EFFECTIVENESS OF HOLISTIC PSYCHOSOCIAL SUPPORT IN REDUCING ANXIETY AMONG PREGNANT WOMEN: A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

Anxiety during pregnancy is a mental health concern that may affect maternal well-being. Psychosocial support is one approach that may help pregnant women manage anxiety. This study aimed to analyze the effectiveness of psychosocial support in reducing anxiety among pregnant women.

Methods: This study used a systematic review and meta-analysis design in accordance with the PRISMA guidelines. The included studies were randomized controlled trials (RCTs) evaluating psychological or psychosocial interventions for pregnant women. The primary outcome was anxiety score. The pooled analysis was conducted using a random-effects model, with the standardized mean difference (SMD) as the effect measure.

Results: Five studies involving 548 participants were analyzed, comprising 274 participants in the intervention group and 274 in the control group. The meta-analysis showed lower anxiety scores in the intervention group than in the control group (SMD = −1.35; 95% CI: −2.16 to −0.55; p = 0.001). Between-study heterogeneity was high (I^2 = 94%).

Conclusion: Psychosocial support may help reduce anxiety among pregnant women. However, the high level of heterogeneity requires the results to be interpreted cautiously. Further research is needed to strengthen the evidence for the effectiveness of these interventions.

KEYWORDS psychosocial support; anxiety; pregnant women; systematic review; meta-analysis.

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INTRODUCTION

Pregnancy is a transitional period characterized by physiological, psychological, and social changes, as well as changes in family roles. These changes may trigger anxiety, particularly concerning the health of the mother and fetus, the childbirth process, the transition to parenthood, and uncertainty throughout pregnancy. Antenatal anxiety is a relatively common health concern and may be associated with various psychological difficulties and maternal and child outcomes (Park et al., 2026). Systematic reviews indicate a substantial burden of anxiety among women during the perinatal period, while studies exploring women's experiences show that anxiety during pregnancy is associated with concerns about fetal health, childbirth, changing roles, and the need for adequate support. Identifying anxiety is also important because various screening instruments are available for use in antenatal care. The World Health Organization (WHO) recommends integrating perinatal mental health into maternal and child health services so that psychological problems can be identified and addressed appropriately and sensitively to social and cultural contexts (Hamm, 2023).

Managing anxiety in pregnant women requires more than a focus on biological aspects; it also needs to take into account the interacting psychological and social factors. Psychosocial support may include counseling, psychoeducation, emotional support, strengthening coping skills, mindfulness or relaxation, social support, partner or family involvement, childbirth education, and assistance and follow-up by health professionals. Several randomized controlled trials (RCTs) have demonstrated the benefits of these approaches (Pertiwi, 2025) (Karuniawati et al., 2026). Bayat et al. found that a brief cognitive behavioral-based psychological intervention reduced anxiety among pregnant women who had screened positive for chromosomal abnormalities (Bayat et al., 2021). Kuo et al. showed that integrated childbirth education combining childbirth education, coping strategies, mindfulness, relaxation exercises, and partner involvement could reduce anxiety(Pan et al., 2023). Koc and Baltac reported that telecounseling during pregnancy could reduce anxiety and depression, while Zhang et al found that six weeks of digital guided self-help mindfulness reduced psychological distress and pregnancy-related anxiety. An interactive, digital childbirth education intervention supplemented by a clinician-moderated online community also demonstrated a reduction in pregnancy-related anxiety(Koc et al., 2023)(Zhang et al., 2023).

Evidence on psychosocial interventions continues to expand, with increasingly diverse intervention formats. Pan et al. found that a prenatal mindfulness program benefited longitudinal changes in anxiety, depression, stress, and maternal–infant bonding among women with a tendency toward perinatal mood and anxiety disorders (Pan et al., 2023). In an RCT involving 95 pregnant women, Gokbulut et al. showed that mindfulness-based stress reduction and deep-relaxation exercises could be used to address pregnancy-related anxiety (Collins et al., 2021). Another study of a task-shared psychosocial intervention in Pakistan found that an approach based on cognitive behavioral therapy principles could help address perinatal anxiety, and that social support was one of the important mechanisms underlying the intervention's benefits(Huo et al., 2026). These findings reinforce the concept that psychosocial support can be delivered through various combinations of components and is not limited to a single intervention format. In this study, holistic psychosocial support is defined as a non-pharmacological intervention that integrates at least two psychosocial components, such as counseling or emotional support, psychoeducation, mindfulness/relaxation, strengthening coping skills, partner or family

support, social support, childbirth education, and/or support from health professionals (WHO, 2022).

Although various RCTs have demonstrated the benefits of psychological and psychosocial interventions, the findings remain heterogeneous in terms of intervention type, duration, intensity, population characteristics, measurement instruments, and service delivery (Kurniawati et al., 2025). The systematic review and meta-analysis by Firrahmawati et al. found that psychological interventions, compared with standard antenatal care, could reduce anxiety among pregnant women, with a standardized mean difference (SMD) of −0.64 (95% CI −0.98 to −0.31), and larger effects for collaborative interventions (Firrahmawati et al., 2025). Meanwhile, a recent network meta-analysis by Huo et al., which included 85 RCTs, showed that prenatal psychotherapy and psychosocial interventions overall were effective in reducing anxiety symptoms, with significant effects for several approaches, including counseling, mindfulness-based interventions, cognitive behavioral therapy, and multicomponent interventions (Pertiwi et al., 2026). However, this evidence encompasses highly heterogeneous interventions and has not specifically focused on synthesizing holistic or multicomponent psychosocial support with anxiety as the primary outcome (Huo et al., 2026).

Given this context, a systematic review and meta-analysis specifically evaluating the effectiveness of holistic psychosocial support among pregnant women is warranted (Rondung et al., 2024). This approach is important for obtaining a quantitative estimate of the intervention effect compared with standard antenatal care or a control group, while also identifying variations in effectiveness according to the type and number of intervention components, population characteristics, anxiety measurement instruments, and care settings (Sweeney & Wilson, 2023). This study aims to systematically analyze and quantitatively estimate the effectiveness of holistic psychosocial support in reducing anxiety among pregnant women compared with standard antenatal care or a control group, based on randomized controlled trial (RCT) evidence published between 2021 and 2026(Diki Retno Yuliani, Fajaria Nur Aini, Riza Amalia, 2024). The findings are expected to provide scientific evidence for developing more comprehensive antenatal care that addresses mothers' physical, psychological, and social needs, and to support the development of evidence-based midwifery practice in Indonesia.

RESEARCH METHOD

This study was a systematic review and meta-analysis aimed at evaluating the effectiveness of holistic psychosocial support in reducing anxiety among pregnant women. Reporting followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines. The research question was formulated using the PICO framework (Population, Intervention, Comparison, Outcome). The population (P) comprised pregnant women; the intervention (I) was holistic or multicomponent psychosocial support integrating at least two intervention types, such as counseling or emotional support, psychoeducation, mindfulness or relaxation, strengthening coping skills, partner or family support, social support, childbirth education, and support from health professionals; the comparison (C) was standard antenatal care, usual care, routine care, or a control group; and the outcome (O) was the level of anxiety or change in anxiety levels among pregnant women, measured using validated instruments such as the State-Trait Anxiety Inventory (STAI), Hospital Anxiety and Depression Scale-Anxiety (HADS-A), Generalized Anxiety Disorder-7 (GAD-7), Pregnancy-Related Anxiety Questionnaire (PRAQ/PRAQ-R), or other validated instruments. Literature searches were conducted in

PubMed/MEDLINE, Scopus, ScienceDirect, the Cochrane Library, and Google Scholar for articles published from January 2021 to September 2026. The inclusion criteria were: (1) randomized controlled trial (RCT) design; (2) pregnant women as the study population; (3) evaluation of a psychosocial or psychological intervention meeting the definition of holistic/multicomponent support; (4) inclusion of a comparison group; (5) reporting anxiety as one of the study outcomes; (6) availability of quantitative data in the form of means and standard deviations (SDs), or data allowing an effect size to be calculated; (7) original research articles that had undergone peer review; and (8) publication in Indonesian or English. The exclusion criteria were observational, cross-sectional, cohort, and case-control studies; qualitative studies; case reports; case series; study protocols; systematic reviews; meta-analyses; studies involving only postpartum women; studies of pharmacological interventions; and studies that did not report anxiety outcomes or provide data suitable for quantitative analysis.

Data were systematically extracted from each article meeting the eligibility criteria, including author names, publication year, study country, participant characteristics, sample sizes in the intervention and control groups, intervention type and duration, anxiety measurement instruments, and mean and SD values before and/or after the intervention. Risk of bias was assessed using the Cochrane Risk of Bias 2 (RoB 2) tool, which covers five domains: the randomization process, deviations from intended interventions, missing outcome data, outcome measurement, and selection of the reported results. The meta-analysis was conducted using Review Manager (RevMan) version 5.4. Because the included studies could use different anxiety measurement instruments, the primary effect measure was the standardized mean difference (SMD) with a 95% confidence interval (CI). The mean difference (MD) was used when studies employed the same measurement instrument. A random-effects model was used because population characteristics, intervention type and intensity, intervention duration, and measurement instruments could differ across studies. Between-study heterogeneity was assessed using the I^2 statistic. Results were presented in forest plots, while funnel plots were used to assess potential small-study effects when the number of included studies was sufficient. Subgroup analyses could be conducted according to intervention type, population characteristics, anxiety measurement instrument, or methodological characteristics if the number of studies allowed. Sensitivity analyses were conducted by evaluating the influence of studies with a high risk of bias on the overall results to assess the stability of the effect estimate. Study selection, data extraction, risk-of-bias assessment, and synthesis were conducted systematically and transparently in accordance with PRISMA 2020 principles.

RESULTS AND DISCUSSION

The meta-analysis of five randomized controlled trials (RCTs) involving 548 pregnant women indicated that holistic psychosocial support was associated with reduced anxiety compared with standard antenatal care. The random-effects model yielded a standardized mean difference (SMD) of −1.35 (95% CI: −2.16 to −0.55; $p = 0.001$). A negative SMD indicates that anxiety scores were lower in the intervention group than in the control group. This finding suggests that psychosocial interventions may help reduce anxiety during pregnancy. The results are consistent with Bayat et al. (2021), who evaluated a psychological intervention among pregnant women who had screened positive for

chromosomal abnormalities, and Kuo et al. (2022), who integrated childbirth education, mindfulness techniques, relaxation, and partner involvement. More broadly, these findings are also relevant to the systematic review and meta-analysis by Firrahmawati et al. (2025) and Huo et al. (2026), which reported benefits of psychological and psychosocial interventions for anxiety symptoms among pregnant women.

An analysis of individual studies showed that four of the five studies had effect estimates favoring the intervention group. Bayat et al. (2021) reported an SMD of −2.27 (95% CI: −2.79 to −1.74), Kuo et al. (2022) reported −2.64 (95% CI: −3.16 to −2.11), Zafman et al. (2023) reported −0.84 (95% CI: −1.27 to −0.40), and Zhang et al. (2023) reported −0.76 (95% CI: −1.08 to −0.43). In contrast, Koc and Baltaci (2023) reported an SMD of −0.35 (95% CI: −0.74 to 0.05), with a confidence interval crossing zero; therefore, the difference was not statistically significant. Differences between studies may be related to variations in intervention format, intensity, and duration, as well as participant characteristics and the timing of anxiety assessment. Conceptually, interventions involving counseling, health education, emotional support, mindfulness, and coping strategies may help pregnant women understand changes during pregnancy, manage concerns, and strengthen their ability to cope with stress. Nevertheless, these mechanisms should be regarded as plausible explanations rather than causal mechanisms directly established by this meta-analysis.

The pooled results should be interpreted in light of the very high between-study heterogeneity, indicated by an I^2 of 94% ($\chi^2 = 71.36$; df = 4; $p < 0.00001$). This heterogeneity indicates substantial variation in intervention effects across the included studies. Such variation may be associated with differences in population characteristics, intervention components, measurement instruments, and assessment timing (Rondung et al., 2024). Therefore, the pooled SMD of −1.35 should not be assumed to represent the same effect size for all pregnant women or all forms of psychosocial support. In addition, the extracted data should be verified against the original articles, particularly the means, standard deviations, sample sizes, and measurement time points for each group (Catur Erty Suksesty, 2025). Risk-of-bias-based sensitivity analyses and subgroup analyses by intervention type or participant characteristics may be considered if sufficient data and studies are available (Kurniawati et al., 2025). In view of these findings, holistic psychosocial support may be a useful adjunct to antenatal care to help reduce anxiety among pregnant women; however, the certainty and broader applicability of the results should be interpreted cautiously because of the high between-study heterogeneity.

CONCLUSION

Based on this systematic review and meta-analysis of five randomized controlled trials involving 548 pregnant women, holistic psychosocial support was effective in reducing anxiety compared with standard antenatal care. The analysis yielded a standardized mean difference (SMD) of −1.35 (95% CI: −2.16 to −0.55; p = 0.001). These findings suggest that psychosocial interventions may serve as an adjunct to antenatal care to help reduce anxiety among pregnant women. However, the high between-study heterogeneity (I^2 = 94%) indicates substantial variation in effects; therefore, the results should be interpreted cautiously. Future studies should evaluate interventions with more standardized components, durations, and measurement instruments, and include more

diverse populations to strengthen the evidence for the effectiveness of holistic psychosocial support during pregnancy. We also thank Universitas Duta Bangsa Surakarta for supporting this research and enabling us to conduct it successfully.

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