JURNAL KEDOKTERAN DIPONEGORO
(*DIPONEGORO MEDICAL JOURNAL*)
Online : http://ejournal3.undip.ac.id/index.php/medico
E-ISSN : 2540-8844
DOI : 10.14710/jkd (dmj).v14i4.49685
JKD (DMJ), Volume 14, Number 4, July 2025 : 204-208

THE ROLE OF KUNDALINI YOGA IN ALLEVIATING EARLY PREGNANCY DISCOMFORTS: A PRE-POST TEST EXPERIMENTAL STUDY

Qatrunnada Naqiyyah Khusmitha[1]*, Atik Farokah[2], Herdian Fitria Widyanto Putri[2]
[1] Department of Midwifery, Universitas Negeri Surabaya, Surabaya, Indonesia
[2]Department of Midwifery, Institut Ilmu Kesehatan Bhakti Wiyata, Kediri, Indonesia

Keywords:
Anxiety,
Kundalini Yoga,
Nausea and Vomiting;,
Pregnancy,
Prenatal Care

Received: 8 March 2025
Revised: 6 May 2025
Accepted: 6 May 2025
Available online: 1 July 2025

Corresponding Author:
E-mail: qatrunnadakhusmitha@unesa.ac.id

ABSTRACT

Background: Recent studies highlight the therapeutic potential of yoga and meditation in pregnancy, particularly for managing anxiety, nausea and vomiting in pregnancy (NVP). Although some clinical research has established yoga's benefits, the specific effects of Kundalini Yoga on anxiety and NVP during early pregnancy remain underexplored. **Objective:** This study examines the effectiveness of Kundalini Yoga in reducing anxiety and NVP levels among pregnant women in their first trimester. **Methods:** A true experimental study with a pre-posttest randomized controlled design was conducted. A total of 50 pregnant women attending Polindes Mancon, Nganjuk were randomly assigned to either the treatment group (receiving Kundalini Yoga intervention) or the control group (receiving standard prenatal care). Anxiety and NVP levels were measured using validated questionnaires before and after a four-week intervention period. **Results:** The treatment group exhibited significant reductions in anxiety ($p = 0.039$) and NVP levels ($p = 0.000$) compared to the control group ($p < 0.05$). Within-group analysis showed that anxiety levels significantly decreased in the treatment group ($p = 0.002$), while no significant change was observed in the control group ($p = 0.102$). Additionally, both groups demonstrated improvements in NVP from pre- to post-intervention, though the effect was more pronounced in the treatment group ($p = 0.000$) compared to the control group ($p = 0.013$, $p < 0.05$). **Conclusion:** These findings suggest that Kundalini Yoga is an effective intervention for reducing anxiety and NVP during early pregnancy, potentially improving both the psychological and physical well-being of expectant mothers. Future research should explore long-term effects and optimal implementation strategies for integrating Kundalini Yoga into prenatal care programs.

BACKGROUND

Pregnancy is a physiological process that requires significant adaptations, often leading to psychological changes, including anxiety. In Indonesia, approximately 28.7% of pregnant women experience anxiety, which can be mitigated through various relaxation techniques[1]. Anxiety during pregnancy can occur at any stage, from the first to the third trimester, and has potential negative consequences for both the mother and fetus[2]. Moreover, psychological distress, such as anxiety, has been linked to an increased severity of nausea and vomiting during pregnancy (NVP), exacerbating both physical and psychological discomfort[3].

NVP is a prevalent condition, particularly in early pregnancy, and can significantly disrupt daily life and overall well-being. While its etiology is multifactorial, the roles of family support and psychological factors remain underexplored[4]. Pharmacological treatments are often prescribed to alleviate symptoms; however, they may not be entirely effective, highlighting the need for complementary therapeutic approaches[5].

JURNAL KEDOKTERAN DIPONEGORO
(*DIPONEGORO MEDICAL JOURNAL*)
Online : http://ejournal3.undip.ac.id/index.php/medico
E-ISSN : 2540-8844
DOI : 10.14710/jkd (dmj).v14i4.49685
JKD (DMJ), Volume 14, Number 4, July 2025 : 204-208

Yoga, derived from the Sanskrit term yuj (meaning "to unite"), is a holistic practice that integrates spiritual, mental, emotional, and physical dimensions through breathing exercises (pranayama), concentration and meditation (dharana and dhyana), and physical postures (asanas). Several studies suggest that yoga provides therapeutic benefits during pregnancy by reducing anxiety, depression, and physical discomfort, as well as lowering the risk of antepartum complications and labor pain. However, further systematic research is needed to substantiate these effects[6].

Kundalini Yoga, rooted in the Tantric Yoga tradition, involves practices aimed at activating energy along the spine toward the brain. This form of meditation has been explored across various contemplative traditions, including Buddhist and Christian practices. Prior research indicates that Kundalini Yoga can improve symptoms related to post-traumatic stress, enhance sleep quality, improve stress management, elevate mood, increase resilience, and reduce anxiety compared to control groups[7].

Given these potential benefits, this study aims to evaluate the effects of Kundalini Yoga on anxiety and NVP levels in pregnant women during the first trimester.

METHODS

This study employed an experimental design to compare outcomes between control and treatment groups, both pre-and post-intervention. A total sampling technique was utilized, involving all first-trimester pregnant women attending the Polindes Mancon Nganjuk pregnancy class. Anxiety levels were assessed using the Perinatal Anxiety Screening Scale (PASS), while the frequency of nausea and vomiting during pregnancy (NVP) was measured using the Pregnancy-Unique Quantification of Emesis (PUQE-24) questionnaire. The final sample consisted of 50 participants, who were randomly assigned to either the control or treatment group.

The intervention involved daily, self-administered Kundalini Yoga sessions for the treatment group, lasting 25 minutes per session. These sessions were structured as follows: deep breathing exercises (3 minutes), basic spinal flexion exercises (11 minutes), and meditation for pregnancy (11 minutes). Certified yoga instructors provided instructional videos to guide participants through the Kundalini Yoga exercises.

Anxiety and NVP levels were reassessed after four weeks. Data analysis was conducted using the Mann-Whitney U test to compare differences between groups and the Wilcoxon Signed-Rank test to evaluate within-group changes. All statistical analyses were performed using SPSS.

RESULT

Figure 1 illustrates the distribution of anxiety levels between the control and treatment groups before and after the intervention. Prior to treatment, 17 participants (68%) in the control group were asymptomatic, 7 (28%) experienced mild-to-moderate anxiety, and 1 (4%) experienced severe anxiety. In the treatment group, 15 participants (60%) were asymptomatic, 9 (36%) had mild-to-moderate anxiety, and 1 (4%) experienced severe anxiety. After four weeks of intervention, anxiety levels changed as follows: in the control group, 21 participants (84%) were asymptomatic, 3 (12%) had mild-to-moderate anxiety, and 1 (4%) remained in a severe category. In contrast, all participants in the treatment group (100%) were asymptomatic following the intervention.

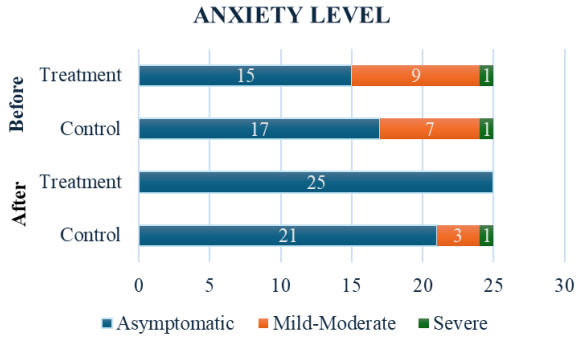

Figure 1. Anxiety Level Results Before and After Treatment

Figure 2 presents the levels of nausea and vomiting in pregnancy (NVP) among participants before and after treatment. Before the intervention, 22 participants (88%) in the control group experienced mild NVP, while 3 participants (12%) experienced moderate NVP. In the treatment group, 18 participants (72%) reported mild NVP and 7 (28%) reported moderate NVP. After four weeks of intervention, NVP levels shifted in both groups. In the control group, 2 participants (8%) were asymptomatic, 9 participants

JURNAL KEDOKTERAN DIPONEGORO
(*DIPONEGORO MEDICAL JOURNAL*)
Online : http://ejournal3.undip.ac.id/index.php/medico
E-ISSN : 2540-8844
DOI : 10.14710/jkd (dmj).v14i4.49685
JKD (DMJ), Volume 14, Number 4, July 2025 : 204-208

(36%) continued to experience mild NVP, and 14 participants (56%) experienced moderate NVP. In contrast, in the treatment group, 19 participants (76%) were asymptomatic, and 6 participants (24%) experienced mild NVP.

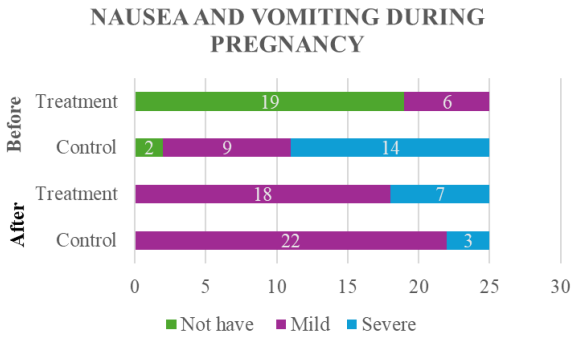

Figure 2. Nausea and Vomiting during Pregnancy (NVP) Level Results Before and After Treatment

The Mann-Whitney statistical test results, presented in Table 1, indicate significant post-intervention differences between the intervention and control groups in anxiety levels and NVP ($p = 0.039$ for anxiety; $p = 0.000$ for NVP, $p < 0.05$). In contrast, no significant differences were observed between the groups for anxiety and NVP levels at baseline ($p = 0.579$ for anxiety; $p = 0.162$ for NVP, $p > 0.05$).

Table 1. Analysis of Kundalini Yoga Analysis on Differences in Levels of Anxiety and Nausea and Vomiting in Pregnancy Between Groups

	Before Treatment		After Treatment	
	Anxiety	Nausea and vomiting	Anxiety	Nausea and vomiting
Mann-Whitney U	288.500	262.500	262.500	58.000
Z	-.554	-1.400	-2.063	-5.272
Asymp. Sig. (2-tailed)	0.579	0.162	0.039*	0.000*

Table 2 displays the results of the Wilcoxon test for within-group comparisons. No significant change in anxiety levels was observed in the control group over the study period ($p = 0.102$, $p > 0.05$). In contrast, the treatment group demonstrated a statistically significant reduction in anxiety following the intervention ($p = 0.002$, $p < 0.05$). Additionally, a marked decrease in the incidence of nausea and vomiting was observed from pre- to post-treatment in both the control and treatment groups ($p = 0.013$ for control; $p = 0.000$ for treatment, $p < 0.05$).

Table 2. Analysis of Group Differences in Anxiety Levels and Nausea and Vomiting During Pregnancy

	Anxiety	Nausea and vomiting
Control	0.102	0.013*
Treatment	0.002*	0.000*

DISCUSSION

The present study demonstrates that Kundalini effectively reduces anxiety among first-trimester pregnant women. This finding is consistent with prior research suggesting that light yoga and relaxation practices can significantly alleviate pregnancy-related anxiety[8]. Similarly, previous studies have emphasized the effectiveness of meditation and breathing techniques in supporting mental well-being during pregnancy[6,9]. Given that early pregnancy is often marked by emotional fluctuations and increased vulnerability to anxiety, the observed reduction suggests that Kundalini may serve as a meaningful intervention during this critical period.

The mechanisms through which Kundalini exerts its benefits appear to be both physiological and psychological. This practice integrates postures, breathing exercises, meditation, and energy management aimed at promoting balanced energy flow[10]. Among these, breathing techniques play a pivotal role in enhancing relaxation, managing stress, and regulating physiological responses. Previous evidence shows that such exercises can lower cortisol levels—a biomarker of stress—thereby improving emotional stability, cognitive function, and metabolic regulation[11]. In addition, improvements in heart rate variability (HRV), such as increases in SDNN and RMSSD, suggest better autonomic nervous system regulation following prenatal yoga[12]. These neurovascular responses, especially parasympathetic activation, may play a role in reducing the anxiety symptoms identified in this study.

Supporting this physiological rationale, the current results reveal statistically significant reductions in anxiety ($p = 0.039$) and nausea and vomiting in pregnancy (NVP) levels ($p = 0.000$) in the treatment group compared to the control group. Within-group analysis further confirmed a significant decrease in anxiety within the treatment group ($p = 0.002$), whereas no meaningful change occurred in the control group ($p = 0.102$). Although both groups showed some reduction in NVP, the improvement was markedly greater in the treatment group ($p = 0.000$) compared to the control ($p = 0.013$). These outcomes reinforce the potential of

JURNAL KEDOKTERAN DIPONEGORO
(*DIPONEGORO MEDICAL JOURNAL*)
Online : http://ejournal3.undip.ac.id/index.php/medico
E-ISSN : 2540-8844
DOI : 10.14710/jkd (dmj).v14i4.49685
JKD (DMJ), Volume 14, Number 4, July 2025 : 204-208

Kundalini Yoga as a dual-targeted intervention addressing both emotional and physical symptoms of pregnancy.

The reduction in NVP is particularly noteworthy, as nausea and vomiting are common in up to 80% of pregnancies, especially during the first trimester[13]. While a natural decline in symptoms may occur over time, the significantly greater reduction in the treatment group highlights the added benefit of yoga practice. Breathing techniques such as pranayama are known to enhance parasympathetic activity and modulate the autonomic nervous system, which can help mitigate gastrointestinal discomfort[14]. These findings align with previous reports on the utility of yoga in reducing both psychological distress and physical symptoms, such as NVP, in early pregnancy[4,15].

Given the association between early pregnancy anxiety and long-term maternal mental health, including risk for postpartum anxiety[3], early interventions such as Kundalini Yoga may serve as a foundational preventive strategy. Not only does it reduce anxiety and NVP, but it also enhances relaxation and overall quality of life, supporting its inclusion in holistic prenatal care.

In conclusion, the results of this study support the use of Kundalini Yoga as a complementary non-pharmacological intervention during early pregnancy. Despite certain limitations —such as the small sample size, short duration of intervention, and lack of control over external variables such as diet and social support— these findings offer meaningful preliminary evidence. Future studies are recommended to include larger, more diverse samples, longer intervention periods, and biomarker-based outcomes to further explore the long-term impact and underlying mechanisms of Kundalini Yoga on maternal health.

CONCLUSION

The implementation of Kundalini Yoga interventions during the first trimester of pregnancy provides significant benefits for both psychological and physical well-being. This study demonstrates that Kundalini Yoga effectively reduces anxiety levels and alleviates symptoms of nausea and vomiting in pregnancy (NVP). These findings highlight the potential of Kundalini Yoga as a complementary therapy to enhance maternal health during early pregnancy. Future research with larger sample sizes and longer intervention periods is recommended to further validate these results.

ETHICAL APPROVAL

Informed consent was obtained from all participants who agreed to participate voluntarily. This research complied with ethical standards and has received ethical clearance under letter 110/FKES/EP/2023.

CONFLICT OF INTEREST

The authors declare no conflicts of interest related to this study.

FUNDING

This research was funded by a Penelitian Dosen Pemula, supported by DRTPM - Direktorat Jenderal Pendidikan Tinggi Kementerian Pendidikan dan Kebudayaan Republik Indonesia, under Grant Agreement No. 45/R/PN/VII/2023.

AUTHOR CONTRIBUTION

All authors contributed equally to every research stage, from the initial conceptualization to the drafting and finalization of this article.

ACKNOWLEDGEMENT

The authors thank all participants for their voluntary involvement and for providing the essential information that made this research possible.

REFERENCES

1. Briliant NP, Rahmawati RSN, Mediawati M. Effectivity Giving Progressive Muscle Relaxation To Decrease Anxiety Pregnancy Women. Indones Midwifery Heal Sci J. 2022;6(1):15–27.
2. Rachma GN, Irwanto I, Izzati D. Differences in the Level of Anxiety of Pregnant Women in the I, Ii, and Iii Trimester. Indones Midwifery Heal Sci J. 2024;8(2):156–70.
3. Hindratni F, Sari SIP. Anxiety Of Pregnant Mothers With An Event Of Nausea And Vomiting On Trimester I Pregnant Woment At Taman Sari Pekanbaru Clinic. J Kebidanan Malahayati. 2023;9(2):147–52.
4. Mudlikah S. Pengaruh Senam Yoga Terhadap Mual Muntah Hamil. Indones J Midwifery Today. 2022;2(2).

JURNAL KEDOKTERAN DIPONEGORO
(*DIPONEGORO MEDICAL JOURNAL*)
Online : http://ejournal3.undip.ac.id/index.php/medico
E-ISSN : 2540-8844
DOI : 10.14710/jkd (dmj).v14i4.49685
JKD (DMJ), Volume 14, Number 4, July 2025 : 204-208

5. Jin B, Han Y, Jiang Y, Zhang J, Shen W, Zhang Y. Acupuncture for nausea and vomiting during pregnancy: A systematic review and meta-analysis. Complement Ther Med [Internet]. 2024;85(August):103079. Available from: https://doi.org/10.1016/j.ctim.2024.103079
6. Mehta S, Grover A, Kale E, Nanda P, Mehta A. Meditation and Yoga in pregnancy: maternal and fetal impact. Int J Reprod Contraception, Obstet Gynecol. 2023;12(2):413–9.
7. Martinez SR, Dueñas A, Ordoñes X. Effects of Brief Daily Kundalini Yoga Meditation on Self-Esteem, Mood and Emotional Self-Efficacy: A Randomized Comparison Study. Int J Transpers Stud. 2021;40(2):88–97.
8. Setiyarini AD, Putri ERT, Andini DM, Rahmawati E. Effects of Prenatal Yoga on the Anxiety of Pregnant Women Before Birth. Indones Midwifery Heal Sci J. 2024;8(1):31–7.
9. Sukarsih RI, Mardliyana NE, Roudlotul H. Pengaruh Relaksasi dan Meditasi terhadap Kecemasan Ibu Hamil Trimester III. SINAR J Kebidanan. 2022;04(1):39–49.
10. Cahyani LPDP, Suwantana IG, Wika IM. The Kundalini Process in Enhancing Physical and Mental Health. Int J Acad Heal Med Res. 2024;8(9):127–35.
11. Örün D, Karaca S, Arıkan Ş. The Effect of Breathing Exercise on Stress Hormones. Cyprus J Med Sci. 2021;6(1):22–7.
12. Lučovnik M, Lackner HK, Žebeljan I, Moertl MG, Dinevski IV, Mahlmann A, et al. Effect of Prenatal Yoga versus Moderate-Intensity Walking on Cardiorespiratory Adaptation to Acute Psychological Stress: Insights from Non-Invasive Beat-to-Beat Monitoring. Sensors. 2024;24(5).
13. Organization of Teratology Information Specialists (OTIS). Nausea and Vomiting in Pregnancy (NVP) [Internet]. Mother to Baby. Brentwood: National Library of Medicine; 2024. Available from: https://www.ncbi.nlm.nih.gov/books/NBK582541/
14. Simsek Sahin E, Can Gürkan Ö. The Effect of Prenatal Yoga on Pregnancy Related Symptoms: A Pilot Quasi-Experimental Study. Complement Med Res. 2022 Dec 26;
15. Wahyuni S, Pramono N, Hadisaputro S, Ediati A. Nausea and Vomiting of Pregnancy: Multiple Contributing Factors. J Info Kesehat. 2023;21(4):681–8.