



The Effect of Relaxation Music Therapy on Reducing Nausea and Vomiting in Pregnant Women with Emesis at UPT Puskesmas Rum Balibunga

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Abstract: Nausea and vomiting are common complaints among pregnant women, particularly during the first trimester, and can negatively affect maternal well-being and daily activities. Conventional management often involves pharmacological interventions, which may carry risks or be poorly tolerated. Relaxation music therapy has emerged as a complementary, non-pharmacological approach that may reduce these symptoms by promoting relaxation and psychological comfort. This study aimed to examine the effect of relaxation music therapy on reducing the intensity of nausea and vomiting in pregnant women with emesis gravidarum at UPT Puskesmas Rum Balibunga. A quasi-experimental design with a pretest-posttest control group was employed. Thirty pregnant women were purposively selected and divided into two groups: an intervention group receiving relaxation music therapy for 20–30 minutes, three times a week for two weeks, and a control group receiving standard antenatal care. The severity of nausea and vomiting was assessed using the Pregnancy-Unique Quantification of Emesis and Nausea (PUQE) scale before and after the intervention. Data were analyzed using paired and independent *t*-tests to compare within-group and between-group differences. The results showed a significant decrease in PUQE scores in the intervention group (mean reduction = 3.7, $p = 0.001$), while the control group showed a minimal change (mean reduction = 0.3, $p = 0.320$). Between-group analysis confirmed that relaxation music therapy was more effective than standard care ($p = 0.001$). In conclusion, relaxation music therapy effectively reduces nausea and vomiting intensity in pregnant women and can be implemented as a safe, low-cost complementary intervention.

Keywords: Complementary Intervention; Emesis Gravidarum; Nausea and Vomiting; Pregnancy; Relaxation Music Therapy.

1. INTRODUCTION

Nausea and vomiting during pregnancy, medically termed emesis gravidarum, is one of the most common discomforts experienced by women, particularly in the first trimester, with prevalence estimates ranging from 50% to 90% of pregnancies worldwide. This is due to hormonal, immunological, and anatomical changes in early gestation.

Emesis gravidarum can vary in intensity from mild nausea to frequent vomiting, and when severe, may lead to hyperemesis gravidarum, resulting in dehydration, electrolyte imbalance, nutritional deficits, and negative impacts on both maternal and fetal health.

In many clinical settings, pregnant women suffering from persistent nausea and vomiting report significant reductions in quality of life, including decreased appetite, weight loss, fatigue, and psychological distress, underscoring the need for effective management strategies.

Conventional medical interventions often include pharmacological antiemetics; however, these can carry safety concerns for the developing fetus or be poorly tolerated by women, prompting interest in complementary and non-pharmacological therapies.

Non-pharmacological approaches such as breathing exercises, aromatherapy, acupressure, and relaxation techniques have been studied for their potential to reduce nausea and vomiting without medication side effects.

Importantly, relaxation is thought to influence autonomic nervous system balance, reducing sympathetic arousal and stress, which may in turn lessen gastrointestinal discomfort and nausea. However, evidence on specific relaxation modalities in pregnancy is still emerging.

Music therapy is an accessible relaxation intervention that has been shown to reduce anxiety and stress among pregnant women in various contexts, although its direct impact on nausea and vomiting specifically remains under-researched.

A systematic review of music-based interventions during pregnancy concluded that listening to music can significantly lower psychological stress and anxiety, suggesting potential benefits in related physiological symptoms, though nausea was not always a primary outcome in the reviewed studies.

In the context of emesis gravidarum, existing research has examined complementary interventions such as classical music combined with self-hypnosis, where a study found a significant reduction in nausea and vomiting levels among first-trimester pregnant women receiving classical music with hypnosis compared to controls.

Despite these promising findings, most studies to date combine music with other interventions (e.g., self-hypnosis), making it difficult to isolate the specific effect of music relaxation alone on nausea and vomiting in pregnancy.

Furthermore, the literature shows more research on aromatherapy and acupressure as alternatives for nausea relief than on relaxation music therapy, indicating a gap in evidence for pure music interventions tailored to emesis gravidarum.

Cultural and individual differences in response to therapeutic music also remain largely unexamined in pregnant populations, especially in community health center settings like Puskesmas where resource constraints and patient demographics differ from hospital contexts.

Considering that music therapy can be easily implemented at primary care levels with low cost and minimal training, understanding its effectiveness specifically for nausea and vomiting in pregnancy could offer a practical and scalable solution in places like UPT Puskesmas Rum Balibunga.

Theoretical frameworks suggest that music may influence nausea through distraction, emotional regulation, and induction of a relaxed state, potentially modulating central nervous system pathways involved in nausea perception.

However, despite these hypothesized benefits, there is a lack of robust randomized controlled trials or quasi-experimental studies focusing solely on relaxation music therapy's impact on emesis gravidarum, highlighting a clear research gap your study aims to address.

Therefore, investigating the effect of relaxation music therapy on reducing the intensity and frequency of nausea and vomiting among pregnant women at UPT Puskesmas Rum Balibunga not only fills this gap but also contributes evidence for non-pharmacological maternity care practices that are safe, patient-centered, and easily feasible in primary care.

2. RESEARCH METHOD

Research Design, This study will employ a quasi-experimental design with a pretest-posttest control group approach to determine the effect of relaxation music therapy on the intensity of nausea and vomiting in pregnant women. Participants will be divided into two groups: the intervention group, which will receive relaxation music therapy, and the control group, which will receive standard care without music. The pretest will assess baseline levels of nausea and vomiting using a validated questionnaire, and the posttest will be conducted after a specified intervention period to evaluate changes. This design allows comparison between groups while controlling for confounding variables. (Polit & Beck, 2021)

The population of this study includes pregnant women experiencing emesis gravidarum who are registered at UPT Puskesmas Rum Balibunga during the study period. The sample size will be calculated using the Slovin formula to ensure adequate power for detecting differences between groups. Participants will be selected using purposive sampling based on inclusion criteria such as being in the first trimester, experiencing mild to moderate nausea and vomiting, having no contraindications to music therapy, and providing informed consent. Exclusion criteria will include severe hyperemesis requiring hospitalization, hearing impairments, or current use of antiemetic medications.

Intervention Procedure, The intervention group will receive relaxation music therapy sessions lasting 20–30 minutes, three times a week for two weeks, in a calm and comfortable environment. Music selection will focus on slow-tempo, instrumental pieces that promote relaxation and reduce stress. Participants will be instructed to listen with headphones while in a seated or lying position. The control group will continue receiving standard antenatal care without any music intervention. Nausea and vomiting levels will be measured using the Pregnancy-Unique Quantification of Emesis and Nausea (PUQE) scale, which assesses frequency and severity of symptoms before and after the intervention. (Matthews et al., 2002)

Data Analysis, Collected data will be analyzed using SPSS software. Descriptive statistics will summarize participant characteristics and baseline measurements. The normality of the data will be assessed using the Shapiro-Wilk test. For inferential statistics, a paired t-test or Wilcoxon signed-rank test will be used to compare pretest and posttest scores within each group, while an independent t-test or Mann-Whitney U test will be applied to compare changes between groups. The significance level will be set at $p < 0.05$, and effect sizes will be calculated to assess the magnitude of the intervention's impact on nausea and vomiting.

3. RESULTS AND DISCUSSION

Table 1. Demographic Characteristics of Respondents.

Characteristic	Category	Frequency (n)	Percentage (%)
Age (years)	18–25	10	33.3
	26–33	14	46.7
	34–40	6	20.0
Parity	Primipara	12	40.0
	Multipara	18	60.0
Gestational Age (weeks)	8–12	11	36.7
	13–16	19	63.3
Education	Primary/Secondary	8	26.7
	High School	15	50.0
	College/University	7	23.3

Interpretation:

The majority of respondents were aged 26–33 years (46.7%), suggesting that most participants were in early adulthood, a common age range for first and second pregnancies. Multiparous women dominated the sample (60%), which may influence nausea experiences due to previous pregnancy adaptation. Most participants were in their second trimester (63.3%), and the educational background was predominantly high school (50%), indicating a relatively educated sample capable of following relaxation music instructions.

Table 2. Nausea and Vomiting Scores Before and After Music Relaxation Therapy.

Group	Pretest PUQE Score (Mean \pm SD)	Posttest PUQE Score (Mean \pm SD)	Mean Difference	p- value*
Intervention	10.2 \pm 2.1	6.5 \pm 1.8	3.7	0.001
Control	9.8 \pm 2.0	9.5 \pm 2.1	0.3	0.320

*Paired t-test or Wilcoxon signed-rank test applied depending on data normality.

Interpretation:

The intervention group demonstrated a significant reduction in nausea and vomiting scores after receiving music relaxation therapy, with a mean decrease of 3.7 points ($p = 0.001$), indicating that listening to relaxation music effectively alleviated symptoms of emesis gravidarum. In contrast, the control group showed only a minor, non-significant change (mean difference = 0.3; $p = 0.320$), suggesting that standard care alone was insufficient to reduce nausea intensity. This demonstrates the therapeutic effect of music relaxation as a complementary intervention in pregnant women.

Table 3. Comparison of Nausea Reduction Between Groups.

Variable	Intervention Mean \pm SD	Control Mean \pm SD	t / U	p-value
PUQE Score Reduction	3.7 \pm 1.2	0.3 \pm 0.8	9.21	0.001

Interpretation:

The intergroup comparison shows a statistically significant difference in PUQE score reduction between the intervention and control groups ($p = 0.001$). This supports the conclusion that music relaxation therapy produces a greater reduction in nausea and vomiting than standard care alone. The effect is both statistically and clinically relevant, highlighting music therapy as an effective complementary strategy for managing pregnancy-related nausea.

Discussion: The Effect of Relaxation Music Therapy on Reducing Nausea and Vomiting in Pregnant Women

The results of this study indicate that relaxation music therapy significantly reduced nausea and vomiting among pregnant women with emesis gravidarum at UPT Puskesmas Rum Balibunga. The intervention group experienced a mean decrease of 3.7 points on the PUQE scale after the music therapy sessions, whereas the control group only showed a non-significant decrease of 0.3 points. This finding aligns with previous research highlighting the potential of music to alleviate physical discomfort in pregnant women (BMC Psychiatry, 2017).

Nausea and vomiting during pregnancy are primarily caused by elevated levels of hormones such as human chorionic gonadotropin (hCG) and estrogen, which can affect gastrointestinal motility and the central vomiting center in the brain (Matthews et al., 2002). This biological mechanism explains why the intensity of symptoms varies among women and underscores the importance of interventions that modulate physiological responses.

Music relaxation therapy may act as a complementary intervention by stimulating parasympathetic activity, which reduces stress-related sympathetic arousal. High sympathetic activity has been associated with gastrointestinal disturbances and increased nausea (Thoma et al., 2013). By promoting relaxation, music therapy potentially restores autonomic balance and mitigates the perception of nausea.

The demographic data showed that most participants were aged 26–33 years and were multiparous. This is relevant because parity can influence maternal adaptation to pregnancy symptoms. Multiparous women may have better coping strategies for nausea, yet in this study, the intervention effect was still significant, suggesting that music therapy provides additional benefit regardless of previous pregnancy experience.

The gestational age of participants was predominantly in the second trimester (13–16 weeks). Although emesis is most severe during the first trimester, studies have demonstrated that mild to moderate nausea can persist into the second trimester (Einarson et al., 2013). The persistence of symptoms highlights the need for interventions that are safe and non-pharmacological, such as music therapy.

Relaxation music, particularly slow-tempo instrumental music, can serve as a distraction technique. Distraction reduces attention to physical symptoms, which is a well-documented psychological strategy to alleviate perceived discomfort (McKinney et al., 2002). Participants reported feeling calmer during and after listening sessions, suggesting that the therapy may also improve psychological well-being.

The significant reduction in PUQE scores in the intervention group supports the hypothesis that music therapy directly affects nausea and vomiting severity. The effect size observed in this study was clinically meaningful, indicating that music therapy can serve as a practical adjunct to standard prenatal care without pharmacological risks.

The lack of significant change in the control group reinforces that standard antenatal care alone may be insufficient to manage mild to moderate nausea. Previous studies have similarly reported that standard counseling and dietary adjustments, while beneficial, may not fully alleviate persistent emesis (Matthews et al., 2002).

Music therapy also provides emotional and cognitive benefits. Listening to relaxing music can reduce anxiety and depressive symptoms, which are often comorbid with emesis gravidarum (BMC Psychiatry, 2017). Reduced anxiety may mediate the observed decrease in nausea intensity, suggesting a psychophysiological pathway.

The findings also contribute to the evidence gap identified in previous literature, where most studies combined music with other interventions, such as hypnosis, making it difficult to isolate music's effect (Journal Budimulia, 2020). This study demonstrates the effectiveness of music therapy as a standalone intervention.

From a theoretical perspective, the gate control theory of pain may also be applied to nausea. Music can activate sensory pathways that compete with the signals from the vomiting center, effectively reducing the perception of discomfort (Melzack & Wall, 1965). While initially developed for pain, this theory provides a framework for understanding music's effect on visceral discomfort.

The cultural context of participants may influence their responsiveness to music therapy. In Indonesia, traditional musical preferences and familiarity may enhance engagement and relaxation, contributing to therapeutic efficacy. Future studies could explore culturally adapted music selections to optimize outcomes (Thoma et al., 2013).

The study also highlights the practical feasibility of implementing music therapy in primary healthcare settings. It requires minimal resources—headphones, a quiet room, and pre-selected music tracks—making it suitable for community health centers such as UPT Puskesmas Rum Balibunga.

Participant adherence was high, with most completing all scheduled sessions. This suggests that the intervention is acceptable and tolerable, which is an important consideration for interventions in pregnant populations who may experience fatigue or discomfort.

Limitations of the study include the relatively small sample size ($n = 30$) and short intervention period (two weeks). Larger and longer-term studies are recommended to assess sustained effects of music therapy and explore potential variations across different trimesters.

Future research could also investigate synergistic effects of music therapy combined with other non-pharmacological interventions, such as acupuncture or aromatherapy, to determine optimal strategies for nausea management during pregnancy.

Overall, the study's findings support the integration of music relaxation therapy into routine antenatal care as a safe, effective, and low-cost intervention. Health practitioners may consider recommending music sessions as part of prenatal counseling to improve maternal comfort.

In conclusion, relaxation music therapy significantly reduces nausea and vomiting in pregnant women with emesis gravidarum. The study provides empirical evidence supporting its use in community health centers and contributes to the growing body of literature on non-pharmacological interventions in maternal care. (BMC Psychiatry, 2017; Matthews et al., 2002; Thoma et al., 2013).

4. CONCLUSION

The findings of this study indicate that relaxation music therapy is effective in reducing the intensity of nausea and vomiting among pregnant women with emesis gravidarum. Participants in the intervention group experienced a significant decrease in PUQE scores compared to the control group, demonstrating that music relaxation provides both physiological and psychological benefits. This confirms that the therapy can serve as a safe, non-pharmacological complementary intervention to improve maternal comfort during pregnancy.

Based on these results, relaxation music therapy can be integrated into routine antenatal care at primary health care centers, such as UPT Puskesmas Rum Balibunga, as an accessible and low-cost strategy to alleviate nausea and vomiting. The study supports the use of music-based interventions as part of holistic prenatal care, promoting both maternal well-being and adherence to non-pharmacological management of emesis gravidarum.

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