

A systematic review of interventions to increase adherence to medication in pregnancy.

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Background

- Increasingly, women are using medications for acute and chronic indications during pregnancy such as aspirin to reduce pre-eclampsia risk¹ and medications for inflammatory conditions².
- Optimised medication adherence to achieve quiescent disease is often recommended before conception.
- Sub-optimal adherence to medication in pregnant women can adversely impact maternal health, and perinatal outcomes.
- Recent studies suggest high rates of non-adherence^{3,4}
- Systematic reviews of adherence interventions typically exclude pregnant women.
- Women's reasons for non-adherence may differ from the wider population, and therefore different interventions may be needed.

Objectives

We aimed to evaluate the evidence for the effectiveness of interventions to promote medication adherence in women who are pregnant or planning pregnancy on maternal disease-related, perinatal and adherence outcomes.

Inclusion criteria

- ✓ Pregnant or pre-conceptual women
- ✓ Chronic disease or obstetric indication (excl. mental health, addiction)
- ✓ Any intervention (patient- or staff-directed)
- ✓ Any design- experimental or observational
- ✓ Any income setting
- ✓ Perinatal outcome, maternal disease, objective and self-reported adherence

Method

- Systematic review
- Six bibliographic databases and two trial registries searched from inception to end January 2020.
- Two reviewers systematically selected studies and extracted data relating to:
 - Study characteristics
 - Outcomes
 - Effectiveness
 - Quality of intervention description (TiDier)
 - Risk of Bias (EPOC)
- Narrative synthesis was conducted due to heterogeneity patient group, outcomes assessed and outcome measures.
- Inclusion criteria are presented in the grey box.

Conditions and setting:

Asthma (n=2)^{5,6}; Inflammatory bowel disease (n=1)⁷ HIV (n=4)^{8,9,10,11},
High income or higher middle income (n=5); Low income (n=2)

Designs:

Randomised controlled trials (n=3)^{8,10,11}
Non-randomised comparative (n=4)^{5,6,7,9}

7 Studies

Intervention type:

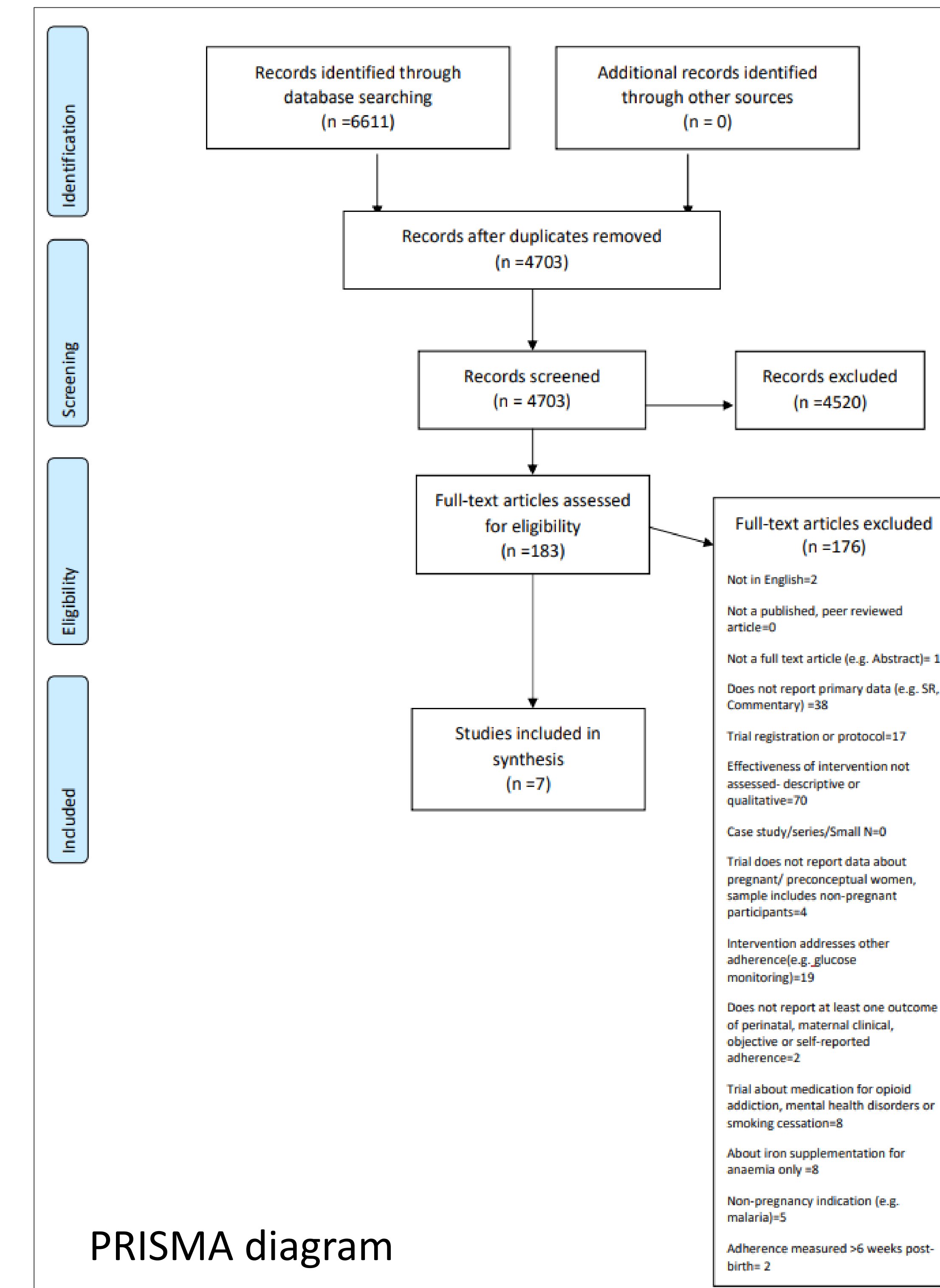
Education +/- other (counselling, action plans, psychosocial support, cognitive behavioural skills; n=6)^{5,6,7,8,10,11}
Financial incentives (n=1)⁹

Outcomes assessed:

Maternal disease related (n=5)^{5,6,7,9,11}
Perinatal (n=4)^{6,7,9,10}
Self reported adherence (n=4)^{5,6,7,8}
Objective adherence (n=4)^{5,8,10,11}

Risk of bias and intervention reporting quality

- Six studies were at high risk of bias in at least one EPOC domain, and one study had unclear risk of bias.
- There was inadequate reporting of interventions to allow replication across the criteria in the TiDieR checklist.



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Findings

- 4 studies demonstrated potential effectiveness for at least one outcome of interest:
 - ❖ One RCT found an educational video was effective for self-reported adherence to HIV medication but not objective adherence (pill count).⁸
- ❖ Two non-randomised studies found that intervention was associated with adherence outcomes:
 - Preconception counselling in IBD was associated with birth weight, disease control, objective and self-reported adherence.⁷
 - A close-monitoring intervention for women with asthma was associated with increased control, and objective and self-reported adherence.⁵
- ❖ A before and after study found an association between receiving an education intervention and self-reported adherence to asthma medication, but not disease control.⁶

Conclusions

- We identified a dearth of high-quality RCTs evaluating medication adherence interventions for pregnancy.
- Our findings are consistent with adherence reviews in other domains.
- We could not synthesise the available evidence due to considerable heterogeneity in interventions tested, outcomes assessed and measures used.
- Future RCTs are needed and should adhere to reporting guidelines and be informed by core outcome sets to support replication and evidence synthesis.
- They should assess maternal disease-related, perinatal and adherence outcomes to ensure clinical benefit.
- We used inclusive selection criteria and a pre-registered protocol to ensure capture of as much relevant data as possible.
- Study identification may have been limited by poor indexing of adherence studies.