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## **Maternal substance use and integrated treatment programs for women with substance abuse issues and their children: a meta-analysis**

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### **CRD summary**

The authors stated that integrated programmes for women with substance abuse and their children were associated with significant reductions in substance abuse. However, integrated programmes were not significantly more effective than non-integrated programmes. This was a reasonably well-conducted review, but methodological limitations and uncertainties in the included studies suggest that the authors' conclusion should be interpreted with caution.

### **Authors' objectives**

To evaluate the effect of integrated treatment programmes on maternal substance abuse and the impact of outcomes in women and their children.

### **Searching**

PsycINFO, MEDLINE, EMBASE, CINAHL, Web of Science, Proquest Dissertations and Sociological Abstracts were searched for published studies in English. Search terms were reported. Reference lists of relevant articles were screened for additional studies. Nine topic-related journals were handsearched. Grey literature was sought via technical reports and unpublished data. Researchers were contacted for further published or unpublished material.

### **Study selection**

Randomised controlled trials (RCTs) and quasi-experimental studies that compared integrated (comprehensive) programmes to non-integrated programmes or no treatment were eligible for inclusion as were cohort studies that included pre-post measures of maternal substance abuse in pregnant or parenting women with substance use problems. Treatment programmes had to include at least one substance use treatment and at least one child (<16 years) treatment service. Outcomes of interest were length of stay, treatment completion, maternal substance abuse and maternal or child well-being. Smoking cessation programmes were excluded.

Included studies were published between 1990 and 2007. The various substance use measures included urine toxicology and self report measures (such as Addiction Severity Index), percentage of those abstaining from substance abuse, frequency and change of use and cost and negative outcomes of addiction. Integrated programme content was not presented clearly; non-integrated treatment programmes included standard care comprising methadone treatment, outpatient care and co-ed residential treatment.

It appeared that more than one reviewer carried out the study selection. Disagreements were resolved by consensus.

### **Assessment of study quality**

The quality of RCTs was assessed using the Jadad scale with a maximum of five points awarded to cover randomisation, blinding and withdrawals/dropouts. Non-randomised studies were assessed using the Newcastle-Ottawa Scale with a maximum award of nine points covering study group selection, comparability and outcome ascertainment.

Two reviewers carried out the quality assessment. Disagreements were resolved by consensus.

### **Data extraction**

Data were extracted and transformed to the standardised mean difference (SMD), along with 95% confidence intervals (CI). Authors were contacted for missing data.

One reviewer extracted data and a sample was extracted by two reviewers. Disagreements were resolved by consensus.

### Methods of synthesis

Where appropriate, standardised mean differences were weighted by inverse variance and pooled in a meta-analysis using a fixed-effect model where statistical heterogeneity was absent and a random-effects model in the presence of statistical heterogeneity (measured by  $X^2$ ). Heterogeneity was explored in a moderator analysis with participants, programmes and study design/quality as potential variables. Rosenthal's file drawer method was used to assess publication bias. The completeness of the search was assessed using the capture-recapture method.

### Results of the review

The review included three RCTs (n=250 participants), nine quasi-experimental studies (n=2,105) and nine cohort studies (n=856). Study quality was interpreted as low to moderate for all study designs.

Compared to no treatment, integrated programmes were significantly more effective in terms of negative urine toxicology screens and reduced alcohol and drug use. Standardised mean differences ranged from 0.18 to 1.41 (two studies). Pre- and post-intervention data (10 studies) showed that maternal substance use decreased in women who received integrated programmes, with statistically significant standardised mean differences of 0.40 (95% CI 0.31 to 0.48; five studies) for the alcohol composite and 0.65 (95% CI 0.57 to 0.74; five studies) for the drug composite measure. There was no statistically significant heterogeneity. Integrated programmes also resulted in a significantly reduced number of days of substance use (SMD 0.52, 95% CI 0.25 to 0.80; four studies). Statistically significant heterogeneity prompted the moderator analysis, the results of which did not materially alter the main findings.

The comparison of integrated versus non-integrated programmes showed no statistically significant differences in urine toxicology or self-reported abstinence (10 studies).

There was no evidence of publication bias.

### Authors' conclusions

Integrated programmes for women with substance abuse and their children were associated with significant reductions in substance abuse. However, integrated programmes were not significantly more effective than non-integrated programmes.

### CRD commentary

The review question was clear and supported by broad but reproducible inclusion criteria. The literature search included relevant sources of published and unpublished studies. The possibility of language bias could not be ruled out. The review process was carried out with some attempts to minimise error and bias. Appropriate quality assessment tools were used to evaluate the included studies. Some study details were presented, but a lack of information on participants and intervention content made it difficult to assess the generalisability of the findings. The chosen methods of synthesis, taking account of statistical heterogeneity, appeared appropriate. The authors drew attention to methodological limitations related to suboptimal study quality and reliance on non-comparative research designs.

This was a reasonably well-conducted review and the authors' conclusions reflect the evidence presented. However, due to an absence of high-quality studies and a lack of information about the included studies, the conclusions should be interpreted with caution. The recommendations for research seem justified.

### Implications of the review for practice and research

**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated that high-quality randomised studies were needed with larger samples to take account of the diverse population of substance users. Improved reporting of target populations and intervention programmes was required.

### Funding

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**Bibliographic details**

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**Other publications of related interest**

Sword W, Jack S, Niccols A, Milligan K, Henderson J, Thabane L. Integrated programs for women with substance abuse issues and their children: a qualitative meta-synthesis of processes and outcomes. Harm Reduction Journal 2009; 6:32.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.