



Medication Burden in Pregnancy: A Systematic Review of Polypharmacy, Definitions, and Maternal–Fetal Outcomes

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INTRODUCTION

- Medication use during pregnancy is common, especially in individuals with chronic or complex conditions.
- However, polypharmacy remains poorly defined and characterized. Multiple medications raise concerns for drug interactions and fetal risk, while undertreatment of maternal conditions can also lead to adverse outcomes.
- A better understanding of polypharmacy is essential to guide safe and effective care for both mother and fetus.

OBJECTIVES

- To determine the prevalence and varying definitions of polypharmacy during pregnancy.
- To characterize patterns and clinical features of medication use among pregnant individuals.
- To evaluate the association between polypharmacy and maternal comorbidities as well as fetal outcomes.

METHODS

- This systematic review was conducted in accordance with PRISMA guidelines. Observational studies examining medication use during pregnancy were included if they reported polypharmacy, as defined by study authors or by use of ≥ 2 medications, among pregnant women in any trimester. Searches of PubMed, MEDLINE, EMBASE, CINAHL, Cochrane Library, and EBSCOhost identified 3,134 records. All citations were imported into Covidence systematic review software for duplicate removal, screening, and study selection. After systematic search only five studies met inclusion criteria.
- Study designs included prospective and retrospective cohorts, cross-sectional studies, and an ICU-based observational study conducted in the United States, France, Ireland, and Brazil. Risk of bias was assessed using the Newcastle–Ottawa Scale. Due to heterogeneity in study design, exposure definitions, and outcomes, a narrative synthesis was performed

RESULTS

- Across more than 3 million pregnancies, polypharmacy prevalence varied substantially by population and definition. In U.S. survey data, polypharmacy defined as use of more than one prescription medication occurred in 7.4% of pregnant women and increased from 2.8% in 1999–2000 to 10.0% in 2015–2016. In a U.S. cohort of nulliparous women, polypharmacy defined as use of ≥ 5 medications occurred in 30.5%, while 97.1% reported use of at least one medication during pregnancy. Polypharmacy was consistently associated with chronic conditions, including asthma, hypertension, diabetes, and psychiatric disorders.
- Most prevalent among medically complex or hospitalized patients. Few studies directly evaluated maternal, fetal, or infant outcomes.

DISCUSSION

- Polypharmacy in pregnancy is common but inconsistently defined, with higher prevalence among medically complex patients.
- Evidence on maternal and fetal outcomes remains limited, restricting safety assessment and clinical guidance.
- Standardized definitions and outcome-focused research are needed to support safer prescribing practices.
- Improved data will help optimize both maternal health and fetal safety.

CONCLUSIONS

- Polypharmacy during pregnancy is common, especially among women with chronic or complex conditions. Prevalence varies widely due to inconsistent definitions and medication criteria.
- Existing evidence focuses more on exposure patterns than clinical outcomes. Standardized, pregnancy-specific definitions and outcome-focused research are needed to guide safer prescribing and counseling.