Psychosocial preventive interventions to reduce depressive symptoms in low-SES women at risk: a meta-analysis
van der Waerden JE, Hoefnagels C, Hosman CM

CRD summary
The review concluded that promising psychosocial preventive programmes had been developed specifically to reduce the level of depressive symptoms in women with low socioeconomic status, a population at high risk of developing major depression. Evidence limitations made the reliability of the authors' conclusions unclear.

Authors' objectives
To evaluate the efficacy of psychosocial preventive interventions in reducing depressive symptoms in women with low socioeconomic status at risk of depression.

Searching
PubMed, PsycINFO, ERIC and Web of Science were searched from January 1995 to April 2009 for publications in English, French, German and Dutch; search terms were reported. Bibliographies of retrieved articles were handsearched. Experts in the field were contacted for additional studies.

Study selection
Eligible studies were randomised controlled trials (RCTs) or quasi-experimental studies of interventions aimed at selective or indicated depression prevention. Studies included psychological, social or physical interventions and policy actions compared with treatment as usual or a different intervention in adult low socioeconomic status women of any ethnicity. Eligible studies needed more than 70% of participants to be living in economically deprived conditions (such as depending on welfare, living under the poverty line or in the lowest income category), have low educational achievement (≤12 years of formal education) or be unemployed. Interventions had to be aimed at high-risk women or women with elevated depression symptoms. Studies aimed specifically at women with depressive disorders were excluded. The primary outcome was depression symptom levels.

The most common intervention was psycho-education using cognitive-behavioural techniques, stress-management or counselling activities; other studies used interpersonal therapies and social support. Interventions were adapted or designed for socioeconomic status women in 71% of studies. Most interventions were delivered as group courses, but 36% studies had individual in-home sessions or telephone support. Interventions were delivered by health professionals or trained non-professionals and lasted from four to 52 weeks, with booster sessions in 29% studies. Comparison groups included usual care, information only and different interventions (one study). Participants included pre- or post-partum women and women with children. Mean age was 27.9 years. Most studies were of participants of various ethnic groups in developed English-speaking countries (particularly USA); three were of specific ethnic groups in Turkey, Mexico and Pakistan. Participants with major depression were excluded using a clinical diagnosis in half of the studies. In the other studies, risk status was identified using self report alone, self report with questions on antidepressant drug or therapy use, or by targeting high-risk women with no baseline assessment. Measures of depression symptoms varied.

Two independent reviewers performed the selection. Initial screening of abstracts was performed by one reviewer. A second reviewer independently rated a random sample of 25% abstracts.

Assessment of study quality
Methodological quality was assessed using Agency for Healthcare Research and Quality (AHRQ) criteria for description of study population, random assignment, allocation concealment, intention-to-treat analysis, drop-outs and follow-up data reported. Authors assessed whether the study was described adequately and used appropriate statistical analyses. The maximum study score was 14 points.

Two independent reviewers performed the assessment. Differences were resolved by discussion. Agreement between reviewers was measured using Cohen's kappa.
Data extraction
Standardised mean differences in symptom scores were determined and adjusted for bias and reported using Hedges’ g. Data were modified so that a positive effect indicated an improvement in the intervention group. Where there was more than one outcome measure, effect sizes were standardised and averaged to give a single effect size per study.

Two independent reviewers performed data extraction. Disagreements were resolved by discussion.

Methods of synthesis
Hedges’ g values were pooled giving 95% confidence intervals (CIs) and weighted using the method of Lipsey and Wilson. Between-study heterogeneity was determined using Q and $\chi^2$ statistics. Univariate subgroup and meta-regression analyses using mixed-effects models were used to assess moderator influence on effect size. Potential sources of heterogeneity investigated included study sample characteristics, intervention characteristics and study design. Publication bias was assessed using the method of Egger et al. and visually using funnel plots. Failsafe N was determined to assess the robustness of findings. Effect sizes were determined immediately after the intervention (pre-post) and at follow-up.

Results of the review
Fourteen studies were identified (1,396 participants, range 16 to 300): 13 RCTs and one quasi-experimental study (118 participants). The RCTs all allocated interventions to particular health institutions; subjects were not subsequently randomised to different interventions. Mean study quality was 10.6 points (range 8 to 13). Eight studies reported data at follow-up (range one to 24 months, most commonly six or 12 months).

The overall pooled effect size was significant (g 0.31, 95% CI 0.17 to 0.45, $\chi^2=32.9\%$; 14 studies), estimated as small to moderate. Six times the number of studies would be needed to reduce the finding to a null effect (failsafe N). The effect size was still significant after removal of one outlier from the analysis (g 0.27, 95% CI 0.15 to 0.38).

Subgroup and meta-regression: Mean age of participants (14 studies), marital status (13 studies) and prenatal versus other timing were not significantly related to effect size. The effect was significant for prenatal (seven studies) and postnatal studies (seven studies).

Intervention characteristics: Psycho-education (seven studies) and social support interventions (three studies) both had significant effects but interpersonal therapy was not significant (four studies). Both individual (five studies) and group (nine studies) delivery and both community centred (nine studies) and home-based (five studies) interventions had a significant effect. There was no relation between effect size and intervention duration (14 studies). Studies with no booster sessions (10 studies) had a significant effect and those with boosters (four studies) did not. Effects were significantly greater with delivery by nurse (three studies) and trained non-professionals (three studies) than for mental health professionals (eight studies) but the difference was no longer significant when an outlier study was removed from the analysis.

Study characteristics: There was no significant relationship between effect size and study quality (14 studies) and no difference for studies that did or did not exclude participants with depression at baseline or where control groups were care as usual (nine studies), information only (four studies) and alternative interventions (one study).

Effects over time: There were no significant differences in effect size post intervention or at follow-up. Effects were not significant at six-month (five studies) and 12-month (four studies) follow-up. Overall effect size at follow-up showed a trend that declined over time (eight studies).

There was no evidence for publication bias.

Authors’ conclusions
Promising programmes had been developed specifically to reduce the level of depressive symptoms in women with low socioeconomic status, a population at high risk of developing major depression. On average these programmes reduced the level of depressive symptoms and more than half showed medium to large effect sizes.

CRD commentary
The review addressed a well-defined question in terms of participants, interventions, study design and relevant
outcomes. Relevant databases were searched in four languages and a limited search was made for unpublished studies, which implied that some relevant studies may have been missed. There was no evidence for publication bias. Study quality was assessed using suitable criteria and was considered to be adequate. Efforts were made to reduce error and bias during most review processes. Relevant study details were reported but some result details were omitted. Statistical heterogeneity was assessed.

The statistical method used for the meta-analysis seemed appropriate. Suitable subgroup/sensitivity analyses were performed. The authors stated that there were no differences in effect sizes between intervention programme types, yet provided relevant data and did not explain why this was discounted. The authors commented that some studies could have been included in which patients with depressive illness had not been diagnosed, especially where self-report questionnaires were used.

Potential limitations in the review process and evidence made the reliability of the authors' conclusions unclear.

Implications of the review for practice and research

Practice: The authors advocated use of multi-component interventions to alleviate stress and depression.

Research: The authors identified a need for future rigorous RCTs to find the characteristics of successful programmes, reveal the relevance of intervention provider for groups with low socioeconomic status, increase knowledge of moderators of effects, address women past childbearing age with low socioeconomic status in low- and middle-income countries and address long-term follow-up. Research should generate knowledge of ways of overcoming structural and personal barriers to use of mental services among women with low socioeconomic status.

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