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The impact of pregnancy-related anxiety on maternal and child health in low- and middle-income countries: A systematic review

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Corresponding author:
Ahamad Salman Amathullah

amathullahsalman99@gmail.com

Author Affiliation:
Faculty of Graduate Studies,
University of Colombo.

Amathullah, AS; Rishard, M; Hettigoda, K; Wijesinghe, MSD.

ADMINISTRATIVE INFORMATION

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Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 6 December 2024 and was last updated on 6 December 2024.

INTRODUCTION

Review question / Objective 1) What are the impacts of Pregnancy related Anxiety on maternal health in Low Middle Income Countries? 2) What are the impacts of Pregnancy related Anxiety on child health in Low Middle Income Countries?

Rationale Existing systematic reviews have examined maternal anxiety, but many have important limitations. For example, Rees et al.[4] reviewed the impact of maternal anxiety during pregnancy and after childbirth on children's emotional health and found that it negatively affected children, particularly during early and middle childhood. However, their review mainly included studies from high-income countries, and none from LMICs. Other reviews such as those by Staneva et al. [5], Grigoriadis et al. [6], and Ding et al. [1] also included only a small number of studies from LMICs, limiting their ability to provide insights relevant to these settings.This research gap leaves important questions regarding the effects of PRA on LMICs. Furthermore, most systematic reviews have focused on specific outcomes, such as preterm birth or child emotional health, without addressing the broader effects of PRA on maternal and child health.This systematic review aims to address these gaps by focusing specifically on PRA in LMICs. It explores both maternal and child health outcomes to provide a complete picture of how PRA affects health in these settings. By following rigorous methods and including studies from LMICs, this review seeks to provide useful evidence for healthcare providers and policymakers to develop targeted interventions to improve the health and well-being of mothers and children in these regions.

Condition being studied Pregnancy is a significant period in a woman's life that brings about physical, emotional, mental, and social change. Although it is often seen as a joyful time, many women experience anxiety and distress, which can negatively affect the health of both

mothers and children [1]. Pregnancy-related anxiety (PRA) refers to the specific worry and stress a pregnant woman feels about matters such as the baby's development, changes in her body, breastfeeding, labour, and delivery [2]. PRA is distinct from general anxiety, as it focuses entirely on pregnancy-related concerns and has specific impacts on health outcomes.

Pregnancy-related anxiety is a particularly serious issue in low- and middle-income countries (LMICs). Factors such as poverty, cultural attitudes, gender discrimination, limited healthcare services, and stigma surrounding mental health issues contribute to a higher risk of PRA in these settings [3]. Despite this, most research on PRA has been conducted in high-income countries, where healthcare systems and mental health resources are better developed. This makes it difficult to fully understand the effect of PRA on LMICs.

METHODS

Participant or population No patients are utilized. Previous literature papers were utilized.

Intervention Not applicable.

Comparator Not applicable.

Study designs to be included Cohort studies/ observational studies.

Eligibility criteria Studies published between 2018 and 2024, written in English, conducted in LMICs as classified by the World Bank, and focused on PRA and its association with maternal and/or child health outcomes were included. Both quantitative and qualitative studies were considered eligible for inclusion in the study. Exclusion criteria included review articles, editorials, conference abstracts, and commentaries, as well as studies conducted in non-LMIC settings, those unrelated to PRA or health outcomes, and those not available in full text or written in English.

Information sources A comprehensive search strategy was implemented across five databases: PubMed, SCOPUS, MEDLINE, Google Scholar, and Elsevier. Search terms included a combination of keywords such as "antenatal anxiety," "maternal anxiety," "prenatal anxiety," "pregnancy-related anxiety," "birth outcomes," "low birth weight (LBW)," "preterm birth," "gestational age," "maternal health outcome," "child health outcome," "neonatal health outcome," "breastfeeding," and "LMIC." Boolean operators (AND/OR) were used to refine the search results. Additionally, the reference lists of the included studies were manually screened to identify eligible articles. An initial search retrieved 91 articles, of which 20 were selected for final inclusion after removing duplicates and applying eligibility criteria.

Main outcome(s) Not applicable.

Additional outcome(s) Not applicable.

Data management A comprehensive search strategy was implemented across five databases: PubMed, SCOPUS, MEDLINE, Google Scholar, and Elsevier. Search terms included a combination of keywords such as "antenatal anxiety," "maternal anxiety," "prenatal anxiety," "pregnancy-related anxiety," "birth outcomes," "low birth weight (LBW)," "preterm birth," "gestational age," "maternal health outcome," "child health outcome," "neonatal health outcome," "breastfeeding," and "LMIC." Boolean operators (AND/OR) were used to refine the search results. Additionally, the reference lists of the included studies were manually screened to identify eligible articles. An initial search retrieved 91 articles, of which 20 were selected for final inclusion after removing duplicates and applying eligibility criteria. Owing to the heterogeneity in study designs, populations, and outcomes, a narrative synthesis was conducted to summarise the findings. The synthesis focused on the impact of PRA on maternal and child health outcomes in LMICs, highlighting the key trends and patterns across the included studies.

Quality assessment / Risk of bias analysis The quality of the included studies and the risk of bias were assessed using the Risk of Bias in Non-randomised Studies – of Exposure (ROBINS-E) tool [14]. This tool evaluates bias across seven domains: bias due to confounding, bias arising from measurement of the exposure, bias in the selection of participants into the study, bias due to post-exposure interventions, bias due to missing data, bias arising from measurement of the outcome, and bias in the selection of the reported result. Each domain was independently assessed by two reviewers and discrepancies were resolved through consensus. The overall risk of bias for each study was categorised as low, moderate, high, or very high, based on domain-level assessments.

Strategy of data synthesis Owing to the heterogeneity in study designs, populations, and outcomes, a narrative synthesis was conducted to summarise the findings. The synthesis focused on the impact of PRA on maternal and child health

outcomes in LMICs, highlighting the key trends and patterns across the included studies.

Subgroup analysis Not applicable.

Sensitivity analysis Not applicable.

Language restriction The language is only English.

Country(ies) involved Sri Lanka.

Other relevant information The review provides the main tables on summary about the articles, PRISMA flowchart, and risk bias assessment. Further, as supplementary information, a detailed description of search strategies and the PRISMA checklist are provided.

Keywords Pregnancy complications, anxiety disorders, maternal health, child health, low-and middle-income countries.

Dissemination plans By publishing the Systematic literature in reputed journal.

Contributions of each author

Author 1 - Ahamad Salman Amathullah - The author conceptualized and planned this reviev and conducted the preliminary literature search, summarized the findings, and drafted the manuscript.
Email: amathullahsalman99@gmail.com
Author 2 - Mohamed Rishard - The author conceptualized and planned this review.Further, reviewed the article and provided the corrections and comments.
Email: rishi7875@yahoo.com
Author 3 - Kanthi Hettigoda - The author conceptualized and planned this review.Further, reviewed the article and provided the corrections and comments.
Email: kanthihettigoda@gmail.com
Author 4 - Supun Wijesinghe - The author contributed in the analysis and interpretation of the data for the work and reviewed the article and provided the corrections and comments.
Email: supun.dilara@gmail.com