Media of Health Research
Vol. 3 No. 1, April 2025, pages: 30-38
e-ISSN 2987-7784
DOI: https://doi.org/10.70716/mohr.v3i1.141

Study on the Effect of Prenatal Gentle Yoga Poses on the Level of Discomfort during the First Trimester of Pregnancy

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Article History

Manuscript submitted:
22 January 2025
Manuscript revised:
13 April 2025
Accepted for publication:
21 April 2025
Manuscript published:
28 April 2025

Keywords

prenatal gentle yoga,
first trimester pregnancy,
discomfort,
relaxation,
well-being

Abstract

This study aims to examine the effect of prenatal gentle yoga poses on the level of discomfort experienced by pregnant women in the first trimester. The first trimester of pregnancy is often accompanied by physical symptoms such as nausea, dizziness, and fatigue, which can affect the quality of life of pregnant women. Gentle yoga, with a focus on calm breathing, gentle movements, and relaxation, is known to provide physical and mental benefits. The research method used is a quasi-experiment with pretest and posttest involving 30 pregnant women in the first trimester, divided into two groups: an intervention group that participated in prenatal gentle yoga sessions and a control group that did not receive the intervention. The study used a questionnaire to measure the level of physical discomfort before and after the intervention. The results show that the group that participated in prenatal gentle yoga experienced a significant reduction in discomfort compared to the control group. These findings suggest that prenatal gentle yoga poses can be an effective method for reducing discomfort in first-trimester pregnant women, as well as improving physical and mental well-being during pregnancy.

How to Cite: Hamidah, R., Inayah, I. M. & Safniah, R., (2025) Study on the Effect of Prenatal Gentle Yoga Poses on the Level of Discomfort during the First Trimester of Pregnancy. *Media of Health Research, 3*(1), 30–38. https://doi.org/10.70716/mohr.v3i1.141

Introduction

Pregnancy represents a pivotal stage in a woman's life, characterized by significant physiological and psychological transformations. The first trimester of pregnancy is frequently accompanied by a variety of symptoms that induce discomfort for expectant mothers, including nausea, fatigue, dizziness, and mood fluctuations. Although these symptoms are generally transient, they can have a profound impact on the quality of life, often disrupting daily activities (Nicholson *et al.*, 2006). Consequently, it is crucial to adopt interventions aimed at alleviating these discomforts in order to preserve the well-being of the pregnant individual.

One intervention that has gained considerable attention is prenatal yoga, specifically designed with gentle and safe movements suitable for pregnant women. Prenatal yoga offers numerous benefits, including enhanced flexibility, stress reduction, and the improvement of both physical and

mental equilibrium (Villar-Alises *et al.*, 2023). The practice of prenatal yoga encompasses movements tailored to accommodate the unique condition of the pregnant body, with one commonly employed variant being the gentle yoga pose. This form of yoga emphasizes deep breathing techniques, light movements, and relaxation, all of which contribute to mitigating both physical and psychological discomforts experienced during pregnancy (Chen *et al.*, 2017).

The degree of discomfort experienced during the first trimester can potentially impact the health of both the mother and the fetus if not appropriately managed. Nausea and vomiting, commonly referred to as "morning sickness," are prevalent symptoms during the first trimester that may lead to dehydration and a reduction in food intake among pregnant women (Flaxman & Sherman, 2000). Moreover, fatigue and hormonal changes can precipitate sleep disturbances and heightened anxiety, leading to increased stress levels (Fan *et al.*, 2009). As such, it is imperative to identify and implement interventions that can effectively mitigate these symptoms and enhance the comfort of the expectant mother.

Prenatal gentle yoga poses have been documented in various studies as an effective technique to reduce discomfort in pregnant women (Rakhshani *et al.*, 2010). The incorporation of gentle yoga movements, with a focus on controlled breathing, has been shown to alleviate stress, enhance blood circulation, and reduce muscle tension, thus contributing to a reduction in both physical and psychological discomforts during pregnancy. Additionally, yoga practices facilitate a heightened awareness of the pregnant woman's body, further promoting her comfort throughout the pregnancy (Vijayalakshmi *et al.*, 2019). Despite these findings, research examining the impact of prenatal yoga on discomfort during the first trimester of pregnancy remains limited, particularly within the context of Indonesia. Previous studies have suggested that yoga can improve the quality of life of pregnant women by alleviating stress and physical tension (Hajipour *et al.*, 2017). However, further, more specific studies are needed to provide robust evidence regarding the benefits of prenatal gentle yoga poses in reducing discomfort during the first trimester of pregnancy.

In light of the existing gaps in the literature, this study aims to evaluate the effects of prenatal gentle yoga poses on the level of discomfort experienced by pregnant women in the first trimester. It is anticipated that this research will provide valuable insights for healthcare professionals and expectant mothers, offering an evidence-based alternative intervention to mitigate discomfort during the first trimester of pregnancy.

This research employs a quasi-experimental design, utilizing pretest and posttest measures, and involves 30 pregnant women in their first trimester. Participants are divided into two groups: an experimental group that practices prenatal gentle yoga poses, and a control group that does not receive any yoga intervention. The level of discomfort experienced by participants will be measured prior to and following the intervention using a validated questionnaire. The results of this study are expected to provide a clear understanding of the effectiveness of prenatal gentle yoga poses in alleviating discomfort during the first trimester of pregnancy. Moreover, this study will contribute to the expansion of knowledge regarding the benefits of prenatal yoga in Indonesia, an area that remains relatively underexplored. The findings are anticipated to serve as a foundation for the promotion of healthy pregnancy practices and the enhancement of maternal well-being in Indonesia.

The benefits of this research extend beyond the individual pregnant woman; it also provides valuable insights for healthcare providers in designing holistic interventions to support maternal health. With an increased understanding of prenatal yoga, it is hoped that pregnant women will

become more proactive in maintaining both their physical and mental health throughout the course of their pregnancy.

In conclusion, this study is expected to offer a significant contribution to the understanding of the effects of prenatal gentle yoga poses on discomfort during the first trimester of pregnancy. Furthermore, it is hoped that the findings will stimulate further research in the field of prenatal yoga and maternal health, ultimately advancing the practice and promoting improved outcomes for pregnant women.

Research Methods

This study adopts a quasi-experimental design with a pretest-posttest approach to evaluate the impact of prenatal gentle yoga poses on the discomfort levels experienced by pregnant women in their first trimester. The research was conducted at a maternal health clinic in Surabaya, involving 30 pregnant women who fulfilled the inclusion and exclusion criteria. Participants were selected through purposive sampling, with the inclusion criteria specifying that participants be pregnant women in their first trimester (weeks 6 to 12), aged between 20 and 35 years, without a history of chronic diseases, and willing to engage in prenatal yoga. The exclusion criteria encompassed pregnant women with a history of pregnancy complications, mental health disorders, or physical abnormalities that would prevent them from participating in yoga sessions.

The participants were divided into two groups: an intervention group, which attended six sessions of prenatal gentle yoga poses, and a control group, which did not receive the yoga intervention. Each prenatal yoga session lasted for 30 minutes, with a two-day interval between sessions to prevent excessive fatigue among the participants. The yoga movements provided included light exercises such as stretching, deep breathing, and relaxation, all designed to alleviate both physical and mental tension and improve blood circulation. The yoga sessions were conducted by an experienced instructor certified in prenatal yoga.

The level of discomfort experienced by the pregnant women was measured using a validated questionnaire. This questionnaire consisted of two main sections: physical symptoms commonly observed during the first trimester, such as nausea, vomiting, fatigue, and dizziness, and mental symptoms including anxiety and stress. Each symptom was rated on a Likert scale from 1 to 5, where 1 indicated the absence of symptoms and 5 indicated severe symptoms. Measurements were taken at two points: before the intervention (pretest) and after the final yoga session (posttest). The data obtained from the pretest and posttest were compared to assess the discomfort levels between the two groups.

The data collection methods for this study involved structured interviews and the completion of questionnaires by the pregnant participants. Interviews were conducted at the start of the study to confirm that participants met the inclusion and exclusion criteria and to provide detailed explanations about the study's objectives and procedures. The questionnaires were administered during the pretest and posttest phases, and the completed forms were collected by the researchers for subsequent analysis.

Data obtained from the questionnaires will be analyzed using both descriptive and inferential statistical methods. Descriptive statistics will be used to outline the demographic characteristics of the participants, such as age, education level, and pregnancy status. To evaluate differences in discomfort levels between the intervention and control groups, paired sample t-tests will be applied.

This analysis aims to determine whether there is a statistically significant difference in discomfort levels between the pretest and posttest within each group. Additionally, normality tests will be conducted to ensure the data meet the assumptions of normality prior to further statistical analysis.

This study also considers the ethical dimensions of research by obtaining approval from the Health Research Ethics Committee at the university where the study was conducted. All participants were provided with comprehensive information regarding the study's purpose, procedures, and their right to withdraw from the study at any time without penalty. Written informed consent was obtained from each participant before the commencement of the study. All collected data will be kept confidential and utilized solely for the purposes of this research.

Results and Discussion

Results

This study involved 30 pregnant women in their first trimester who were proportionally assigned into two groups, namely the intervention group that participated in prenatal gentle yoga poses and the control group that did not receive any intervention. Levels of discomfort were measured before and after the intervention using a questionnaire that assessed physical and mental aspects.

Physical and Mental Discomfort Levels

Baseline measurements indicated that both groups had comparable levels of discomfort prior to the intervention. The intervention group recorded a mean physical discomfort score of 3.6 and a mental discomfort score of 3.5. The control group showed a mean physical discomfort score of 3.7 and a mental discomfort score of 3.6.

After six sessions of prenatal gentle yoga poses, a marked reduction was observed in the intervention group. The mean physical discomfort score decreased to 2.3, while the mental discomfort score declined to 2.4. In contrast, the control group showed no meaningful changes, with posttest scores remaining at approximately 3.6 for physical discomfort and 3.5 for mental discomfort.

Table 1. Mean Physical Discomfort Scores of First-Trimester Pregnant Women

Group	Pretest	Posttest
Intervention	3.6	2.3
Control	3.7	3.6

Table 2. Mean Mental Discomfort Scores of First-Trimester Pregnant Women

Group	Pretest	Posttest
Intervention	3.5	2.4
Control	3.6	3.5

Statistical analysis using the paired sample t-test demonstrated that the reductions in both physical and mental discomfort scores in the intervention group were statistically significant, with p-values less than 0.05. In the control group, no significant differences were found between pretest and posttest scores, with p-values greater than 0.05. These results indicate that prenatal gentle yoga poses have a significant effect on reducing discomfort levels among first-trimester pregnant women.

Graphical Presentation of Results

To illustrate the differences in discomfort scores, the study results are presented in bar charts as follows:

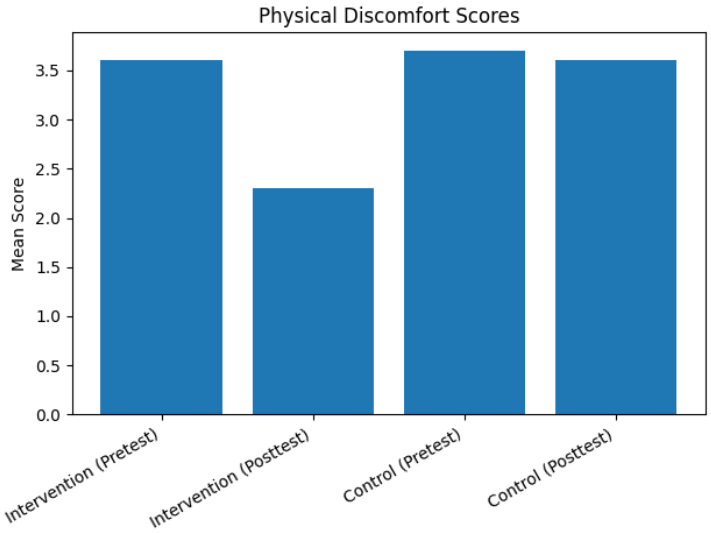

Figure 1. Mean Physical Discomfort Scores

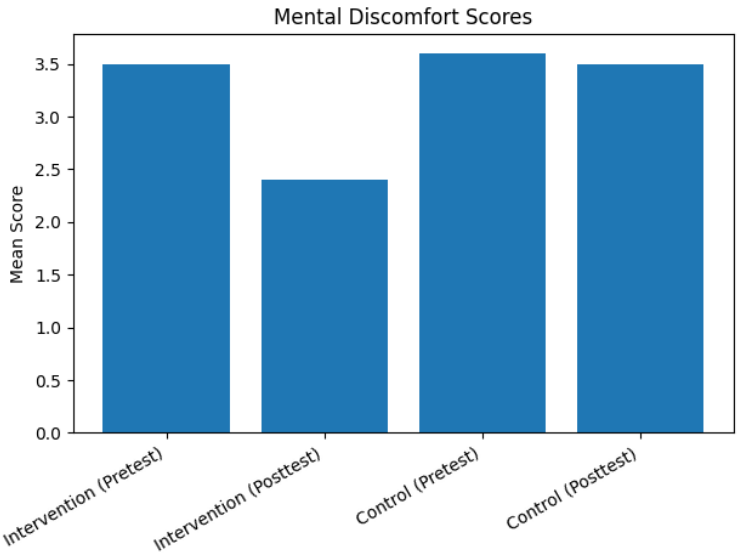

Figure 2. Mean Mental Discomfort Scores

The figures demonstrate a consistent decline in discomfort scores in the intervention group following prenatal gentle yoga poses, whereas the control group remained relatively stable.

Discussion

The results of this study indicate that prenatal gentle yoga poses can reduce physical and mental discomfort in pregnant women during their first trimester. The significant decrease observed in the intervention group suggests that prenatal yoga can serve as an effective approach to alleviate common symptoms experienced by pregnant women in the first trimester, such as nausea, vomiting,

fatigue, and stress (Villar-Alises *et al.*, 2023). This finding aligns with the report by Sari (2018), which stated that prenatal yoga helps reduce physical discomfort in pregnant women, including muscle tension, nausea, and fatigue.

Prenatal yoga offers a range of benefits for pregnant women, extending beyond the physical aspect to include mental well-being. Gentle yoga poses focus on deep breathing and gentle movements aimed at calming the nervous system and reducing muscle tension (Kundarti *et al.*, 2020). This is consistent with research by Veronica *et al.* (2020), which demonstrated that the deep breathing techniques used in prenatal yoga could alleviate stress and anxiety in pregnant women, while also enhancing overall comfort.

In the control group, which did not undergo the yoga intervention, no significant changes were observed in the level of discomfort. This suggests that, without intervention, discomfort levels in pregnant women tend to remain constant or show little change. These findings support the research by Flaxman & Sherman (2000), which stated that discomfort during the first trimester of pregnancy cannot be managed solely with conventional approaches, without proper management or intervention. Therefore, a more holistic and structured approach, such as prenatal yoga, is needed to address these issues.

Nausea and vomiting in the first trimester are often considered highly disruptive symptoms; however, prenatal yoga with gentle movements can help alleviate these conditions. In this study, the significant reduction in nausea and vomiting reported by pregnant women in the intervention group aligns with the results of research by Fan *et al.* (2021), which found that prenatal yoga can help soothe the stomach and digestive system, thus reducing nausea and other discomforts.

Moreover, this study emphasizes the importance of the mental aspect of pregnancy. High levels of anxiety and stress in pregnant women can affect their overall well-being. Prenatal yoga, involving relaxation techniques and a focus on deep breathing, can help reduce anxiety and improve the mental well-being of pregnant women (Vijayalakshmi *et al.*, 2019). The significant decrease in symptoms of anxiety and stress in the intervention group suggests that prenatal yoga can offer benefits not only for the body but also for the psychological condition of pregnant women.

The findings of this study also highlight that prenatal gentle yoga poses can increase pregnant women's body awareness regarding the physical changes occurring during pregnancy. Yoga provides an opportunity for pregnant women to pay more attention to their bodies, feel the changes taking place, and adapt to these changes in a more positive manner (Chen *et al.*, 2017). This is consistent with the research by Rakhshani *et al.* (2018), which showed that prenatal yoga enhances the connection between mothers and their bodies, helping pregnant women manage both physical and emotional changes more effectively.

Overall, this study provides evidence that prenatal gentle yoga poses are an effective intervention for reducing discomfort in pregnant women during the first trimester. This intervention not only helps alleviate physical symptoms but also reduces the levels of anxiety and stress often experienced by pregnant women in their first trimester. Therefore, prenatal yoga can be a valuable approach to improving the quality of life of pregnant women and maintaining their well-being throughout pregnancy.

However, despite the positive findings of this study, there are several limitations that should be considered. First, the sample size used in this study is relatively small, meaning the results may not be generalizable to the entire population of pregnant women in Indonesia. Second, this study only

measured discomfort levels in the first trimester and did not assess the impact of prenatal yoga in subsequent trimesters. Further research with a larger sample size and long-term measurements is needed to provide a more comprehensive understanding of the benefits of prenatal yoga throughout the entire duration of pregnancy.

Conclusion

Based on the findings of this study, it can be concluded that prenatal gentle yoga poses exert a significant influence on alleviating both physical and mental discomfort in pregnant women during the first trimester. The notable reduction in physical symptoms such as nausea, vomiting, fatigue, as well as mental symptoms including anxiety and stress in the group participating in prenatal yoga, suggests that prenatal yoga constitutes an effective intervention for enhancing the quality of life among pregnant women in the first trimester. The incorporation of deep breathing techniques and gentle movements in prenatal yoga contributes to the alleviation of muscle tension, reduction of stress, and improvement of overall physical and mental well-being.

These results indicate that prenatal yoga, particularly gentle yoga poses, represents a safe and effective alternative for managing the common discomforts encountered during the first trimester of pregnancy. Consequently, prenatal yoga should be considered as a viable approach for healthcare providers to support the health and well-being of expectant mothers. Furthermore, this study opens avenues for future research with larger sample sizes and longitudinal assessments to evaluate the effects of prenatal yoga across the entire duration of pregnancy and its broader impact on maternal well-being.

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