

**BAYESIAN META-ANALYSIS ON PREVENTIVE  
INTERVENTIONS FOR POSTNATAL DEPRESSION**

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**ABSTRACT**

This study applied a Bayesian hierarchical model to synthesize the results of fifteen (15) randomized clinical trials of preventive psychosocial or psychological interventions identified in a meta-analysis done by Dennis (2005). Results using Bayesian meta-analysis were compared with those obtained using the classical procedure. Meta-analysis was performed using odds ratio as the measure of effect size for binary outcomes and weighted mean differences for continuous outcome measures, both with 95% credibility intervals. The main outcome measure was postnatal depression at last assessment reviewed across all 15 studies and across trials that used the Edinburgh postnatal depression scale (EPDS) with the recommended 12/13 cut-off score. Comparison of trials was also performed for postnatal depression at 8, 16 and 24 weeks. There was no statistically significant beneficial effect on the prevention of postnatal depression in the meta-analysis of all types of interventions (0.67, 0.13 to 3.42). Similar non-significant effect was observed based on a weighted mean difference among the trials that provided a mean score on the EPDS (-0.21, -0.75 to 1.31). To examine potential measurement differences, a random effects model was used to directly compare trials that used the EPDS with the recommended 12/13 cut-off score and found no preventive effect (0.81, 0.18 to 3.51). Similarly, no statistically significant short term, intermediate or longer term effects were observed across all trials (0.69, 0.09 to 5.55; 0.67, 0.11 to 3.98; 1.00, 0.23 to 4.28) and those that used EPDS > 12 (1.01, 0.12 to 8.39; 0.67, 0.09 to 5.35; 0.97, 0.20 to 4.77). Thus, diverse psychosocial or psychological interventions do not significantly reduce the number of women who develop postnatal depression. Differences between Bayesian OR and classical RR estimates vary from 2% to 17%. Most of the Bayesian OR estimates are lower than their classical RR counterparts. The 95% credibility intervals have wider widths thereby overlapping the confidence intervals. The widths of the 95% confidence intervals are about 7% to 21% of the credibility intervals. Conclusions are similar for results based on Bayesian and Classical procedures.

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