Women’s groups practising participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis


CRD summary
The authors stated that women’s groups practising participatory learning and action led to substantial reductions in newborn and maternal death rates in rural, low-resource settings (developing countries). Despite some concerns about variation in the results, the authors’ conclusions reflect the findings and are likely to be reliable.

Authors’ objectives
To evaluate the effects of women’s groups practising participatory learning and action, compared with usual care, on birth outcomes in low-resource settings.

Searching
Eight databases (including PubMed and The Cochrane Library) were searched up to October 2012 with no language restrictions. Search terms were reported. Additional unpublished data were sought through contacting researchers known to be active in the field.

Study selection
Randomised controlled trials (RCTs) that evaluated interventions containing the stages of a participatory learning and action cycle which included women mostly of reproductive age (15 to 49 years) were eligible for inclusion. Outcomes of interest included maternal mortality, neonatal mortality, and stillbirths.

The included trials were conducted in developing countries (Bangladesh, India, Malawi, and Nepal). Nearly all interventions were delivered in rural areas. Most trials involved monthly women’s groups meetings coordinated by facilitators who were local women and not health workers. Facilitators received seven to 11 days of basic training. In all trials, both intervention and control cluster groups had context-specific health services strengthening. Definitions of outcomes were the same across the trials.

Studies were selected independently by two reviewers, with disagreements resolved through consensus.

Assessment of study quality
Trial quality was assessed using the Cochrane risk of bias tool and the CONSORT statement extension for cluster-RCTs.

Two reviewers assessed the quality of the trials independently, then checked and verified one another’s results.

Data extraction
Outcomes data were extracted using the main estimates reported in each trial, taking into account adjustments for covariates. Extracted data were used to calculate odds ratios. Trial authors were contacted for clarification as needed.

Two reviewers independently extracted, checked and verified the data.

Methods of synthesis
Trials were pooled using a random-effects meta-analysis.

Subgroup analyses and meta-regression analyses were conducted to identify possible predictors of effect, including population coverage of women’s groups, proportion of pregnant women participating, and background mortality and institutional delivery rates in the control areas. In case of significant heterogeneity (I²>50%), trials were separated into groups according to the results of the meta-regression analyses.

Publication bias was assessed using funnel plots and Egger tests.
Results of the review
Seven cluster-RCTs were included (119,428 births). Trials were considered to be of good quality and at low risk of bias. All trials were found to have appropriate randomisation, accounted for the effect of clustering, had no loss of clusters at follow-up, and used intention-to-treat analyses. There was a low risk of selective reporting of outcomes. However, there was a high risk bias associated with blinding of participants and personnel, and blinding of outcome assessment in all trials. Baseline differences between groups (arms) were found in all trials, although the associated risk of bias was considered high in only one trial.

Women’s groups were associated with statistically significant reductions in neonatal mortality (OR 0.80, 95% CI 0.67 to 0.96; $I^2=73.2\%$), and perinatal mortality (OR 0.86, 95% CI 0.79 to 0.95; $I^2=44.2\%$). Results for early neonatal mortality (OR 0.78, 95% CI 0.64 to 0.95; $I^2=66.4\%$) and late neonatal mortality (0.81, 95% CI 0.66 to 0.99; $I^2=35.0\%$) also significantly favoured the intervention. There was a non-statistically significant reduction in maternal mortality (OR 0.77, 95% CI 0.48 to 1.23; $I^2=64.0\%$) and stillbirths (OR 0.93, 95% CI 0.82 to 1.05; $I^2=30.7\%$) favouring the intervention.

Subgroup analyses found significant positive results for maternal mortality (OR 0.51, 95% CI 0.29 to 0.89; $I^2=45.6\%$) and neonatal mortality (OR 0.67, 95% CI 0.60 to 0.75; $I^2=0\%$) for groups where at least 30% of pregnant women attended, but not for groups where less than 30% attended.

Additional results of subgroup analyses and meta-regression were reported. Some of the results were reported in a separate online appendix.

Cost information
The intervention was found to be cost-effective by World Health Organization (WHO) standards from a provider's perspective. The authors stated that the intervention could save an estimated 283,000 new-born infants and 36,600 mothers per year if implemented in rural areas of 74 Countdown countries (of the 75 countries that, together, accounted for more than 95% of all maternal, new-born, and child deaths).

Authors' conclusions
Women's groups practising participatory learning and action led to substantial reductions in neonatal and maternal mortalities in rural, low-resource settings.

CRD commentary
The review question and selection criteria were clear. A large number of bibliographic sources were consulted, and attempts were made to identify unpublished studies. Attempts were made to minimise the risk of reviewer error and bias throughout the stages of the review.

Trial quality was assessed using appropriate tools. Trials were considered to be of good quality and at low risk of bias. The number of recorded births was very high. The methods of analysis appeared appropriate. Attempts were made to explore heterogeneity, which was significant in several analyses. However, results of subgroup and meta-regression analyses should be interpreted cautiously given the methodological limitations associated with them.

Despite some concerns about trial quality and heterogeneity, the authors' conclusions reflect the findings and are likely to be reliable.

Implications of the review for practice and research
Practice: The authors stated that policy makers should consider women’s groups as a core strategy to complement efforts made to improve safer motherhood and new-born care through better midwifery and obstetric care in rural areas of Countdown countries.

Research: The authors did not state any implications for research.

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