Psychotropic prescribing in long-term care facilities: impact of medication reviews and educational interventions
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CRD summary
This review concluded that medication reviews and/or educational interventions were effective in reducing psychotropic drug prescribing in long-term care facilities. The evidence presented tends to support the authors’ conclusions, but uncertainties about the strength of the evidence and methodological weaknesses in the review mean that the review cannot be regarded as reliable.

Authors’ objectives
To evaluate the effect of medication reviews and/or educational interventions on psychotropic drug use in long-term care facilities.

Searching
The authors searched MEDLINE, the Cochrane Central Register of Controlled Trials (CENTRAL), CINAHL, EMBASE, International Pharmaceutical Abstracts and PsycINFO to April 2007. Search terms were reported. Reference lists of retrieved articles were searched for additional studies. Only articles published in English were eligible for the review.

Study selection
Studies were eligible if they were randomised or non-randomised controlled trials (RCTs or CCTs) of medication review or educational interventions that involved pharmacists or physicians, and that reported post-intervention antipsychotic or hypnotic drug use in both the intervention and control groups. Studies had to be conducted in long-term care facilities where the average age of residents was 65 years or older. Secondary outcomes were residents’ health-related outcomes of changes in psychotropic drug use.

Included trials evaluated medication review combined with education or educational interventions (including educational outreach, meetings and training in alternative techniques) alone. Control groups received usual/standard care. Trial duration, where reported, ranged from five months to five years (follow-up).

Two reviewers independently selected studies for the review.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
Odds ratios (ORs) for post-intervention use of psychotropic drugs and associated 95% confidence intervals (CIs) were extracted or calculated.

The authors did not state how the data were extracted for the review.

Methods of synthesis
Data were pooled by meta-analysis using a random-effects model. Each trial was weighted by the inverse of its variance. Heterogeneity was assessed using the I² and Q statistics.

Results of the review
Three RCTs and one CCT (follow-up study of RCT) of medication review (including 8,786 participants), and four RCTs and three CCTs of educational interventions (including 4,224 participants), were included.
Intervention significantly reduced hypnotic drug use (OR 0.58, 95% CI 0.42 to 0.79; five trials), but not antipsychotic use (OR 0.81, 95% CI 0.64 to 1.04; five trials). Statistical heterogeneity was present in both analyses ($I^2$ was 58% and 68%).

Results for educational interventions and medication review were not reported separately.

Statistically significant results for secondary outcomes were reported for individual included trials.

**Authors' conclusions**
Medication reviews and/or educational interventions were effective in reducing psychotropic drug prescribing in long-term care facilities.

**CRD commentary**
The review had clear inclusion criteria. The authors searched a range of relevant databases, but no attempt to locate unpublished studies was reported and only English language studies were eligible for the review. This meant that the review could be at risk of publication and/or language bias. Studies were selected for the review by two independent reviewers, minimising risk of errors or bias, but the methods used for data extraction were not reported.

The authors did not assess the validity of the included studies, so the risk of bias in these trials and the synthesis derived from them is unclear. It was not reported whether the included RCTs used cluster randomisation (common in trials of educational interventions) and, if so, whether they were analysed correctly. Meta-analysis was performed for the main outcome. The heterogeneity of the included interventions and the presence of significant statistical heterogeneity suggest that meta-analysis was probably not appropriate. The results of the meta-analysis may not be meaningful or generalisable beyond the individual included trials.

Although the evidence presented tends to support the authors' conclusions, uncertainties about the strength of the evidence and methodological weaknesses in the review mean that the review should not be relied upon. The authors' recommendations for further research seem appropriate.

**Implications of the review for practice and research**

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

**Research:** The authors stated that research is needed to assess the effects of reducing inappropriate psychotropic drug use on resident health outcomes and healthcare costs; to evaluate interventions to encourage appropriate psychotropic drug use; and to examine the impact of pharmacists working as an integral part of mental health teams in long-term care facilities.

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Record Status
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.