A meta-analysis of the efficacy of nonphysician brief interventions for unhealthy alcohol use: implications for the patient-centered medical home

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CRD summary
The authors concluded that non-physician brief interventions were modestly effective at reducing drinking in primary care patients with unhealthy alcohol use. The reliability of the authors’ conclusion is limited by likely language and publication biases, bias in data extraction, limited data quality and combining a subset of studies of different designs, intervention and outcomes.

Authors' objectives
To evaluate the efficacy of brief counselling interventions provided by non-physicians on reducing alcohol consumption by unhealthy drinkers.

Searching
MEDLINE, PsycINFO, The Cochrane Drug and Alcohol Group specialised register, CINAHL, Social Sciences Citation Index and Sciences Citation Index (all from inception to first quarter 2008) were searched for papers in English. Search terms were reported.

Study selection
Studies conducted in primary care clinic settings that assessed the effects of non-physician interventions compared to controls (usual care or “advice”) on alcohol consumption outcomes were eligible for inclusion. Counselling interventions had to provide short-term alcohol counselling delivered by non-physician medical staff with or without physician participation. More intensive arms were selected from multiple intervention arm trials. The primary outcome measure was mean standard drinks consumed per week; outcome was measured before and after a six-month period (or time closest to six months).

Study settings were varied (USA, UK, Canada, The Netherlands, Sweden, Australia). Physician interventions were provided by medical doctors in most studies; non-physician interventionists varied (registered nurses, health educators, psychologists). Content and duration of interventions varied (single five-minute session to six 90-minute sessions). Participants were categorised as having harmful or hazardous alcohol abuse in most studies. Where reported, the proportion of women ranged from 19% to 100%. Alcohol consumption outcomes were from self reports.

Three reviewers independently assessed studies for inclusion; disagreements were resolved by discussion.

Assessment of study quality
Two reviewers independently assessed study quality using United States Preventive Services Task Force (USPSTF) criteria. Key features assessed included: allocation concealment, attrition bias, blinding, a priori statement of outcomes and comparability of baseline characteristics and treatment of groups, and delivery of stated interventions. Studies were rated as good, fair or poor quality. Disagreements were resolved by consensus.

Data extraction
Data on numbers of patients with predefined outcome measures were extracted by one reviewer.

Methods of synthesis
Pooled mean differences and 95% confidence interventions (CIs) were calculated using a random-effects model (DerSimonian and Laird). Statistical heterogeneity was assessed using I² and Q statistics. Meta-analysis was conducted only for studies that reported sufficient data for statistical pooling. Sensitivity analysis was performed to assess the effects of excluding studies that contributed substantially to heterogeneity. Publication bias was assessed by Egger’s tests and visual inspection of funnel plots.
Results of the review
Thirteen articles (4,140 patients) were included. Sample sizes ranged from 28 to 1,329 patients. Seven studies were considered fair quality and six were considered poor quality.

Non-physician clinician interventions, compared to controls, were associated with a significant reduction in the mean standard drinks per week by 1.7 standard drinks (95% CI -0.03 to -3.5, I²=46.8%; seven studies, 2,210 patients). No evidence of publication bias was found.

Excluding one study that contributed disproportionate heterogeneity to the analysis resulted in a smaller reduction in the mean standard drinks per week (mean reduction 1.36, 95% CI 0.3 to -2.4).

Head-to-head comparisons of physician and non-physician clinician interventions (three studies) revealed that alcohol consumption decreased in both groups and no between-group differences.

Physician combined with non-physician interventions were compared to physician clinician-only interventions in two studies. One study found that alcohol consumption decreased in both groups and no between-group differences. The other study found that non-physician interventions were associated with a significant reduction in alcohol consumption at six-month (p=0.001) and 12-month (p=0.03) follow-up.

Authors' conclusions
Non-physician brief interventions were modestly effective at reducing drinking in primary care patients with unhealthy alcohol use.

CRD commentary
The review question was clearly stated with respect to eligible participants, interventions, comparisons and outcomes. Eligible study designs were not predefined clearly. Major databases were searched for publications in English, which raised the likelihood of language bias. No efforts were made to search grey literature, so relevant papers may have been missed. Study selection and quality assessment were conducted in duplicate and this minimised potential reviewer error and bias. Data extraction was conducted by only one reviewer and this raised the possibility of error and bias. Study quality was assessed using appropriate criteria and the results were used to inform synthesis of available data. The authors did not report the study designs of the included studies. The decision to combine results of a subset of studies may not have been appropriate given substantial differences in terms of interventions, outcome measures and (according to the authors) study designs.

The reliability of the authors' conclusion is limited by likely language and publication biases, bias in data extraction, limited data quality and combining a subset of studies of different designs, intervention and outcomes.

Implications of the review for practice and research
Practice: The authors stated that evidence showed that non-physician personnel can effectively reduce unhealthy alcohol use. They suggested that non-physician clinician interventions could be introduced into the patient-centred medical home.

Research: The authors stated that further high-quality studies were needed to assess the role of non-physician based interventions in reducing unhealthy alcohol consumption. Further studies were needed to define who within medical home should be trained in interventions aimed at reducing unhealthy alcohol consumption to allow incorporation of these interventions into primary health care.

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