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Effectiveness of Prenatal Yoga in Reducing Back Pain Among Third-Trimester Pregnant Women: A Literature Review

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Abstract

Background: Back pain is one of the common discomforts experienced by pregnant women, particularly during the third trimester, due to changes in body posture, increased body weight, and hormonal changes during pregnancy. Prenatal yoga is a non-pharmacological intervention that may help reduce back pain during pregnancy.
Purpose: This literature review aimed to analyze the effectiveness of prenatal yoga in reducing back pain among third-trimester pregnant women.
Methods: This literature review identified, examined, and analyzed original research articles on prenatal yoga and back pain among third-trimester pregnant women. The literature search was conducted through Google Scholar and PubMed using the keywords "Prenatal Yoga," "Back Pain," "Third-Trimester Pregnant Women," and "Pregnancy." Articles published between 2021 and 2026, available in full text, written in Indonesian or English, and addressing the effect of prenatal yoga on back pain among third-trimester pregnant women were included. The selection process referred to the Preferred Reporting Items for *Systematic Reviews and Meta-Analyses* (PRISMA) guidelines.Results: Nine articles met the inclusion criteria and were reviewed. The included studies used experimental and quasi-experimental designs and involved pregnant women, particularly those in the third trimester. The reviewed studies consistently reported reductions in back pain following prenatal yoga, with statistically significant findings. The findings were observed across different sample sizes, study designs, and pain assessment methods.
Conclusions: Prenatal yoga may be used as a non-pharmacological intervention to help reduce back pain and improve comfort among third-trimester pregnant women.

Keywords: Prenatal Yoga, Back Pain, Third-Trimester Pregnant Women, Pregnancy

Introduction

Pregnancy is a physiological process that continues from fertilization until childbirth. During this period, the fertilized ovum develops through several stages, including zygote formation, implantation, placental development, and fetal growth. The normal duration of pregnancy is approximately 40 weeks or 280 days, calculated from the first day of the last menstrual period (Efendi et al., 2022).

Back pain is a common discomfort during pregnancy and is frequently experienced as pregnancy progresses, particularly during the third trimester. *The World Health Organization* (WHO) reported that approximately

619 million people experienced low back pain worldwide in 2020, and this number is projected to increase to 843 million cases by 2050 (WHO, 2023). In Indonesia, lower back pain is also recognized as one of the common complaints among pregnant women. The Ministry of Health of the Republic of Indonesia reported that back pain may begin at approximately 20–28 weeks of gestation and may become more noticeable as pregnancy progresses (Kemenkes, 2024).

The occurrence of back pain during pregnancy is influenced by several physical changes. As the uterus enlarges and maternal weight increases, the body's center of gravity shifts, which may affect posture and increase the workload of the back muscles. Hormonal changes may also influence the tissues that support the body and contribute to musculoskeletal discomfort (Meilinda et al., 2025; Rustiningsih et al., 2022). Although back pain is commonly experienced during pregnancy, it can interfere with daily activities, sleep, mobility, and overall maternal comfort. Appropriate management is therefore needed to help reduce discomfort during pregnancy (Kemenkes, 2024).

Prenatal yoga is one non-pharmacological approach that may be used to reduce back pain in pregnant women. Prenatal yoga is an exercise program adapted to pregnancy through stretching movements, breathing exercises, and relaxation techniques. These exercises may help reduce back pain and improve physical comfort during pregnancy (Rahmawati et al., 2021; Rustiningsih et al., 2022).

Previous studies have reported beneficial findings regarding the use of prenatal yoga for back pain during pregnancy. Rahmawati et al. (2021) found a significant reduction in lower back pain following prenatal yoga, with a p-value of 0.000. Rustiningsih et al. (2022) also reported a reduction in back pain among pregnant women after prenatal yoga. Similar findings were reported by Emilia & Dyan Oktaviani (2024), who found a significant reduction in back pain following the intervention. These findings indicate that prenatal yoga may help reduce back pain during pregnancy and may be considered as a non-pharmacological approach to managing this discomfort.

Although previous studies have reported reductions in back pain following prenatal yoga, their findings were obtained from studies with different research designs, sample sizes, intervention characteristics, duration and frequency of practice, and pain assessment methods. The studies were also conducted in different settings and involved pregnant women with varying characteristics. These differences make it necessary to examine the available findings together to obtain a clearer understanding of the effectiveness of prenatal yoga, particularly among third-trimester pregnant women. Previous findings have not been specifically synthesized to provide a comprehensive overview of this intervention in this population.

Therefore, this literature review aimed to examine and summarize the evidence regarding the effectiveness of prenatal yoga in reducing back pain among third-trimester pregnant women.

Materials and Methods

Design

This study employed a literature review design to identify, examine, and synthesize research evidence regarding the effectiveness of prenatal yoga in reducing back pain among third-trimester pregnant women. The literature review focused on primary research examining prenatal yoga as a non-pharmacological intervention for back pain during the third trimester of pregnancy. The review was conducted to provide an overview of the effectiveness of prenatal yoga based on the findings of previous studies with different research designs, intervention characteristics, sample sizes, and pain assessment methods. The article selection process was conducted according to the Preferred Reporting Items for Systematic Reviews and

Meta-Analyses (PRISMA) guidelines.

Search Methods

The literature search was conducted in August 2026 using electronic databases, specifically Google Scholar and PubMed. The search focused on original research articles examining the effectiveness of prenatal yoga in reducing back pain among third-trimester pregnant women. The search strategy was developed based on the main components of the research topic, including the population (third-trimester pregnant women), the intervention (prenatal yoga), and the outcome (back pain). Keywords used included “Prenatal Yoga,” “Back Pain,” “Third-Trimester Pregnant Women,” and “Pregnancy.” These keywords were combined to identify articles relevant to the research topic. The search was limited to articles published between 2021 and 2026.

Inclusions and Exclusion Criteria

The inclusion criteria for this literature review were as follows: (1) original research articles involving pregnant women, particularly those in the third trimester; (2) studies examining prenatal yoga as an intervention; (3) studies measuring back pain as an outcome; (4) studies evaluating changes or effects of prenatal yoga on back pain; (5) articles published between 2021 and 2026; (6) articles written in Indonesian or English; and (7) articles available in full text. Articles were excluded if they did not involve third-trimester pregnant women, did not examine prenatal yoga as an intervention, did not measure back pain as an outcome, did not evaluate the effect of prenatal yoga on back pain, were not original research articles, were

published outside the specified publication period, were not available in full text, or were written in languages other than Indonesian or English.

Data Extraction

Data extraction was performed systematically from each article that met the inclusion criteria. The extracted information included the author and publication year, study title, study design, population and sample, prenatal yoga intervention, pain assessment method, statistical analysis, study results, and conclusion. The extracted data were organized in a table to facilitate comparison of the characteristics and findings of the included studies. The findings were then compared and synthesized narratively to identify similarities and differences in the effectiveness of prenatal yoga in reducing back pain among third-trimester pregnant women.

Quality Appraisal

The methodological quality of the included studies was assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Tools according to the study design. JBI critical appraisal tools are designed to assess the trustworthiness, relevance, and results of published research, with different checklists available for different study designs. The assessment in this literature review primarily used the JBI Critical Appraisal Checklist for Quasi-Experimental Studies because most of the included studies used quasi-experimental or pre-experimental designs. The appraisal considered aspects such as the clarity of the intervention and outcome, the presence of a control group, measurement of outcomes before and after the intervention, completeness of follow-up, consistency of outcome measurement, reliability of the measurement method, and appropriateness of statistical analysis. The results of the quality appraisal were presented in the study table as the number of “Yes,” “No,” “Unclear,” and “N/A” responses for each study. The JBI checklist contains nine appraisal questions for quasi-experimental studies.

Identification of studies through databases

Articles that were removed during screening (n= 2.191)

Articles retrieved from databases: (n= 2.500) Google Scholar (n = 2.490) PubMed (n = 10)

Identification

Deleted articles (n = 268)

Articles that were screened (n = 309)

Screening

Full text screening article (n = 41)

Articles not obtained (n = 25)

Articles assessed for eligibility (n = 16)

Included

Articles included in the review (n = 9)

Figure 1. PRISMA Flow Diagram

Results

Tabel 1. Data Extraction from the Included Studies on the Effectiveness of Prenatal Yoga in Reducing Back Pain Among Third-Trimester Pregnant Women

No.	Author (Year)	Title	Design	Population	Results	Conclusion	Risk of Bias
1.	Mayunita & Febriani (2024)	Effectiveness of Prenatal Yoga on Back Pain in Third-Trimester Pregnant Women at PMB A Cibinong-Depok	Experimental	Third-trimester pregnant women at PMB A Cibinong-Depok	The Wilcoxon test showed a statistically significant difference between pretest and posttest scores ($p < 0.001$)	Prenatal yoga was effective in reducing back pain among third-trimester pregnant women at PMB A Cibinong-Depok.	5 Yes, 1 No, 1 Unclear, 2 N/A
2.	Trisiani & Susilawati (2025)	Effectiveness of Prenatal Yoga on Back Pain in Third-Trimester Pregnant Women at Klinik M,	Experimental	35 respondents	The Paired Sample t-Test showed a p-value of 0.000 < 0.05.	There was an effect of prenatal yoga on back pain among pregnant women.	4 Yes, 1 No, 2 Unclear, 2 N/A

No.	Author (Year)	Title	Design	Population	Results	Conclusion	Risk of Bias
		Karawang Regency, 2024					
3.	Nainggolan et al. (2026)	Prenatal Yoga for Back Pain in Third-Trimester Pregnant Women	Quasi-experimental	48 pregnant women	The Wilcoxon Signed-Rank Test showed a p-value of 0.000 < 0.05.	Prenatal yoga was effective in reducing back pain among third-trimester pregnant women at Batang Gansal Health Center, Indragiri Hulu Regency.	5 Yes, 1 No, 1 Unclear, 2 N/A
4.	Emilia & Dyan Oktaviani (2024)	The Effect of Prenatal Yoga on Back Pain in Third-Trimester Pregnant Women at PMB E Mustika Jaya, East Bekasi, 2023	Pre-experimental	Third-trimester pregnant women	The Spearman rank statistical test showed a p-value of 0.000 < 0.05.	There was an effect of prenatal yoga on back pain among third-trimester pregnant women.	4 Yes, 1 No, 2 Unclear, 2 N/A
5.	Panesa et al. (2026)	The Effect of Prenatal Yoga on Reducing Back Pain in Third-Trimester Pregnant Women in the Working Area of Kedondong Health Center, Pesawaran Regency	Pre-experimental	26 third-trimester pregnant women	The Wilcoxon test showed a p-value of 0.000 ($p < 0.05$).	There was a significant effect of prenatal yoga on reducing back pain among third-trimester pregnant women.	5 Yes, 1 No, 1 Unclear, 2 N/A
6.	Rofita et al. (2025)	The Effect of Prenatal Yoga on Reducing Lower Back Pain in Third-Trimester Pregnancy	Quasi-experimental	60 pregnant women	Both groups experienced a reduction in pain, with a statistical test result of $p < 0.05$.	Prenatal yoga had a significant effect on reducing back pain among third-trimester pregnant women ($p < 0.05$).	6 Yes, 0 No, 2 Unclear, 1 N/A.
7.	Sumarni & Lestari (2025)	Effect of Prenatal Yoga on Lower Back Pain in Third-Trimester Pregnant Women	Quasi-experimental	28 third-trimester pregnant women	The Wilcoxon test showed $p = 0.001 < 0.05$.	There was a significant reduction in back pain after prenatal yoga.	6 Yes, 1 No, 2 N/A.

No.	Author (Year)	Title	Design	Population	Results	Conclusion	Risk of Bias
8.	Meilinda et al. (2025)	The Effect of Prenatal Yoga on Back Pain in Pregnant Women in the Third Trimester	Quasi-experimental	32 respondents	The statistical test showed a p-value of 0.000.	There was a significant effect of prenatal yoga on reducing back pain among pregnant women.	6 Yes, 0 No, 2 Unclear, 1 N/A.
9.	Hamdayani & Fitria (2025)	The Effect of Prenatal Yoga on Back Pain in Third-Trimester Pregnant Women	Quasi-experimental	25 respondents	The Paired Sample t-Test showed a p-value of 0.000 ($p < 0.05$).	There was a difference in back pain scores before and after prenatal yoga among third-trimester pregnant women.	4 Yes, 1 No, 2 Unclear, 2 N/A

Discussion

This literature review found that prenatal yoga can help reduce back pain among third-trimester pregnant women. All nine studies included in this review reported a decrease in back pain after prenatal yoga, although the results varied according to study design, sample size, intervention characteristics, and pain assessment methods. The decrease in pain was reported in different groups of pregnant women and in different healthcare settings. These findings show a consistent pattern of reduced back pain following prenatal yoga.

The reduction in back pain was reported in several studies with statistically significant results. Mayunita & Febriani (2024) found a significant reduction in back pain after prenatal yoga, with $p = 0.000$. Trisiani & Susilawati (2025) reported a decrease in the mean pain score from 7.34 before the intervention to 2.20 after the intervention, with $p = 0.000$. Nainggolan et al. (2026) also found a significant change in pain categories, with a Wilcoxon Signed-Rank Test result of $p = 0.000$. The results from these studies indicate that prenatal yoga may reduce the intensity of back pain among third-trimester pregnant women.

The same pattern was found in the studies by Emilia & Dyan Oktaviani (2024) and Panesa et al. (2026), which reported a significant effect of prenatal yoga on back pain, with $p = 0.000$. The studies were conducted in different settings and involved different numbers of participants, but both reported lower levels of back pain after prenatal yoga. The consistent direction of the results suggests that prenatal yoga may be beneficial for pregnant women experiencing back pain.

Rofita et al. (2025) provided a different perspective by comparing prenatal yoga with pregnancy exercise in 60 pregnant women. Both groups experienced a reduction in back pain, while the prenatal yoga group showed a significant reduction, with $p < 0.05$. This comparison provides additional information because the effect of prenatal yoga was examined alongside another form of pregnancy exercise rather than only through changes before and after the intervention.

The other studies included in this review also reported significant reductions in back pain. Sumarni & Lestari (2025) found a significant reduction among 28 third-trimester pregnant women, with $p = 0.001$. Meilinda et al. (2025) reported a significant effect among 32 respondents, with $p = 0.000$. Hamdayani & Fitria (2025) found a significant difference in back pain scores before and after prenatal yoga, with a Paired Sample t-Test result of $p = 0.000$. These findings show that reductions in back pain were reported across studies with different sample sizes and research designs.

The nine studies reviewed in this literature review showed a consistent reduction in back pain following prenatal yoga among third-trimester pregnant women. Differences in research design, sample size, intervention characteristics, and pain assessment methods were found across the studies, but the overall direction of the findings remained similar. Prenatal yoga may be considered a non-pharmacological approach to help manage back pain and improve comfort during the third trimester of pregnancy.

Conclusions

Based on the literature review of nine articles, prenatal yoga is effective in helping reduce back pain among third-trimester pregnant women. The reviewed studies consistently reported reductions in the intensity or category of back pain following prenatal yoga, with statistically significant results. One study comparing prenatal yoga with pregnancy exercise also reported that prenatal yoga was more effective in reducing back pain. Therefore, prenatal yoga can be used as a non-pharmacological intervention to help reduce back pain and improve comfort among third-trimester pregnant women.

Declaration of Interest

The authors declare that there is no conflict of interest related to this article.

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Data Availability

The data used in this literature review were obtained from published research articles available through Google Scholar. The data supporting the findings of this review are presented within the article.

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