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The Effect of Yoga Intervention on Reducing Anxiety Levels in Pregnant Women: A Literature Review

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Abstract

Background: Pregnancy is a period of significant physiological and psychological adaptation in a woman's life. In addition to hormonal and physical changes, many pregnant women experience emotional fluctuations, including increased levels of anxiety. **Objective:** This study aims to evaluate the effect of yoga on anxiety levels in pregnant women based on findings from previous studies. **Methods:** This literature review was conducted in July 2025. The literature search was performed using four major electronic databases: Scopus (33 articles), PubMed (9 articles), and Google Scholar (10 articles). The keywords used were *"yoga" AND "pregnant" AND "anxiety"*. Eligible articles were determined based on predefined inclusion and exclusion criteria. **Results:** Of the six articles analyzed, all demonstrated that yoga interventions in pregnant women significantly reduced anxiety levels compared to pre-intervention levels. **Discussion:** Yoga interventions in pregnant women have been proven effective in reducing anxiety. However, further research is needed to determine the optimal duration and structure of yoga practice for pregnant women to achieve the most effective reduction in anxiety. **Conclusion:** Yoga operates through complementary physiological and psychological pathways. When practiced regularly and in a structured manner, it can enhance maternal emotional well-being and reduce anxiety during pregnancy and childbirth.

Keywords: Yoga, Anxiety, Pregnant Women

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Introduction

Pregnancy is a period of significant physiological and psychological adaptation in a woman's life. In addition to hormonal and physical changes, many pregnant women experience emotional fluctuations, including increased anxiety. *Pregnancy-related anxiety* is defined as anxiety directly associated with fetal health, the childbirth process, and the maternal role (Bayrampour et al., 2016). Anxiety during pregnancy has been linked to an increased risk of complications such as preterm birth, low birth weight, emotional regulation disorders in children, and delays in cognitive development (Wen et al., 2020; Field, 2016).

Meta-analytic reports indicate that the global prevalence of antenatal anxiety ranges from 15% to 56%, with higher rates observed during the third trimester of pregnancy (Dennis et al., 2017). In Indonesia, the prevalence of anxiety among pregnant women is also considerably high; however, management remains primarily focused on medical or pharmacological approaches, which may not be suitable for all individuals (Handayani et al., 2021).

As a non-pharmacological alternative, prenatal yoga has emerged as an effective and safe method that integrates light physical exercise, breathing techniques, and meditation. Yoga is known to reduce stress hormones such as cortisol, enhance heart rate variability, and improve autonomic nervous system responses (Field, 2016; Babbar et al., 2022). Several randomized controlled trials have shown that yoga can significantly reduce anxiety and depression levels during pregnancy and improve maternal quality of life (Kinser et al., 2020).

Nonetheless, existing studies demonstrate variation in intervention methods, exercise duration, session frequency, and the instruments used to measure anxiety. Most studies employ general anxiety scales such as the State-Trait Anxiety Inventory (STAI) and Hamilton Anxiety Rating Scale (HARS), while specific instruments like the Pregnancy-Related Anxiety Questionnaire (PRAQ) are rarely used (Bayrampour et al., 2016). Furthermore, contextual research from Indonesia remains limited and has not yet been systematically reviewed.

This study aims to evaluate the effect of yoga on anxiety levels in pregnant women based on previous research findings. Through a literature review, this study is expected to provide a comprehensive understanding of the effectiveness of prenatal yoga and to identify research gaps, particularly in terms of anxiety measurement tools and the implementation of yoga within the Indonesian context.

Methods

This study is a literature review conducted in July 2025. The literature search was carried out using four major electronic databases: Scopus (33 articles), PubMed (9 articles), and Google Scholar (10 articles). The keywords used in the search were: *yoga AND pregnant AND anxiety*. The objective of this study was to investigate the effect of yoga interventions on reducing anxiety levels in pregnant women, based on findings from previous studies.

The initial search yielded a total of 52 articles, which were then screened based on predefined inclusion and exclusion criteria. The inclusion criteria were: (1) studies conducted on

pregnant women; (2) interventions involving yoga; (3) articles written in English and published between 2020 and 2025; (4) quantitative research designs using experimental or randomized controlled trial (RCT) methods; and (5) articles available in full-text format.

The exclusion criteria were: (1) articles available only in abstract form without full-text access; and (2) articles published in journals ranked below SINTA-3 for national publications.

After screening based on the inclusion and exclusion criteria, a total of six articles were deemed eligible and selected for analysis in this literature review. These articles were analyzed to examine in depth the role of yoga in reducing anxiety among pregnant women. The article selection and screening process is illustrated in detail in the flow diagram presented in Figure 1.

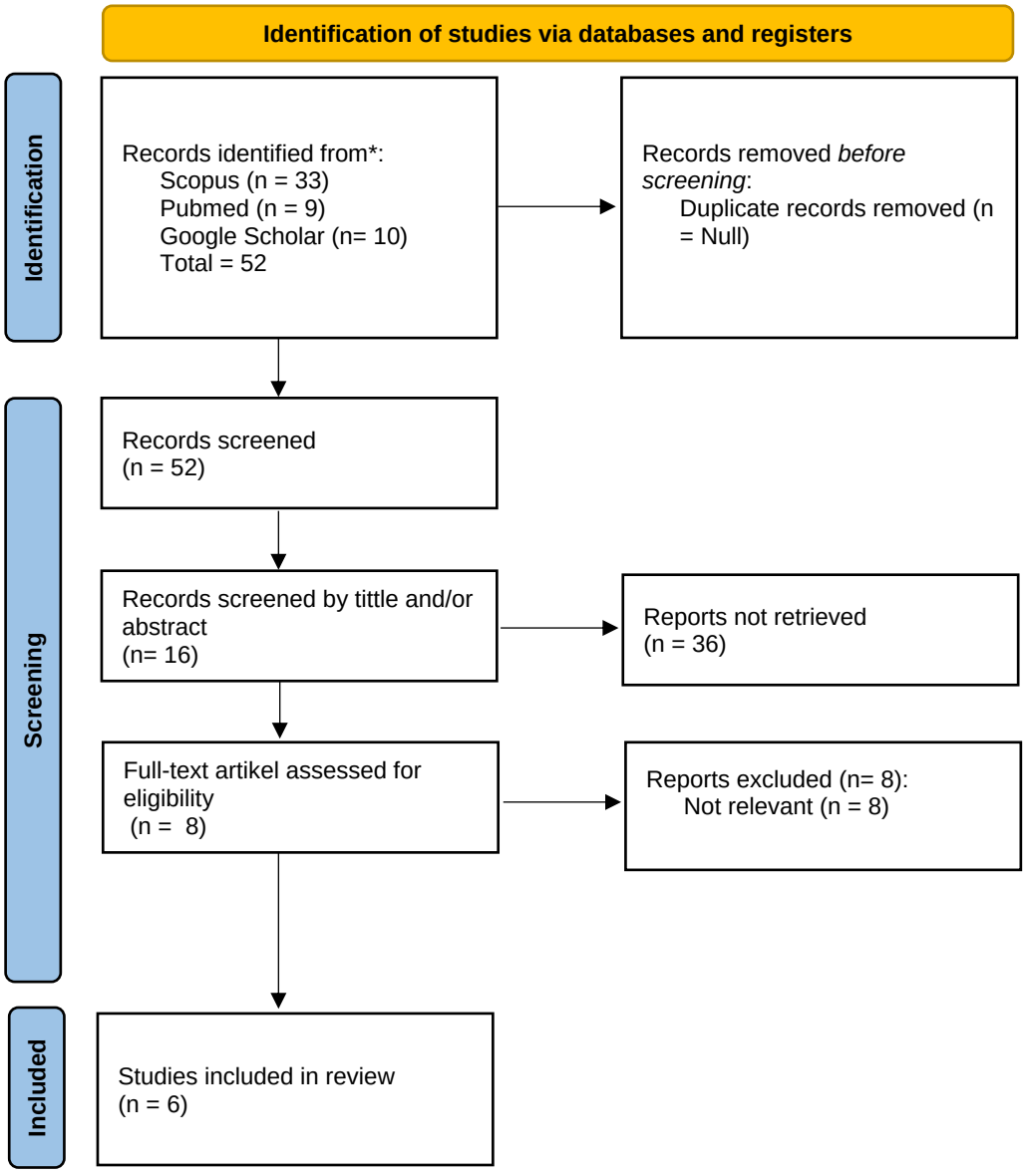

Figure 1. PRISMA Flow Chart of the Article Selection Process

Results

Based on the data extraction process, a total of six articles met the predefined inclusion and exclusion criteria. Among these, two articles were published in 2020, one in 2023, two in 2024, and one article was published in 2025. The duration and frequency of the yoga interventions varied across the studies. One study reported an intervention consisting of six 90-minute sessions, while another implemented a 12-session intervention, conducted twice a week over six weeks, with each session lasting one hour. Another study applied yoga five times per week for 16 weeks, while one study implemented eight sessions per month. However, one article did not provide detailed information regarding the yoga intervention protocol. All six analyzed articles indicated that yoga interventions in pregnant women were associated with a reduction in anxiety levels compared to pre-intervention conditions. A detailed summary of the findings is presented in Table 1.

Discussion

Several studies have demonstrated that prenatal yoga is effective in reducing anxiety levels in pregnant women, particularly in the period leading up to childbirth. Armaita et al. (2025) reported that gentle prenatal yoga administered over eight sessions was effective in reducing anxiety among third-trimester primigravida mothers. Although the study employed a pre-experimental design without a control group, its findings are consistent with stronger evidence from experimental research.

Tuga et al. (2024), using a randomized controlled trial (RCT) design with 88 participants, found a significant reduction in both trait and state anxiety following six 90-minute yoga sessions compared to the control group (trait: 25.84 vs. 57.38; state: 27.93 vs. 60.13; $p < 0.05$). These results reinforce the causal effect of yoga on pregnancy-related anxiety. Meanwhile, a quasi-experimental study by Aksoy & Gursoy (2025) showed that a combination of yoga and childbirth education significantly decreased salivary cortisol levels (a physiological stress indicator, $p < 0.001$) and reduced childbirth fear ($p < 0.05$), even though state anxiety levels in the intervention group were briefly higher post-intervention. This suggests that yoga's psychological and physiological effects may operate through distinct mechanisms.

In the context of local studies, Veronica et al. (2020) found that following a prenatal yoga program, the majority of pregnant women (54.1%) experienced mild anxiety, while only 14.6% experienced moderate to severe anxiety—indicating a favorable reduction in anxiety levels despite the absence of inferential statistical analysis. Mamlukah et al. (2020) showed that antenatal yoga combined with Qur'anic recitation (murottal) therapy significantly reduced anxiety ($p = 0.007$) as well as systolic ($p = 0.006$) and diastolic blood pressure ($p = 0.001$) in mothers at risk of preeclampsia, highlighting the benefits of holistic interventions.

Table 1. Summary of Research Findings

Author(s)	Objective	Sample	Design	Massage Dosage	Findings
Armaita egt al., 2025	To determine whether gentle prenatal yoga can reduce anxiety levels in third-trimester primigravida women in preparation for childbirth	15 pregnant women	Pre-experimental design	8 sessions	Gentle prenatal yoga significantly reduced anxiety levels in third-trimester primigravida women preparing for delivery.
Tuga, et al., 2024	To examine the effect of yoga on anxiety among pregnant women with gestational hypertension.	IG: 44; CG: 44	Randomized Controlled Trial (RCT)	6 sessions, 90 minutes each	Significant statistical differences between groups in trait anxiety (25.84 ± 3.45 vs. 57.38 ± 8.07; $p < 0.05$) and state anxiety (27.93 ± 3.72 vs. 60.13 ± 8.13; $p < 0.05$) after the intervention.
Aksoy & Gursoy, 2025	To determine the effect of childbirth preparation training supported by yoga on cortisol levels, anxiety, childbirth fear, and maternal readiness.	60 pregnant women	Quasi-experimental study	Once a week for 4 weeks	Significant decrease in salivary cortisol in the Yoga + CPT group ($p < 0.001$); however, state anxiety levels were significantly higher post-intervention ($p < 0.001$). Significant reduction in childbirth fear post-intervention ($p < 0.05$).
Veronica, et al., 2020	To assess the effect of prenatal yoga on anxiety levels among third-trimester pregnant women in Singgani Health Center.	48 pregnant women	Pre-experimental research	Not Available	After prenatal yoga, 54.1% had mild anxiety, 16.7% were not anxious, and 14.6% had moderate-to-severe anxiety. No inferential statistics reported.
Mamlukah, et al., 2020	To identify the effect of antenatal yoga and Qur'anic recitation	40 pregnant women	True experimental	12 sessions, twice weekly for 6 weeks, 1 hour per	Antenatal yoga, Qur'anic recitation therapy, and their combination

	(murottal) therapy on pregnant women at risk for preeclampsia.		design	session	significantly reduced anxiety (p = 0.007), systolic (p = 0.006), and diastolic blood pressure (p = 0.001) in high-risk pregnant women.
Nadholta, et al., 2023	To examine the impact of gestational yoga (YOGESTA) on neuropsychological status, quality of life, and maternal personality.	100 pregnant women	Randomized Controlled Trial	5 times per week for 16 weeks	The yoga group showed significant reductions in perceived stress, depression, anxiety, and psychological distress, with improved scores in psychological and environmental domains of QOL-BREF.

An intensive gestational program, YOGESTA, introduced by Nadholta et al. (2023) (RCT, 100 participants, 16-week duration), recorded significant reductions in stress, depression, and anxiety, along with improvements in the psychological and environmental domains of quality of life, as measured by the WHO-QOL BREF (Nadholta et al., 2023).

These findings are consistent with previous meta-analyses assessing the impact of yoga on pregnancy-related anxiety. For example, a meta-analysis of 11 RCTs reported a standardized mean difference (SMD) of −0.91 (95% CI: −1.49 to −0.33; p = 0.002), indicating a significant positive effect of yoga on anxiety (Corrigan et al., 2022). Another meta-analysis involving 426 participants also found that prenatal yoga reduced anxiety with an SMD of −0.48 (95% CI: −0.92 to −0.03; p = 0.03) (Ningrum et al., 2019).

The physiological impact of yoga on stress is further supported by a longitudinal RCT from Taiwan (n = 94), which showed decreased salivary cortisol levels and increased Immunoglobulin A immediately after yoga sessions ($p < 0.001$), as well as sustained IgA improvement over time ($p = 0.018$) (Chen et al., 2017). A Japanese study (2016) also reported that a single yoga session significantly reduced cortisol, alpha-amylase, and negative moods such as anxiety, depression, anger, and fatigue ($p \leq 0.001$) (Kusaka et al., 2016).

Conclusion

Yoga intervention has been scientifically and practically proven to reduce anxiety levels in pregnant women. Yoga works through complementary physiological and psychological pathways, and when practiced regularly and in a structured manner, it can enhance maternal emotional well-being and reduce anxiety throughout pregnancy and into labor.

Conflicts of Interest

Generated from the conflict of interest forms by each author.

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