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The Effect of Lime Juice and Honey Administration on Emesis Gravidarum Among First-Trimester Pregnant Women in the Working Area of UPT Puskesmas Pagat, Hulu Sungai Tengah Regency

Dessy Rizky Amelia[1], Widia Shofa Ilmiah[2]
[1]Pagat Community Health Center, Batu Benawa District, Hulu Sungai Tengah Regency, South Kalimantan, Indonesia
[2] Institut Teknologi, Sains, dan Kesehatan RS. dr. Soepraoen Kesdam V/Brawijaya, Malang, Indonesia
** Author Corresponding: dessyrizkyameliaa@gmail.com*

Abstract. Emesis gravidarum is one of the most common complaints experienced by pregnant women during the first trimester and may negatively affect nutritional intake, daily activities, and maternal well-being. Various non-pharmacological interventions have been utilized to reduce the severity of nausea and vomiting during pregnancy, including the use of lime juice and honey. This study aimed to determine the effect of lime juice and honey administration on emesis gravidarum among first-trimester pregnant women in the working area of Pagat Community Health Center, Hulu Sungai Tengah Regency. This study employed a quantitative approach using a pre-experimental one-group pretest-posttest design. The study involved 20 first-trimester pregnant women selected through total sampling. Data were collected using observation sheets and questionnaires to assess the severity of emesis gravidarum before and after the intervention. The findings showed that before the intervention, most respondents experienced severe emesis gravidarum (45.0%), while after the intervention, most respondents experienced mild emesis gravidarum (50.0%). The proportion of severe emesis gravidarum decreased from 45.0% to 15.0% following the administration of lime juice and honey. These findings indicate an improvement in the severity of emesis gravidarum after the intervention. The administration of lime juice and honey may be considered a practical, affordable, and safe complementary approach for managing nausea and vomiting among first-trimester pregnant women.

Keywords: Emesis Gravidarum; First-Trimester Pregnancy; Honey; Lime Juice; Non-Pharmacological Therapy.

1. BACKGROUND

Operating as one of the most widespread clinical discomforts encountered during the primary stages of gestation, emesis gravidarum presents a recurring obstacle that manifests chiefly through persistent nausea and vomiting throughout the first trimester. This specific maternal condition is fundamentally linked to rapid endocrinological fluctuations, most notably the sharp escalation of human chorionic gonadotropin and systemic estrogen concentrations that characterizes early pregnancy (Chandra & Galaupa, 2022). Although conventional obstetric literature frequently categorizes this emetic response as a normal physiological milestone, unmitigated nausea and vomiting routinely take a destructive toll on maternal physical well-being, baseline nutritional intake, and general quality of life (Stellata et al., 2026). Global epidemiological data indicate that approximately 70–80% of pregnant individuals experience these symptoms during early gestation, cementing it as one of the most dominant pregnancy-related clinical complaints worldwide (Wulandari et al., 2025).

The clinical severity of emesis gravidarum is highly variable across the pregnant population. While mild symptomatic expressions may not severely disrupt everyday behavioral functioning, moderate-to-severe presentations frequently trigger an acute loss of appetite, debilitating fatigue, maternal dehydration, critical electrolyte imbalances, and compromised

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nutritional status (Handayani, 2023; Purwati & Keswara, 2026). If left without timely clinical management, prolonged emetic episodes can significantly increase the risk of maternal health complications while simultaneously undercutting optimal fetal growth and embryonic development (Azis et al., 2024). Consequently, implementing effective therapeutic strategies for emesis gravidarum remains a non-negotiable prerequisite for safeguarding both maternal and fetal health outcomes throughout the course of pregnancy.

To navigate this gestational challenge, a variety of medical paradigms have been deployed, dividing interventions into distinct pharmacological and non-pharmacological categories. Although conventional antiemetic medications are frequently effective at suppressing symptoms, a considerable portion of pregnant individuals voice deep-seated apprehensions regarding the potential teratogenic risks and safety profiles of synthetic drugs during embryonic development (Carolin et al., 2020; Yuliana et al., 2024). This widespread concern has driven a sharp rise in public interest surrounding complementary and alternative treatment models in recent years. Non-pharmacological interventions are overwhelmingly preferred by patients due to their high safety margins, economic affordability, and ease of integration into daily household routines (Lestari et al., 2024; Lubis & Abilowo, 2023).

Prominent among the traditional remedies frequently utilized to mitigate gestational nausea and vomiting is the combination of lime and honey. Lime, botanically classified as Citrus aurantiifolia, contains a rich profile of vitamin C, bioactive flavonoids, and volatile essential oils that emit a highly refreshing fragrance. This specific citrus aroma is believed to directly stimulate the maternal olfactory system, triggering neural pathways that contribute to a measurable reduction in the severity of nausea (Retnaningtyas et al., 2024). Furthermore, the wide geographic availability of lime within Indonesian agrarian and urban communities makes it an exceptionally practical, low-cost option for the non-pharmacological management of early pregnancy distress.

In an identical fashion, honey functions as a powerful natural agent that has been globally utilized for its complex nutritional and therapeutic properties. Honey is naturally rich in readily absorbable carbohydrates, essential vitamins, trace minerals, potent antioxidants, and unique bioactive compounds that collectively help restore maternal energy reserves and blunt gastrointestinal discomfort. Because of its pleasant palatability and its demonstrated benefits in supporting maternal caloric intake, honey enjoys high compliance and acceptance among pregnant individuals (Alghamdi et al., 2023). When administered concurrently, the blending of freshly squeezed lime juice and pure honey may yield powerful synergistic effects, simultaneously suppressing emetic triggers while uplifting appetite and vital nutrient intake.

Historically, an array of clinical trials has validated the positive ripples that organic therapies send through early pregnancy management. For instance, empirical research by Fatimah et al. (2023) demonstrated that targeted citrus-based aromatherapeutic and dietary interventions significantly reduced the daily frequency of emetic episodes among first-trimester patients. Complementing these findings, Sari et al. (2024) determined that regular honey supplementation directly improved maternal gastrointestinal comfort and minimized distress symbols. Despite these isolated validations, rigorous empirical data evaluating the combined, simultaneous administration of lime juice and honey remain highly scarce, particularly regarding its efficacy within localized community health center networks.

A preliminary field assessment carried out on April 10, 2026, within the operational jurisdiction of the Pagat Community Health Center in the Hulu Sungai Tengah Regency, revealed that 8 out of 10 surveyed first-trimester women experienced severe nausea and vomiting exceeding 3 episodes per day, while concurrently exhibiting a total lack of structured knowledge regarding non-pharmacological options. Within this preliminary cohort, 4 respondents, or 50% of the sample, exhibited a marked decline in nutritional appetite and expressed a firm preference for organic therapies over conventional pharmaceuticals, viewing natural remedies as fundamentally safer for their unborn children. When left unmanaged, emesis gravidarum can rapidly cascade into maternal malnutrition, severe dehydration, fractured daily functionality, and adverse birth outcomes. To fill this regional data gap, the present study is systematically designed to evaluate the exact therapeutic effect of combined lime juice and honey administration on the incidence and severity of emesis gravidarum among first-trimester pregnant women within the working area of the Pagat Community Health Center, Hulu Sungai Tengah Regency.

2. LITERATURE REVIEW

Emesis Gravidarum

Recognized as a prevalent clinical phenomenon during the initial phases of gestation, emesis gravidarum manifests as a combination of nausea and vomiting that typically clusters within the first trimester. This specific condition is fundamentally driven by rapid endocrinological adaptations, most notably the sharp escalation of human chorionic gonadotropin (hCG) and systemic estrogen levels, both of which alter gastrointestinal motility and stimulate the neural pathways responsible for emetic triggers (Sari et al., 2024). Although widely categorized as a normal physiological reaction to pregnancy, unmitigated or persistent emesis gravidarum can severely compromise maternal nutritional absorption, degrade

hydration status, restrict daily behavioral functioning, and significantly reduce overall quality of life (Nurmasyithah et al., 2025).

Lime Juice

Lime, botanically classified as Citrus aurantiifolia, represents a widely accessible citrus fruit utilized extensively across traditional medicine systems as an organic countermeasure for various physical ailments. The chemical composition of lime is rich in ascorbic acid, bioactive flavonoids, citric acid, and volatile essential oils that collectively release a distinctively refreshing fragrance. This unique citrus aroma is understood to directly interact with the olfactory system, inducing a neuro-regulatory calming effect that actively aids in suppressing the clinical intensity of gestational nausea and vomiting. Given its ubiquitous market availability, financial affordability, and straightforward household preparation, lime serves as a highly practical and frequently deployed non-pharmacological strategy for mitigating emesis gravidarum (Wulandari et al., 2025).

Honey

Honey functions as a highly concentrated natural substance packed with simple carbohydrates, vital vitamins, trace minerals, essential amino acids, potent antioxidants, and an array of health-promoting bioactive elements. Throughout the gestational period, the dietary consumption of honey can play an important role in restoring maternal energy reserves, reinforcing baseline nutritional metrics, and buffering the gastrointestinal distress linked to frequent emetic episodes. Its high palatability and rich nutrient density render honey an excellent complementary intervention for expectant mothers dealing with active emesis gravidarum. Furthermore, prior clinical literature underscores that regular honey supplementation effectively fosters maternal systemic comfort and assists in reversing pregnancy-induced appetite suppression (Chandra & Galaupa, 2022).

3. RESEARCH METODH

To systematically investigate the clinical shifts in the severity of emesis gravidarum among first-trimester expectant mothers, this study was structured around a quantitative research methodology using a pre-experimental framework, specifically deploying a single-group pretest-posttest design. The overriding objective of this empirical setup was to evaluate and document any measurable changes in the frequency and intensity of maternal nausea and vomiting before the introduction of the organic remedy and directly contrast those metrics with post-intervention data. Choosing a single-group pretest-posttest architecture was scientifically appropriate because it enables the investigator to log each participant's baseline symptomatic

status under normal conditions and subsequently compare it against their physical state after completing the lime juice and honey treatment protocol.

The fieldwork for this clinical trial was carried out during the 2026 academic calendar year within the designated working boundaries of the Pagat Community Health Center, situated in the Hulu Sungai Tengah Regency of South Kalimantan, Indonesia. The target population comprised all first-trimester pregnant individuals who were actively dealing with morning sickness and officially recorded within the regional health center's database. By utilizing a total sampling technique, the final participant cohort was established at exactly 20 respondents who successfully met all the predefined inclusion criteria. For a patient to be deemed eligible for study enrollment, she had to be within her first trimester of gestation, actively experiencing emetic symptoms, demonstrating a voluntary willingness to take part in the trial, and providing signed informed consent documentation. Primary data collection was achieved through standardized observation tracking sheets and structured questionnaires, which carefully documented the baseline clinical severity of emesis gravidarum prior to the first dose and reassessed those exact parameters following the full administration of the mixed lime juice and honey solution.

Once the intervention window concluded, the gathered field data were audited for structural completeness, converted into numerical codes, and evaluated via descriptive statistical analysis methods. The operational profiles of the respondents—which captured vital demographic and obstetric variables such as chronological age, formal educational attainment, employment background, parity history, and the absolute severity metrics of emesis gravidarum across both the pre-test and post-test intervals—were mathematically organized and presented through frequencies, raw percentages, means, and standard deviations. The resulting descriptive configurations were ultimately utilized to paint a clear empirical picture of the clinical transitions and changes observed in the severity of gestational nausea and vomiting following the systematic administration of the combined lime juice and honey remedy among the 20 first-trimester pregnant women within the operational service network of the Pagat Community Health Center.

4. RESULT AND DISCUSSION

Respondent Characteristics

The characteristics of respondents included age, educational level, occupation, and parity. The distribution of respondent characteristics is presented in Table 1.

Table 1. Characteristics of Respondents (n = 20)

Variable	Category	Frequency (n)	Percentage (%)
Age	<20 years	2	10.0
	20–35 years	11	55.0
	>35 years	7	35.0
Educational Level	Elementary School (SD)	1	5.0
	Junior High School (SMP)	6	30.0
	Senior High School (SMA)	12	60.0
	Higher Education	1	5.0
Occupation	Housewife	15	75.0
	Private Employee	3	15.0
	Trader	2	10.0
Parity	Primipara	5	25.0
	Multipara	8	40.0
	Grandemultipara	7	35.0

Based on Table 1, the mean age of respondents was 30.95 years with a standard deviation of 7.409 years. Most respondents were aged 20–35 years, accounting for 11 respondents (55.0%), followed by respondents aged more than 35 years with 7 respondents (35.0%), while only 2 respondents (10.0%) were younger than 20 years. In terms of educational level, the majority of respondents had completed senior high school education, accounting for 12 respondents (60.0%). Based on occupation, most respondents were housewives, accounting for 15 respondents (75.0%). Regarding parity, most respondents were multiparous women, accounting for 8 respondents (40.0%), followed by grandemultiparous women (35.0%) and primiparous women (25.0%).

Level of Emesis Gravidarum Before Lime Juice and Honey Administration

The distribution of respondents according to the level of emesis gravidarum before the administration of lime juice and honey is presented in Table 2.

Table 2. Level of Emesis Gravidarum Before Lime Juice and Honey Administration (n = 20)

Level of Emesis Gravidarum	Frequency (n)	Percentage (%)
Severe	9	45.0
Moderate	5	25.0
Mild	6	30.0
Total	20	100.0

Based on Table 2, most respondents experienced severe emesis gravidarum before receiving the intervention, accounting for 9 respondents (45.0%). Meanwhile, 5 respondents (25.0%) experienced moderate emesis gravidarum and 6 respondents (30.0%) experienced mild emesis gravidarum. These findings indicate that a considerable proportion of first-trimester pregnant women experienced moderate to severe nausea and vomiting before the administration of lime juice and honey.

Level of Emesis Gravidarum After Lime Juice and Honey Administration

The distribution of respondents according to the level of emesis gravidarum after the administration of lime juice and honey is presented in Table 3.

Table 3. Level of Emesis Gravidarum After Lime Juice and Honey Administration

Level of Emesis Gravidarum	Frequency (n)	Percentage (%)
Severe	3	15.0
Moderate	7	35.0
Mild	10	50.0
Total	20	100.0

Based on Table 3, most respondents experienced mild emesis gravidarum after receiving lime juice and honey administration, accounting for 10 respondents (50.0%). Meanwhile, 7 respondents (35.0%) experienced moderate emesis gravidarum and only 3 respondents (15.0%) remained in the severe category.

Comparison of Tables 2 and 3 shows a decrease in the proportion of respondents experiencing severe emesis gravidarum from 45.0% before the intervention to 15.0% after the intervention. In contrast, the proportion of respondents experiencing mild emesis gravidarum increased from 30.0% before the intervention to 50.0% after the intervention. These findings suggest an improvement in the severity of emesis gravidarum following the administration of lime juice and honey among first-trimester pregnant women in the working area of Pagat Community Health Center.

Discussion

Level of Emesis Gravidarum Before Lime Juice and Honey Administration

Prior to introducing the combined mixture of lime juice and honey, a substantial portion of the participant cohort, specifically 45.0%, suffered from severe emesis gravidarum, whereas only 30.0% of the respondents presented with mild symptoms. These baseline metrics demonstrate that gestational nausea and vomiting operated as highly pervasive physiological complaints among the first-trimester expectant mothers enrolled within the study jurisdiction. The onset of emesis gravidarum during the primary phases of gestation is traditionally linked to rapid endocrinological transformations, most notably the elevated concentrations of human chorionic gonadotropin (hCG) and systemic estrogen, both of which compromise maternal gastrointestinal motility and stimulate the emetic trigger centers within the brain (Silvani et al., 2025). When left unmitigated, persistent nausea and vomiting can rapidly trigger appetite suppression, disrupt everyday behavioral functioning, and severely degrade maternal nutritional profiles.

The heavy concentration of respondents enduring moderate-to-severe emetic episodes in this inquiry aligns with historical obstetric literature, which establishes that gestational nausea and vomiting trouble the vast majority of pregnant individuals during their first trimester. As outlined by Retnaningtyas et al., (2024), these clinical symptoms typically peak during the earliest developmental stages of pregnancy, exerting a destructive toll on maternal physical

comfort and subjective quality of life. Consequently, there remains an acute need for the implementation of efficient, accessible, and safe clinical management strategies designed to suppress symptom intensity and safeguard broader maternal well-being.

Level of Emesis Gravidarum After Lime Juice and Honey Administration

Following the systematic completion of the lime juice and honey intervention protocol, the empirical data revealed a sharp decline in symptom severity. Specifically, the percentage of respondents struggling with severe emesis gravidarum dropped noticeably from 45.0% down to 15.0%, while concurrently, the proportion of expectant mothers reporting only mild discomfort expanded from 30.0% up to 50.0%. This significant redistribution of data points signals a clear clinical improvement in the overall presentation of gestational morning sickness after the administration of the organic treatment.

This measured reduction in clinical distress can be conceptually attributed to the therapeutic and biochemical properties inherent in both lime and honey. Lime is naturally packed with ascorbic acid, citric acid, bioactive flavonoids, and volatile essential oils that collectively emit a distinctively refreshing fragrance. This unique citrus aroma is understood to directly interact with the maternal olfactory system, inducing a neuro-regulatory calming effect that actively aids in suppressing the raw sensation of nausea in pregnant individuals (Purwati & Keswara, 2026). Complementing this mechanism, honey provides a dense profile of simple carbohydrates, essential vitamins, trace minerals, and potent antioxidants that work together to restore maternal energy reserves and reinforce basic nutritional intake during active emetic cycles (Azis et al., 2024; Damayanti, 2022). Blending these two natural ingredients therefore offers a practical mechanism for enhancing systemic maternal comfort throughout early gestation.

Effect of Lime Juice and Honey Administration on Emesis Gravidarum

Directly contrasting the pre-intervention and post-intervention data highlights a substantial reduction in the percentage of patients enduring severe emesis gravidarum, alongside a corresponding increase in those experiencing mild symptoms. These positive operational shifts suggest that the systematic administration of a lime juice and honey solution actively contributed to lowering the clinical intensity of morning sickness among first-trimester pregnant women. Although this investigative phase relies primarily on descriptive statistical configurations, the visible symptomatic turnaround supports the clinical viability of lime juice and honey as a helpful, non-pharmacological complementary intervention for the management of early pregnancy distress.

These field discoveries match the conclusions of prior empirical inquiries that reported favorable outcomes from citrus-based applications and dietary honey supplementation during pregnancy. For instance, Stellata et al., (2026) confirmed that targeted citrus interventions successfully lowered the daily frequency of nausea and vomiting among expectant mothers, while Sari et al. (2024) demonstrated that regular honey intake significantly minimized gastrointestinal distress and improved maternal comfort. The current outcomes extend further empirical backing to the integration of natural, low-cost, and highly accessible interventions within standard maternal healthcare models, particularly inside localized community health center environments.

Nevertheless, despite these highly encouraging results, this study is bounded by a couple of structural limitations. The relatively modest size of the participant sample and the total absence of a parallel control group restrict the investigator's capacity to firmly declare direct causal trajectories or confidently generalize these insights back to a broader national population. To address these limitations, future researchers are highly encouraged to execute rigorous experimental frameworks featuring larger participant samples and randomized control groups to definitively calibrate the clinical efficacy of lime juice and honey solutions in mitigating emesis gravidarum among pregnant populations.

5. CONCLUSION AND RECOMENDATION

Conclusion

The empirical evidence gathered through this investigation indicates a clear downward shift in the clinical severity of emesis gravidarum among first-trimester expectant mothers following the systematic administration of a combined lime juice and honey solution. Prior to the implementation of this organic protocol, the baseline data showed that a substantial portion of the participant cohort endured severe emetic episodes. However, the post-intervention landscape demonstrated a noticeable turnaround, with the structural majority reporting a transition to only mild symptoms. This distinct reduction in severe clinical presentations, combined with a corresponding expansion in the mild category following the treatment, highlights the therapeutic potential of utilizing lime juice and honey as a practical, safe, and non-pharmacological mechanism for mitigating gestational nausea and vomiting during early pregnancy.

Recommendations

Grounded in these descriptive outcomes, maternal healthcare practitioners—most notably regional midwives and community health workers—are highly encouraged to integrate

structured patient education regarding safe, affordable, and readily available non-pharmacological alternatives for morning sickness management into standard prenatal care models. Expectant mothers navigating early-stage gestation may similarly view the combination of lime juice and honey as a reliable complementary treatment strategy to soothe recurring emetic triggers.

Nevertheless, the scope of this study was bounded by specific operational constraints, including a modest sample size and the complete omission of a randomized control group, both of which inherently limit the immediate generalizability of the findings back to broader obstetric populations. To overcome these limitations, future clinical inquiries should deploy more rigorous experimental designs that incorporate significantly expanded participant registries and active comparison groups, thereby providing a more robust empirical baseline to fully evaluate the clinical efficacy of this natural intervention against gestational distress.

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