Effectiveness of brief interventions to reduce alcohol intake in primary health care populations: a meta-analysis

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Authors' objectives
To determine what effect very brief (5- to 20-min) interventions and extended (several visits) brief interventions have on alcohol intake and gamma-glutamyltransferase (GGT) activity in primary health care populations.

Searching
EMBASE, MEDLINE and PsycLIT were searched from 1966 to 1997 (search strategy not stated). In addition the following journals were searched along with seven earlier reviews (see Other Publications of Related Interest no.1-no.7): Addiction (formerly British Journal of Addiction), Alcoholism and Journal of Studies of Alcohol. The bibliographies of retrieved articles were searched for additional studies. No language restrictions were reported.

Study selection
Study designs of evaluations included in the review
Randomised controlled studies (RCTs), with a follow-up time of 6-12 months that report means, numbers of cases and standard deviations (SDs) for the outcome variables at follow-up.

Specific interventions included in the review
Brief (5- to 20-min) and extended (several visits) brief interventions aimed at reducing alcohol intake. Interventions reported in the review included advice from general practitioners (GPs), information on alcohol consumption and risks, and workbooks containing feedback on current health behaviours.

Participants included in the review
Individuals from the primary health care population i.e. from the general population or from family/GP practices. Studies that focused on hospital patients or alcoholics were excluded. Five studies reported in the review included both men and women, one included just men and the other just women. Participants ages ranged from 17 to 70 years.

Outcomes assessed in the review
Alcohol intake and gamma-glutamyltransferase (GGT) activity.

How were decisions on the relevance of primary studies made?
The author does not state how the papers were selected for the review, or how many of the reviewers performed the selection.

Assessment of study quality
No formal assessment of quality was undertaken.

Data extraction
The author does not state how the data were extracted for the review, or how many of the reviewers performed the data extraction. Tables reported in the review included the following types of information: population details, method of randomisation, number of participants, blinding, attrition rates, intervention details, type of analysis, outcome measures and results.

Methods of synthesis
How were the studies combined?
The study intervention effects for both alcohol intake and gamma-glutamyltransferase (GGT) activity were pooled using fixed-effect model and 95% confidence intervals (95% CI) quoted. The intervention effect was taken as the difference between the intervention and the control group at follow-up.

How were differences between studies investigated?
Heterogeneity was investigated using the chi-square distributed Q statistic (significance P<0.05).

Results of the review
Seven RCTs (2546 participants in total) were included.

For very brief interventions, the change in alcohol consumption was not significant among men (effect estimate=-42g of alcohol per week, 95% CI: [-105, 21]) or among women (effect estimate=-4g of alcohol per week, 95% CI: [-50, 43]).

For extended brief interventions the pooled effect estimate of change in alcohol intake was -51g of alcohol per week (95% CI: [-74, -29]) among women. Among men the estimate was of similar magnitude (effect estimate=-55, 95% CI: [-77, -33]), but significant lack of statistical homogeneity (Q statistic=7.66, df=2, P<0.05) implied that the summary estimate was not meaningful. Significant statistical heterogeneity (Q statistic=25.3, df=5, P<0.001) was observed when data on very brief interventions among men and women were pooled (effect estimate=-70g of alcohol per week, 95% CI: [-99, -40]). Similarly when extended brief interventions among men and women were pooled (effect estimate=-65g of alcohol per week, 95% CI: [-79, -51]; Q statistic=35.4, df=7, P<0.001). That was also the case for gamma-glutamyltransferase (GGT) activity (Q statistic=9.8, df=2, P<0.01 for very brief interventions; and Q statistic=23.3, df=2, P<0.001 for extended interventions).

Authors' conclusions
Extended brief interventions were effective among women. Other brief interventions seem to be effective sometimes, but not always, and the average effect cannot be reliably estimated. The reasons for the lack of uniform effectiveness should be explored.

CRD commentary
This review is based on clearly defined inclusion criteria and a wide search of a number of databases and other sources. However, the search strategy is not reported and so it is difficult to comment on whether relevant literature may have been missed. Unpublished studies may have been missed though as no specific attempts were made to locate unpublished studies and so there is a possibility of publication bias. The author also provided very little detail about methods in terms of how the processes of study selection and data extraction were performed and how many individuals were involved. It would also appear that the quality of the individual studies was not formally assessed. However, the author did assess the level of heterogeneity between studies and pooled them using a random-effects model. Where there was significant heterogeneity the author specifically highlighted this. The pooling of studies would therefore seem appropriate and the details provided about the individual studies were extensive. The author also discussed the limitations of the review. The author's conclusions and implications would therefore seem to be supported by the data, however in view of the above comments a certain degree of caution should be used when interpreting the findings.

Implications of the review for practice and research
Practice: The author states that 'extended brief interventions are uniformly effective for women and decrease alcohol intake by an average of half a drink per day in primary health care populations'. Also 'since some effect has been found in some brief interventions, interventions in primary care populations should be continued'.

Research: The author states that 'intervention studies should systematically report means and SDs for the principal outcome variable at the baseline and at the follow-up examination and the change in this variable for both intervention and control groups. It would also be most helpful to have data available on excessive drinking based on standard criteria.'
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Other publications of related interest

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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.