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Comprehensive antenatal midwifery care for a primigravida with nausea and vomiting of pregnancy at 11–12 weeks of gestation: A case study

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Abstract:

Nausea and vomiting of pregnancy (NVP) affect most women in the first trimester and, although often physiological, can reduce nutritional intake, quality of life, and daily functioning. This case study aimed to describe comprehensive antenatal midwifery care for a primigravida with NVP in a primary health care setting in Indonesia. A descriptive single-case design was used and reported according to the CARE guidelines. Mrs. A (G1P0000, 11–12 weeks of gestation) received care at Sambi Community Health Center, Kediri Regency, between 8 September and 4 October 2024, guided by Varney's seven-step midwifery management and SOAP notes. Data came from interviews, observation, physical examination, and medical records, and were analyzed descriptively against care standards and recent evidence. The NVP was assessed as mild and physiological. Care included dietary counseling, oral hygiene, continued vitamin B6, peppermint or lemon aromatherapy, danger-sign education, family support, and collaboration with a nutritionist. All planned interventions were implemented, and evaluation showed improved maternal condition, knowledge, and awareness of nutritional needs. Structured, mainly non-pharmacological, collaborative midwifery care is feasible for mild NVP in primary care; standardized severity scoring is recommended in future cases.

Keywords:
nausea and vomiting of pregnancy; emesis gravidarum; midwifery care; first trimester; case study

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INTRODUCTION

Nausea and vomiting of pregnancy (NVP) are one of the most common conditions of early pregnancy. It affects up to 70% of pregnant women, and its most severe form, hyperemesis gravidarum (HG), is reported in 0.3–10.8% of pregnancies (Fejzo et al., 2019). Recent surveys show how widespread the problem is: more than 90% of 535 Chinese women reported some NVP, with nausea the dominant symptom (Zou et al., 2024), and 94.1% of 591 Saudi women reported NVP

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at some time in pregnancy (Alkhudair et al., 2023). The common name "morning sickness" is misleading, because symptoms can occur at any time of day.

NVP is not only a physical complaint. In a Finnish cohort, about half of the women had moderate NVP (52.3%), 30.0% had mild NVP, and 6.4% had severe NVP; women with more severe symptoms reported poorer sleep and lower physical and mental quality of life (Laitinen et al., 2021). In the Saudi survey, NVP strongly affected daily activities in 45.4% of women (Alkhudair et al., 2023). Severe disease can cause dehydration, nutritional deficiency, and weight loss, and it requires thiamine replacement to prevent serious complications such as Wernicke encephalopathy (Fejzo et al., 2019; O'Donnell et al., 2016). At the same time, mild NVP limited to early pregnancy has been linked to better pregnancy outcomes, suggesting that mild symptoms need not signal a problem (Emmott, 2024).

The cause of NVP is still being clarified. Earlier explanations pointed to rising levels of human chorionic gonadotropin (hCG) and estrogen. More recent genetic and physiological work instead highlights growth differentiation factor 15 (GDF15), a hormone made mainly by the fetus and placenta. Higher GDF15 in maternal blood is associated with vomiting in pregnancy, and women who are less exposed to GDF15 before pregnancy appear to be more sensitive to it and more likely to develop HG (Fejzo et al., 2024). Genetic studies have also questioned a direct role for hCG (Fejzo et al., 2019). Symptoms are ultimately mediated by the vomiting center in the medulla, which receives signals from the gut, the vestibular system, the cortex, and the chemoreceptor trigger zone (Heckroth et al., 2021). These findings help midwives explain to women why NVP happens and why it is not caused by anything they did.

Management follows a stepwise approach. For most women, dietary and lifestyle measures are enough, and vitamin B6 (pyridoxine), with or without doxylamine, is the usual first-line drug when symptoms need treatment (American College of Obstetricians and Gynecologists [ACOG], 2018; Fejzo et al., 2019). The evidence for individual treatments is, however, modest. A Cochrane review of 41 randomized trials involving 5,449 women found that effects were inconsistent and that there was no high-quality evidence to support one specific intervention (Matthews et al., 2015). A later meta-analysis of 33 trials suggested that complementary therapies, such as ginger and acupuncture, may relieve NVP and are generally safe (Tan et al., 2023). Ginger appears to reduce nausea more than placebo, although not vomiting (Viljoen et al., 2014). Inhaled lemon oil reduced nausea and vomiting in a randomized trial of 100 women (Yavari Kia et al., 2014), whereas peppermint oil performed no better than placebo in another trial (Joulaeerad et al., 2018). Diet-based strategies, including regular protein intake and attention to hydration and blood-sugar stability, are also being reviewed (Rondanelli et al., 2025).

Because most women with NVP are cared for outside hospitals, midwives in primary care have a central role. They assess severity, provide nutritional and self-care advice, recognize early danger signs, and involve other professionals when needed. A standard severity tool, such as the 24-hour Pregnancy-Unique Quantification of Emesis (PUQE-24), can support this work (Ebrahimi et al., 2009) and has shown stable measurement properties in both first-time and repeat mothers (Hada et al., 2021). Still, most published evidence comes from trials or surveys, and detailed descriptions of how a midwife delivers structured, step-by-step care in an Indonesian health center are scarce. Single-case studies can fill this gap because they show the reasoning,

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actions, and results of care in real settings, and the case-study format has been used in Indonesia to describe interprofessional collaboration in patient care (Afandi et al., 2023).

This study therefore aimed to describe comprehensive antenatal midwifery care, based on Varney's management process, for a primigravida with NVP at 11–12 weeks of gestation at Sambi Community Health Center, Kediri Regency, and to discuss how the care compares with current evidence.

METHODS

A descriptive single-case study was used to provide an in-depth account of midwifery care for a pregnant woman in a real-world primary care setting. The report follows the CARE (Case Report) guidelines (Gagnier et al., 2014). Care was organized using Varney's seven-step midwifery management, namely data collection, data interpretation, identification of potential diagnoses or problems, immediate action or collaboration, planning, implementation, and evaluation (Varney et al., 2004). Progress was documented with SOAP (subjective, objective, assessment, plan) notes.

The case was managed at the maternal and child health (KIA) polyclinic of Sambi Community Health Center, Kediri Regency, East Java, Indonesia, from 8 September to 4 October 2024. It is a primary health care facility that provides routine antenatal care. The participant was Mrs. A, a primigravida (G1P0000) at 11–12 weeks of gestation (11 weeks 2 days at assessment) who attended the KIA polyclinic and was diagnosed with NVP in the first trimester. Her identity is protected by using initials only.

Data were gathered from four sources to allow triangulation: (1) interviews with Mrs. A and her family to obtain subjective data such as symptoms, eating patterns, and daily impact; (2) interviews with the health workers involved in her care; (3) direct observation and physical examination to obtain objective data; and (4) review of her antenatal records. A literature review was carried out to anchor the diagnosis, plan, and discussion in current evidence. Instruments were the maternal assessment form, the Varney management form, and SOAP progress notes used at the health center.

The data were analyzed qualitatively and descriptively. For each Varney step, the findings were summarized and compared with midwifery care standards and published evidence to assess whether practice and theory were congruent, and to note any gaps. Results are reported as narrative text and summary tables. The study followed the ethical principles of the Declaration of Helsinki. Mrs. A was informed about the purpose of the case study, and her voluntary informed consent was obtained before her data were used for publication. Confidentiality was protected by anonymization.

RESULTS

The case was analyzed using Varney's seven-step management process, from assessment to evaluation. Table 1 summarizes the findings at each step, and Table 2 lists the care components that were planned and delivered.

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Table 1. Summary of midwifery management for Mrs. A according to Varney's seven steps

Varney step	Findings and actions
1. Data collection	Subjective: nausea and vomiting during the first trimester, obtained by interview. Objective: observation, physical examination, and record review; condition assessed as mild, physiological NVP.
2. Interpretation of data	Diagnosis: G1P0000, 11–12 weeks of gestation, with NVP. Problem: NVP. Need: IEC on managing NVP.
3. Potential problems	Risk of inadequate nutritional intake and dehydration if symptoms persist; need for continued monitoring.
4. Immediate action / collaboration	Immediate action was not required for mild, physiological NVP. Collaboration with a nutritionist to optimize food choices.
5. Planning	Six-part plan: small frequent meals, oral hygiene, vitamin B6, aromatherapy, avoiding saturated fat, documentation.
6. Implementation	All interventions delivered as planned, without deviation, together with dry biscuits before rising, danger-sign education, and family support.
7. Evaluation	Improved maternal condition, knowledge, and awareness of nutritional needs and of the risks of inadequate intake.

Note. NVP = nausea and vomiting of pregnancy; IEC = information, education, and communication.

Subjective data were obtained by interview. Mrs. A, a primigravida, reported nausea and vomiting during the first trimester. Together with the observation, physical examination, and record review, these data led to the interpretation that she had NVP of mild, physiological character. The obstetric diagnosis was G1P0000 at 11–12 weeks of gestation with NVP. The identified problem was NVP itself, and the main need was information, education, and communication (IEC) to help her manage the condition during pregnancy.

The care plan had six parts: (1) meeting nutritional needs by eating small portions frequently, 6–7 times a day; (2) maintaining oral hygiene after vomiting by rinsing with water, brushing with a mild mint-flavored toothpaste, or using mouthwash; (3) continuing vitamin B6 once a day; (4) inhaling peppermint or lemon aromatherapy; (5) avoiding foods high in saturated fat; and (6) documenting all interventions and observations. Dry biscuits before rising, education on danger signs, family involvement, and collaboration with a nutritionist were also part of care. Implementation followed the plan efficiently and safely, with no deviations, and all planned interventions were carried out (Table 2).

Table 2. Care components planned and delivered to Mrs. A

Care component	Content delivered	Status
Nutritional counseling	Small portions 6–7 times a day; dry biscuits before rising	Implemented
Oral hygiene	Rinse with water after vomiting; brush with mild mint toothpaste or use mouthwash	Implemented
Vitamin B6	Continue once daily	Implemented
Aromatherapy	Inhale peppermint or lemon aroma	Implemented
Dietary avoidance	Avoid foods high in saturated fat	Implemented
Education and support	Danger signs (persistent vomiting, dehydration, marked weight loss); family involvement	Implemented
Collaboration	Nutritionist input on food choices	Implemented
Documentation	All interventions and observations recorded in SOAP notes	Implemented

Note. SOAP = subjective, objective, assessment, plan.

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At evaluation, Mrs. A's condition had improved, and her understanding of NVP, of her nutritional needs, and of the risks of inadequate food intake had increased. She understood how to manage nausea and vomiting and which danger signs should prompt medical attention.

DISCUSSION

This case shows that mild physiological NVP in a primigravida can be safely managed at a health center by a midwife using a clear stepwise process. The combined care included diet, mouth care, vitamin B6, aroma inhalation, education, and teamwork, and it led to better condition and knowledge at the evaluation. The approach matches current guidance, which places dietary and lifestyle measures first and keeps drugs for women who need them (ACOG, 2018; Fejzo et al., 2019). It also fits the broader view that most women with NVP can be helped without hospital care (O'Donnell et al., 2016).

NVP is commonly attributed to pregnancy hormones, and this remains a reasonable plain-language message for women. The science behind it, however, has moved. The traditional explanation of rising hCG and estrogen is now being complemented by evidence that fetal GDF15 and the mother's own sensitivity to it are major determinants of symptoms (Fejzo et al., 2024), while direct links with hCG are less certain (Fejzo et al., 2019). For counseling, the key point is unchanged: NVP is a recognized pregnancy response, not a result of the woman's behavior. It is also often reassuring, because mild NVP limited to early pregnancy has been associated with favorable outcomes (Emmott, 2024).

Mrs. A's symptoms were mild, yet it would be wrong to treat them as trivial. Surveys in Asia and the Middle East show that NVP is very common and disrupts daily activities for a large share of women (Alkhudair et al., 2023; Zou et al., 2024). Quality of life and sleep fall as severity rises (Laitinen et al., 2021). Early attention is also practical. A trial of preemptive treatment found that starting care before symptoms became severe reduced HG in women who had suffered it in a previous pregnancy (Maltepe & Koren, 2013). Our case was not a high-risk case, but it supports the same principle: first-trimester contact is a good time to teach, set a baseline, and agree on when to return.

Eating small portions 6–7 times a day, taking dry biscuits before getting up, and avoiding fatty food are the core of the dietary plan. The logic is simple: an empty stomach and a heavy, greasy meal can both worsen nausea. Recent reviews support a gradual, steady approach to eating that protects hydration and blood-sugar stability and that favors protein, fruit, and vegetables (Rondanelli et al., 2025). We should be honest that evidence for specific foods is limited, and a Cochrane review found no high-quality trial to recommend one dietary rule over another (Matthews et al., 2015). Advice, therefore, must be individual and based on what Mrs. A can tolerate. Collaboration with a nutritionist helped Mrs. A to make more informed food choices suited to her pregnancy.

Mouth care after vomiting was also part of the plan. No source we reviewed tested this step on its own, but it is low-risk, easy to teach, and helps comfort. Writing such practical measures into the care plan completes and makes midwifery care acceptable to the woman. Vitamin B6 is a long-standing first-line option because it is simple to use and is considered safe in pregnancy at

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recommended doses (ACOG, 2018). Reviews, however, describe the evidence for B6 alone as limited (Matthews et al., 2015), so it should be viewed as one part of a package rather than a cure. In our case, the dose and product were not recorded, creating a documentation gap that should be closed in future cases to ensure intake stays within recommended limits.

For aromatherapy, Mrs. A was advised to inhale peppermint or lemon essential oils. The evidence is not equal for the two. In a double-blind trial, inhaled lemon oil lowered nausea and vomiting scores compared with placebo (Yavari Kia et al., 2014), whereas in a trial of peppermint oil, scores fell in both the peppermint and placebo groups with no clear difference between them (Joulaeerad et al., 2018). Complementary therapies, as a group, seem to relieve NVP and be safer than conventional drugs (Tan et al., 2023). Based on this, lemon would be the better first suggestion, and peppermint can remain an option if the woman prefers it, since using a pleasant scent may itself bring comfort. Ginger is a further low-risk choice that was not used here. It improves nausea more than placebo and appears safe in pregnancy (O'Donnell et al., 2016; Viljoen et al., 2014).

Teaching Mrs. A and her family about danger signs may be the most important protective step. HG is uncommon but can cause dehydration, weight loss, and nutritional deficiencies and requires prompt treatment (Fejzo et al., 2019). Women who know when to seek help, such as when vomiting is persistent, food and fluids cannot be kept down, or weight falls markedly, are more likely to come early. The improved understanding at evaluation is consistent with effective teaching. Family support adds value because family members share meals and can help the woman apply the advice at home.

Collaboration with a nutritionist shows how interprofessional work can extend a midwife's care without taking over her role. Interprofessional collaboration has also been described in an Indonesian case study of diabetes care (Afandi et al., 2023). For NVP, the same logic supports clear referral pathways and, in severe cases, day care or specialist services (O'Donnell et al., 2016).

Another important consideration is the need to individualize care and monitor symptoms over time. Although Mrs. A improved with dietary advice, vitamin B6, aromatherapy, and education, responses to these measures may differ between women. Midwives should reassess the frequency of nausea, vomiting episodes, fluid intake, weight changes, and daily functioning at follow-up visits. If symptoms persist or worsen, further assessment is needed to identify dehydration, nutritional problems, or possible hyperemesis gravidarum and to determine whether additional treatment or referral is required (ACOG, 2018; Fejzo et al., 2019). This approach supports early intervention while avoiding unnecessary treatment in women with mild symptoms.

Three practical lessons arise. First, use a stepwise framework such as Varney's process, because it keeps assessment, planning, and evaluation linked and makes the reasoning visible. Second, measure severity. The PUQE-24 takes only a few minutes, gives a score that can be repeated at each visit (Ebrahimi et al., 2009), and has stable properties in first-time and repeat mothers (Hada et al., 2021). Used at baseline and follow-up, it would turn a statement such as "improved" into a number that others can check. Third, match advice to the evidence: diet and education for all; B6 and a trial of lemon or ginger for symptomatic women; and early referral when symptoms are not mild.

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An additional consideration is the importance of continuity of care throughout the first trimester. NVP symptoms can affect hydration, nutritional intake, sleep, emotional well-being, and daily activities, even when they are not severe enough to require hospital treatment (Laitinen et al., 2021; Zou et al., 2024). Midwives should therefore provide follow-up that considers both physical symptoms and their impact on the woman's quality of life. Simple strategies, such as keeping a symptom diary, identifying food and smell triggers, and maintaining adequate fluid intake, may help women recognize patterns and adjust their daily routines. Family members can support these efforts by helping prepare tolerated meals and recognizing warning signs. This person-centered approach complements clinical assessment and encourages women to seek further care when symptoms interfere with eating, drinking, or daily functioning (ACOG, 2018; O'Donnell et al., 2016).

The strengths of this report are its clear structure, its use of multiple data sources, and its linking of each action to current evidence. Several limitations should be kept in mind. This is a single case, so the results cannot be generalized, and no causal claim can be made; improvement may partly reflect the natural course of NVP, which often eases after the first trimester. No standardized severity score was used, so "mild" and "improved" rest on clinical judgment. The follow-up period was short, vitamin B6 dose was not documented, and the woman's own experience of the care was not formally reported. Future work should use PUQE-24 at baseline and follow-up, record doses, follow women until symptoms resolve, and include patient-reported experience in small case series.

CONCLUSION

Comprehensive, stepwise midwifery care based on Varney's management was feasible and well received for a primigravida with mild NVP at 11–12 weeks of gestation in a primary health center. Dietary counseling, oral hygiene, vitamin B6, aromatherapy, danger-sign education, family support, and collaboration with a nutritionist were delivered as planned and were associated with improved maternal condition, knowledge, and awareness of nutritional needs. Because this is a single case without a standardized severity score, the findings are illustrative rather than conclusive; nevertheless, they support wider use of structured, mainly non-pharmacological care in which severity is measured with a tool such as the PUQE-24, advice is matched to current evidence, and women are taught when to seek urgent help.

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