* can lessen the incidence of nausea and vomiting in expectant mothers who suffer from emesis gravidarum.

Giving Gummy *Mandjah* to pregnant women at Lubuk Baja Community Health Center in Batam City was effective in lowering the frequency of nausea and vomiting, as evidenced by the 0.60 difference in the average frequency of these symptoms before and after the intervention (Table 4, $p = 0.001$).

4. Discussion

Frequency of Nausea and Vomiting Before and After Giving "Gummy Mandjah"

In this study, a minimum sample of 15 respondents was used, followed by 20% added to anticipate respondents who dropped out, so that the total number of respondents was 20 pregnant women. Pregnant women who have agreed to be respondents were given gummy to be consumed 2 times a day for 14 days, then evaluation control was carried out with visits and through the online group media provided. According to the study's findings, the group with the highest frequency of nausea and vomiting before administering Gummy *Mandjah* was the moderate emesis group, which included 18

individuals (90%) and 2 individuals (10%). The average frequency of nausea and vomiting following the administration of Gummy *Mandjah* was 16 pregnant women (80%), with 4 individuals falling into the mild group (20%) after the intervention lowered the mild emesis category. Pregnancy causes hormonal changes in women because there is an increase in estrogen and progesterone, and the release of the placental hormone HCG. These hormonal changes are thought to cause symptoms of dizziness, nausea, and vomiting, especially in the first trimester.¹³ This is physiological and can be managed with outpatient therapy. However, some mothers cannot handle emesis and it can cause fluid deficiency and can interfere with the mother's activities. Apart from hormonal changes, emesis gravidarum is influenced by many factors including parity, age, knowledge, and the mother's psychology.^{14,15}

The frequency of nausea and vomiting increases because pregnant women still do not know the proper and correct treatment to reduce the nausea and vomiting (emesis gravidarum) they are experiencing and there is no optimal socialization in the treatment of emesis gravidarum.¹⁵ Emesis gravidarum is nausea and vomiting that appears in the first four weeks of pregnancy and slowly disappears at twelve weeks of pregnancy.^{7,16} Cunningham (2005) proposed that pregnancy-related nausea and vomiting are a type of digestive illness that typically manifests in the morning. This is brought on by a surge in pregnancy hormones such as progesterone, estrogen, and HCG. According to this notion, hyperemesis often occurs around the sixth to twelfth weeks of pregnancy, and peak HCG levels occur during this time.^{17,18}

Genetic predisposition in addition to contributing factors such as infection, psychiatric, and hormonal. Morbidity that often occurs in pregnant women is due to psychological impacts, financial burdens, clinical complications due to nutritional deficiencies, gastrointestinal trauma, and in rare cases,

neurological damage which can influence the incidence of hyperemesis in pregnant women. In addition, an increase in the hormone progesterone causes gastric emptying to take longer, which in turn becomes a predisposing factor for nausea and vomiting in pregnant women. Many factors are thought to trigger emesis to hyperemesis in mothers, including psychosocial factors, work, and partying.^{1,4}

The therapies available for treating emesis include parenteral antiemetic administration, electrolyte replenishment, and maternal nutritional support during pregnancy.^{5,19} Treatment carried out in cases of emesis includes improving adequate nutrition, lifestyle, psychological support, and pharmacological therapy by administering intravenous fluids, thiamine, antiemesis drugs, and steroids. Non-pharmacological therapy can also be given, such as giving herbal plants such as ginger, hypnosis therapy, acupuncture, and others.²⁰⁻²²

In this study, 16 pregnant women (60%) who had nausea and vomiting after receiving Gummy *Mandjah* were in the mild emesis group. In the meanwhile, the average frequency of nausea and vomiting following the administration of Gummy *Mandjah* was 1.20, and the average difference between the two was 0.60. Therefore, it may be said that administering Gummy *Mandjah* to pregnant women who have emesis gravidarum in the first trimester can lessen the frequency of nausea and vomiting. According to the findings of the bivariate test, Gummy *Mandjah* is beneficial in lowering morning sickness in expectant mothers ($p=0.000$). This is consistent with the advantages of the product's ingredients, which include ginger, which has all of the "secretory" or "excretory" effects within. Since ginger has strong aromatic qualities, it can promote intestinal peristalsis. In this instance, ginger also has antiemetic qualities by inhibiting serotonin, which is a messenger for nausea, and increases relaxation in the digestive organs. The essential oils Zingiberene, Zingiberol, Bisabilene, Curcuma, Gingerol, Flandrene, Vitamin A, and bitter resin are all found in ginger.^{17,23} Honey is a secretion produced by bees that has extraordinary properties for increasing the body's endurance and can reduce emesis. Based on previous research, it is clear that consuming warm honey water reduces nausea and increases endurance.²⁴ Meanwhile, tamarind has flavonoids, tannin, glycoside, saponin, sodium, and calcium and is high in vitamin C, functions as an antioxidant, and can relieve nausea and vomiting.⁸

Gummy Mandjah on Reducing the Frequency of Emesis

Results of the analysis using a paired t-test showed that consuming Gummy *Mandjah* for 14 days had a significant effect on reducing emesis in pregnancy ($p=0.001$). Gummy *Mandjah* is a development by combining various herbal ingredients that we can easily find in Indonesia, consisting of honey, tamarind, and red ginger (hence

the name *Mandjah*). Honey, tamarind, and red ginger are used by most Indonesian people as herbal therapy for various types of diseases, one of which is to reduce nausea and vomiting in pregnant women.^{22,25}

The results of this study are supported by previous research which explains that there is a reduction in emesis gravidarum in first trimester pregnant women.²⁶ The results obtained were in line with research by Maidina Putri & Rewa Maframi (2022), which reported the effect of ginger candy in reducing nausea and vomiting in first-trimester pregnant women in Air Teluk Kiri Village with p-value ($p = 0.001$).²⁷

Due to its anti-vomiting qualities, pregnant women can take ginger to lessen morning sickness. Metoclopramide, a substance that causes nausea and vomiting, can be decreased by ginger. Ginger is a first choice before taking antiemetic medications because it contains essential oils, which give it a stronger flavor and a stronger scent. By promoting stomach motility and the absorption of acids and toxins, ginger's method directly affects digestion. Red ginger is thought to immediately combat nausea and vomiting by promoting a sensation of comfort in the stomach. Additionally, because zingiber, Curcuma, and gingerol's essential oils prevent from production of progesterone which causes nausea and vomiting²⁸

Fruits that contain acids such as lime, lemon, or tamarind can stimulate the formation of saliva which plays an important role in breaking down food substances in the digestive system. The flavonoids contained in tamarind can stimulate peristalsis in the stomach, making it easier to digest food, the flavonoids in tamarind also increase the production of bile, acids, and digestive juices, as well as neutralize digestive juices to help remove toxins from the body.^{8,29}

The next herbal ingredient is honey, which is believed to be able to reduce nausea and vomiting, namely honey, with the pyridoxine content in honey acting as a receptor antagonist that can suppress nausea and vomiting. Apart from that, honey also supports maintaining stamina and health during pregnancy and provides high nutritional intake for fetal growth in the womb.^{19,30}

Making gummy is a challenge because it involves several repetitions, making it difficult to guarantee that the gummy dough will turn out as planned. The ingredient list for the gummy treat in this study underwent several changes to ensure that pregnant women were receiving a safe and healthy product to consume. In addition, the limited time to collect pregnant women who are willing and meet the research criteria, and the location of the respondents is quite far away, a visit requires a long time.

Implementation of the gummy mandjah there needs to be cooperation and high awareness among health workers and pregnant women. The mother's ability to apply non-pharmacological treatment during nausea and vomiting in pregnancy, namely by

administering gummy mandjah can be separated from the mother's knowledge. Therefore, health workers must be able to provide counseling on how to reduce nausea and vomiting, namely by consuming gummy mandjah when experiencing emesis gravidarum, not just taking medication to reduce nausea and vomiting.

5. Conclusion

Giving Gummy *Mandjah* to expectant mothers who have emesis gravidarum plays a significant role in providing midwifery care and pharmaceutical treatment that can help reduce the frequency of pregnancy-related nausea and vomiting.

It is hoped that further research can use other research design methods to improve and strengthen the findings, such as using a Randomized Control Trial (RCT) or recommendation by using a design with a larger sample size and control group.

6. Author Contribution

H conceived the original idea, DMS helping write the manuscript, fabricated and helped supervise the project. RAR supervised the project and carried out the experiment.

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8. References

1. Arifin DN, Juliarti W. [Asuhan Kebidanan Pada Ibu Hamil Mual Muntah Dengan Pemberian Seduhan Jahe Emprit Di Klinik Pratama Afiyah Pekanbaru Tahun 2022](#). J Kebidanan Terkini. 2022;2(2):7.
2. Huzaima. Modul Pranikah dan Prakonsepsi Profesi Kebidanan. 2024.
3. Piñel Pérez CS, Gómez-Roso Jareño MJ, García García AB, López Galián JJ. [Severe hyperemesis gravidarum caused by Helicobacter pylori](#). Enferm Infecc Microbiol Clin. 2022;40(2):91–2.
4. Popa S, Barsan M, Caziuc A, Pop C, Muresan L, Popa L, et al. [Life-threatening complications of hyperemesis gravidarum](#). Exp Ther Med. 2021;21(6).
5. London V, Grube S, Sherer DM, Abulafia O. [Hyperemesis gravidarum: A review of recent literature](#). Pharmacology. 2017;100(3–4):161–71.
6. Huzaima, Haryati, Sri Dewi, Heroyanto, Philip RL. Pengaruh Akupresur Titik PC6 Terhadap Penurunan Emesis Ibu Hamil. Medihealth J Ilmu Kesehat dan Sains. 2023;3:66–70.
7. Chang T. [Nausea and vomiting](#). Pediatr Oncol. 2015;17:159–75.
8. Putri CRH. [The Potency and Use of Tamarindus indica on Various Therapies](#). J Ilm Kedokt Wijaya Kusuma. 2017;3(2):40.
9. O'Donnell A, McParlin C, Robson SC, Beyer F, Moloney E, Bryant A, et al. [Treatments for](#)

- [hyperemesis gravidarum and nausea and vomiting in pregnancy: A systematic review and economic assessment](#). Health Technol Assess (Rockv). 2016;20(74):vii–268.
10. Lindblad AJ, Pharmd A, Koppula S, Ccfc M. [Ginger for nausea and vomiting of pregnancy](#). Can Fam Physician. 2016;62(2):145. Available from: www.cfp.ca
11. Fatmawati A, Septianilova RS, Imansari B. [Ginger in Pregnant Women With Emesis](#). J Matern Care Reprod Heal. 2022;4(4):323–34.
12. Bahrah B, Wigunarti M. [Pengaruh Permen Jahe Terhadap Frekuensi Mual Muntah Pada Ibu Hamil Trimester I](#). Malahayati Nurs J. 2022;4(7):1689–702.
13. de Haro K, Toledo K, Fonseca Y, Arenas D, Arenas H, Leonher K. [Hiperemesis gravídica: Manejo y consecuencias nutricionales; reporte de caso y revisión de literatura](#). Nutr Hosp. 2015;31(2):988–91.
14. Retnowati Y. [Faktor - Faktor Yang Mempengaruhi Terjadinya Emesis Gravidarum Pada Kehamilan Trimester I Di Puskesmas Pantai Amal](#). J Borneo Holist Heal. 2019;2(1):40–56.
15. Simanjuntak T. [Faktor Yang Mempengaruhi Terjadinya Mual Muntah Pada Ibu Hamil Trimester I Di Puskesmas Pintu Padang Kabupaten Tapanuli Selatan Tahun 2021](#). Thesis, Universitas Aufa Royhan, 2021.
16. Heinrichs LR. [Linking olfaction with nausea and vomiting of pregnancy, recurrent abortion, hyperemesis gravidarum, and migraine headache](#). Am J Obstet Gynecol. 2002;186(5):215–9.
17. Azizah N, Kundaryanti R, Novelia S. [The Effect of Ginger Decoction on Emesis Gravidarum among Trimester I Pregnant Women](#). Nurs Heal Sci J. 2022;2(2):5–9.
18. Horn CC, Wallisch WJ, Homanics GE, Williams JP. [Pathophysiological and neurochemical mechanisms of postoperative nausea and vomiting](#). Eur J Pharmacol [Internet]. 2014;722(1):55–66. Available from: http://dx.doi.org/10.1016/j.ejphar.2013.10.037
19. Ulya IH. [Efektivitas Pemberian Seduhan Bubuk Jahe Merah Dan Madu Terhadap Mual Muntah Pada Ibu Hamil Trimester I Di Wilayah Puskesmas Kecamatan Sayung Kabupaten Demak](#). Thesis, Universitas Islam Sultan Agung Semarang, 2022.
20. Wegrzyniak LJ, Repke JT, Ural SH. [Treatment of hyperemesis gravidarum](#). Rev Obstet Gynecol. 2012;5:78.
21. Astuti E. [Penanganan Mandiri Emesis Gravidarum Pada Trimester I Di BKIA Rumah Sakit William Booth Surabaya](#). E-Journal STIKes William Booth Surabaya. 2015;1:1–43.
22. Tania AA, Yudianti I, Sendra E, Indriani R. [The](#)

- [Effect of Herbal Therapy on Emesis Gravidarum.](#) Indones J Sport Manag Phys Educ. 2022;1(1):11–38.
23. Harahap RF, Alamanda LDR, Harefa IL. [Pengaruh Pemberian Air Rebusan Jahe terhadap Penurunan Mual dan Muntah pada Ibu Hamil Trimester I.](#) J Ilmu Keperawatan. 2020;8(1):84–95.
 24. Widowati R, Muslihah S, Novelia S, Kurniati D. [Penyuluhan dan Pemberian Minuman Madu Jahe Pada Ibu Hamil Trimester Satu Dengan Emesis Gravidarum.](#) J Community Engagem Heal. 2020;3(2):163–70.
 25. Ani IP, Machfudloh M. [Literature Review: Terapi Komplementer Untuk Mengurangi Mual Muntah Pada Ibu Hamil.](#) Bhamada J Ilmu dan Teknol Kesehat. 2021;12(2):20–6.
 26. Saragih SD. [Efektivitas minuman jahe terhadap pengurangan emesis gravidarum pada ibu hamil trimester I di klinik pratama niar tahun 2019.](#) Thesis, Itokes Helvetia Medan, 2019
 27. Putri M, Maframi R. [The Effectiveness Of Ginging Ginger Candy Towards Nausea And Vomiting In Pregnant Women In Air Teluk Ki Village In 2022.](#) Sci Midwifery. 2022;10(2):2721–9453.
 28. Indrayani IM, Burhan R, Widiyanti D. [Efektifitas Pemberian Wedang Jahe Terhadap Frekuensi Mual Dan Muntah Pada Ibu Hamil Trimester I Di Kabupaten Bengkulu Utara Tahun 2017.](#) J Ilmu dan Teknol Kesehat. 2018;5(2):201–11.
 29. Lubis AYS, Abilowo A. [Pemberian Air Perasan Jeruk Nipis Madu Dalam Mengatasi Emesis Gravidarum pada Ibu Hamil.](#) Ahmar Metastasis Heal J. 2023;3(3):161–6.
 30. Kurniawati Y, Widowati R, Dahlan FM. [Efektivitas Jahe dan Madu Akasia terhadap Mual dan Muntah Ibu Hamil Trimester I.](#) J Kesehat Poltekkes Kemenkes RI Pangkalpinang. 2023;11(1):19.