

The Role of Prenatal Yoga Education in Improving Maternal Well-Being During Third Trimester Pregnancy: An Evidence-Based Case Report

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ABSTRACT

Pregnancy is accompanied by various physiological changes that frequently cause lower back pain during the third trimester, affecting maternal comfort and quality of life. Evidence-based prenatal education is essential to help pregnant women manage these discomforts through safe and effective non-pharmacological interventions. This study aimed to describe the implementation of prenatal yoga education as an evidence-based approach to improving maternal well-being in a third-trimester pregnant woman. A case report design was employed involving one pregnant woman who received continuity of midwifery care at Ibrahim Adjie Community Health Center, Bandung, Indonesia, from July to November 2025. The intervention consisted of prenatal yoga education integrated into comprehensive antenatal care, including body mechanics, breathing techniques, stretching exercises, muscle strengthening, and relaxation practices. Data were collected through observation, physical examination, documentation, and continuous evaluation throughout pregnancy, childbirth, postpartum, newborn care, and family planning services. The findings demonstrated that regular participation in prenatal yoga education reduced lower back pain intensity, improved maternal comfort, enhanced physical and psychological readiness for childbirth, and supported a normal pregnancy and delivery without complications. The integration of evidence-based prenatal yoga education into continuity of midwifery care provides an effective educational strategy for promoting maternal well-being and strengthening pregnant women's self-management skills during the third trimester. These findings highlight the importance of incorporating evidence-based health education into maternal healthcare services to improve pregnancy outcomes.

Keywords: *evidence-based education; maternal well-being; prenatal yoga; pregnancy; third trimester.*

INTRODUCTION

Health education plays a fundamental role in improving maternal knowledge, self-care practices, and health outcomes throughout pregnancy. Effective educational interventions enable pregnant women to understand physiological changes, recognize pregnancy-related discomforts, and adopt appropriate evidence-based strategies to maintain maternal and fetal well-being (World Health Organization [WHO], 2022a). In maternal healthcare, educational approaches are increasingly integrated into continuity

of care models to empower women in making informed decisions and promoting healthy pregnancy behaviors (International Confederation of Midwives [ICM], 2021).

Pregnancy is characterized by significant anatomical, physiological, and psychological adaptations. During the third trimester, the enlargement of the uterus, increased fetal weight, hormonal changes, and altered body posture frequently contribute to lower back pain, which is one of the most common musculoskeletal complaints experienced by pregnant women (Katonis et al., 2021). Previous studies have reported that approximately 50–70% of pregnant women experience lower back pain during pregnancy, and the prevalence is considerably high in developing countries, including Indonesia (Fitriana et al., 2024). Persistent lower back pain may interfere with daily activities, reduce sleep quality, increase stress levels, and negatively affect maternal quality of life (Armayanti et al., 2023).

Evidence-based health education has become an important strategy for helping pregnant women manage pregnancy discomforts using safe and non-pharmacological interventions. Among various educational approaches, prenatal yoga has received increasing attention because it combines breathing exercises, stretching, muscle strengthening, relaxation, and body awareness into a structured learning process (Rudin et al., 2021). Through regular educational sessions, pregnant women develop practical knowledge and self-management skills that contribute to reducing physical discomfort while improving psychological readiness for childbirth (WHO, 2022b).

Prenatal yoga is not merely a physical exercise but also an educational intervention that enhances maternal health literacy and encourages active participation in pregnancy care. Studies have demonstrated that prenatal yoga effectively reduces lower back pain, decreases anxiety, improves childbirth self-efficacy, and promotes maternal well-being (Sahin & Özlem, 2023). Furthermore, evidence from randomized controlled trials indicates that women participating in prenatal yoga programs experience better physical comfort and more positive pregnancy outcomes than those receiving routine antenatal care alone (Rong et al., 2021).

The continuity of midwifery care model provides an appropriate educational setting for implementing evidence-based prenatal yoga because it allows continuous interaction between healthcare providers and pregnant women throughout pregnancy, childbirth, postpartum, newborn care, and family planning services (Munthe et al., 2022). This approach is also consistent with the principles of women-centered care, which emphasize informed decision-making, patient empowerment, and individualized healthcare services (Biana et al., 2021).

Although numerous studies have investigated the clinical effectiveness of prenatal yoga, limited evidence has explored prenatal yoga as an evidence-based educational intervention integrated into continuity of midwifery care. This gap highlights the need to examine how structured prenatal yoga education contributes to improving maternal well-being while strengthening pregnant women's knowledge and self-management abilities.

Therefore, this case report aimed to describe the implementation of prenatal yoga education as an evidence-based learning strategy integrated into continuity of midwifery care for improving maternal well-being among third-trimester pregnant women.

METHOD

This study employed an evidence-based case report design to describe the implementation of prenatal yoga education as an educational intervention integrated into continuity of midwifery care for improving maternal well-being during the third trimester of pregnancy. The case involved one pregnant woman (Mrs. P), aged 28 years, gravida 3 para 2 abortus 0 (G3P2A0), who received comprehensive maternity care at Ibrahim Adjie Community Health Center, Bandung, Indonesia, from July to November 2025. The participant was selected because she experienced lower back pain during the third trimester while meeting the criteria for a low-risk pregnancy.

The educational intervention consisted of structured prenatal yoga sessions integrated into routine antenatal care. Health education covered correct body mechanics, breathing techniques, stretching exercises, pelvic and back muscle strengthening, relaxation techniques, and recommendations for regular physical activity. The participant practiced prenatal yoga two to three times per week, with each session lasting approximately 45–60 minutes under the supervision of trained healthcare providers. The intervention was implemented continuously throughout pregnancy as part of evidence-based continuity of midwifery care.

The evidence supporting this intervention was identified using the PICO (Population, Intervention, Comparison, Outcome) framework. The Population included pregnant women during pregnancy, the Intervention was prenatal yoga, no Comparison intervention was applied, and the Outcome focused on reducing lower back pain and improving physiological comfort during pregnancy. Literature searching was conducted through three electronic databases, namely PubMed, ScienceDirect, and BMC, using Boolean operators combining the keywords Pregnant, Pregnant Women, Pregnancy, Prenatal Yoga, Back Pain, and Physical Discomfort. After screening titles, removing duplicates, assessing full-text availability, and applying inclusion and exclusion criteria, one randomized controlled trial conducted by Rong et al. (2021) was selected as the best available evidence for critical appraisal.

Data were collected through observation, physical examination, maternal interviews, clinical documentation, and continuous evaluation during antenatal care, childbirth, postpartum care, newborn care, and family planning services. Maternal responses to prenatal yoga education were monitored by assessing changes in lower back pain intensity, maternal comfort, physical condition, and pregnancy outcomes throughout the intervention period.

Data were analyzed descriptively by comparing the participant's clinical outcomes before and after the educational intervention with the evidence obtained from the selected randomized controlled trial. The findings were interpreted to evaluate the applicability of prenatal yoga education within continuity of midwifery care and its contribution to improving maternal well-being.

FINDINGS AND DISCUSSION

The implementation of evidence-based prenatal yoga education was conducted as part of continuity of midwifery care for a 28-year-old pregnant woman (Mrs. P), gravida 3 para 2 abortus 0 (G3P2A0), who presented at 33 weeks of gestation with complaints of lower back pain. Initial assessment revealed that the pregnancy was categorized as low risk, with a single live fetus in cephalic presentation and no obstetric complications. The participant reported a lower back pain intensity of 4 on a 10-point Numeric Rating Scale (NRS), which affected her daily comfort and physical activities.

Prenatal yoga education was integrated into routine antenatal care through structured educational sessions conducted two to three times per week, each lasting approximately 45–60 minutes. The educational content included information on physiological changes during pregnancy, correct body mechanics, breathing techniques, stretching exercises, pelvic floor and back muscle strengthening, relaxation techniques, and recommendations for regular home practice. During each visit, the participant received demonstrations, supervised practice, and feedback to ensure the correct performance of each movement.

Progressive improvement was observed throughout the intervention period. At the second follow-up visit, the participant reported a reduction in lower back pain intensity from 4 to 2, accompanied by improved mobility and increased comfort while performing daily activities. By the final antenatal evaluation before childbirth, pain intensity had decreased to 0–1, indicating almost complete resolution of symptoms. The participant also reported better sleep quality, reduced physical discomfort, increased confidence in preparing for labor, and greater understanding of self-management strategies for pregnancy-related discomforts.

The continuity of midwifery care continued through childbirth, postpartum care, newborn care, and family planning services. Labor occurred spontaneously at term without maternal or neonatal complications. A healthy female infant was delivered vaginally and received immediate skin-to-skin contact and early initiation of breastfeeding. During the postpartum period, uterine involution progressed normally, breastfeeding was successfully established, family support remained optimal, and both mother and newborn maintained good health throughout the follow-up period. An intrauterine device (IUD) was inserted as the postpartum family planning method according to the mother's preference.

Overall, the findings demonstrate that integrating prenatal yoga education into continuity of midwifery care contributed to reduced lower back pain, enhanced maternal comfort, improved physical and psychological preparedness for childbirth, and positive maternal and neonatal outcomes. These results indicate that evidence-based prenatal yoga education can be effectively implemented as part of comprehensive maternal healthcare services.

Discussion

The findings of this study demonstrate that integrating prenatal yoga education into continuity of midwifery care contributed to significant improvements in maternal

well-being during the third trimester of pregnancy. The participant experienced a progressive reduction in lower back pain intensity, improved physical comfort, increased confidence in preparing for childbirth, and positive pregnancy outcomes without maternal or neonatal complications. These findings indicate that evidence-based prenatal yoga education not only functions as a non-pharmacological intervention but also serves as an effective educational approach that enables pregnant women to acquire practical knowledge and self-management skills throughout pregnancy.

Lower back pain is one of the most common musculoskeletal complaints experienced during pregnancy because of hormonal changes, increased body weight, altered posture, and the displacement of the body's center of gravity (Katonis et al., 2021). As pregnancy progresses, increased lumbar lordosis and ligament relaxation impose greater mechanical stress on the spine, contributing to discomfort and functional limitations. Without appropriate management, persistent lower back pain may negatively influence sleep quality, daily activities, emotional well-being, and overall quality of life (Armayanti et al., 2023). The progressive reduction in pain observed in this study supports previous evidence that structured physical activity combined with health education is beneficial for managing pregnancy-related discomfort.

The positive outcomes may be explained by the physiological and educational components of prenatal yoga. Physiologically, stretching exercises improve flexibility, strengthen the pelvic and lumbar muscles, enhance spinal stability, and reduce muscular tension. Controlled breathing and relaxation techniques stimulate parasympathetic nervous activity, reducing stress hormones and decreasing pain perception (Rudin et al., 2021). Educationally, repeated demonstrations, supervised practice, and continuous feedback encourage pregnant women to understand body mechanics, recognize physiological changes during pregnancy, and apply appropriate self-care strategies independently. Consequently, prenatal yoga becomes not only an exercise program but also an experiential learning process that promotes behavioral change and healthy lifestyle practices.

The present findings are consistent with previous studies reporting that prenatal yoga effectively reduces lower back pain, decreases pregnancy-related anxiety, and improves maternal comfort. Sahin and Özlem (2023) found that women who participated in prenatal yoga experienced significant reductions in pregnancy-related symptoms together with improvements in emotional well-being. Similarly, Rong et al. (2021) demonstrated that structured prenatal yoga interventions increased childbirth self-efficacy, reduced physiological discomfort, and improved delivery outcomes among pregnant women. The consistency between the current findings and previous evidence strengthens the recommendation that prenatal yoga should be incorporated into routine antenatal education programs.

From an educational perspective, this study highlights the importance of integrating evidence-based health education into continuity of midwifery care. Continuous interaction between healthcare professionals and pregnant women creates opportunities for individualized learning, reinforcement of health messages, and regular evaluation of behavioral changes. This educational process reflects the principles of

women-centered care, where pregnant women actively participate in decision-making and become partners in maintaining their own health (Biana et al., 2021; Munthe et al., 2022). Furthermore, continuity of care facilitates long-term communication between midwives and mothers, allowing educational interventions to be delivered consistently throughout pregnancy, childbirth, postpartum care, newborn care, and family planning services.

The findings also demonstrate the contribution of prenatal yoga education to maternal health literacy. Health literacy is essential for enabling pregnant women to interpret health information, make informed decisions, and perform appropriate self-care practices. By combining evidence-based information with practical learning experiences, prenatal yoga education empowers pregnant women to manage common pregnancy discomforts independently while strengthening their confidence and readiness for childbirth. This educational approach aligns with the World Health Organization's recommendation that maternal healthcare should promote health education and active participation to improve maternal and neonatal outcomes (WHO, 2022a; WHO, 2022b).

Despite these encouraging findings, this study has several limitations. As an evidence-based case report involving a single participant, the findings cannot be generalized to broader populations. Individual maternal characteristics, cultural backgrounds, and healthcare settings may influence the effectiveness of prenatal yoga education. Future studies involving larger samples and experimental or quasi-experimental designs are recommended to evaluate the educational effectiveness of prenatal yoga across different populations and healthcare contexts. Such studies would provide stronger evidence regarding the integration of evidence-based prenatal yoga education into maternal health education programs.

Overall, this study demonstrates that prenatal yoga education represents an effective evidence-based educational strategy within continuity of midwifery care. Beyond reducing lower back pain, the intervention enhances maternal knowledge, self-management skills, physical comfort, psychological readiness, and overall maternal well-being. These findings support the wider implementation of prenatal yoga education as an integral component of antenatal health education to improve the quality of maternal healthcare services.

CONCLUSION

The findings of this study demonstrate that integrating prenatal yoga education into continuity of midwifery care contributed to significant improvements in maternal well-being during the third trimester of pregnancy. The participant experienced a progressive reduction in lower back pain intensity, improved physical comfort, increased confidence in preparing for childbirth, and positive pregnancy outcomes without maternal or neonatal complications. These findings indicate that evidence-based prenatal yoga education not only functions as a non-pharmacological intervention but also serves as an effective educational approach that enables pregnant women to acquire practical knowledge and self-management skills throughout pregnancy.

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From an educational perspective, this study highlights the importance of integrating evidence-based health education into continuity of midwifery care. Continuous interaction between healthcare professionals and pregnant women creates opportunities for individualized learning, reinforcement of health messages, and regular evaluation of behavioral changes. This educational process reflects the principles of women-centered care, where pregnant women actively participate in decision-making and become partners in maintaining their own health (Biana et al., 2021; Munthe et al., 2022). Furthermore, continuity of care facilitates long-term communication between midwives and mothers, allowing educational interventions to be delivered consistently throughout pregnancy, childbirth, postpartum care, newborn care, and family planning services.

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Despite these promising findings, several limitations should be acknowledged. This study employed a single-case report design involving only one participant, which limits the generalizability of the findings to broader populations of pregnant women. In addition, the evaluation relied primarily on clinical observations and descriptive outcomes without the use of standardized instruments to quantitatively assess maternal health literacy, self-efficacy, or educational achievement following prenatal yoga education.

The intervention was also conducted in a single primary healthcare center, where institutional characteristics, healthcare resources, and participant backgrounds may differ from other healthcare settings. Furthermore, the relatively short observation period did not permit evaluation of the long-term effects of prenatal yoga education on postpartum maternal health, sustained behavioral changes, or infant developmental outcomes. Therefore, future studies should involve larger and more diverse samples, adopt quasi-experimental or randomized controlled trial designs, utilize validated educational and psychological measurement instruments, and include longer follow-up periods. Such approaches would provide more robust evidence regarding the effectiveness of evidence-based prenatal yoga education in improving maternal well-being, strengthening maternal health literacy, and enhancing educational outcomes across different healthcare contexts.

Overall, this study demonstrates that prenatal yoga education represents an effective evidence-based educational strategy within continuity of midwifery care. Beyond reducing lower back pain, the intervention enhances maternal knowledge, self-management skills, physical comfort, psychological readiness, and overall maternal well-being. These findings support the wider implementation of prenatal yoga education as an integral component of antenatal health education to improve the quality of maternal healthcare services.

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