

- 13 Rush J, Burlock S, Lambert K, Loasley-Milman M, Hutchinson B, Enkin M. The effects of whirlpool baths in labour: a randomised controlled trial. *Birth* 1996;23:136-43.
- 14 Cammu H, Clasen K, Wettere L, Derde M-P. To bathe or not to bathe during the first stage of labor. *Acta Obstet Gynecol Scand* 1994;73:468-72.
- 15 Eckert K, Turnbull D, MacLennan A. Immersion in water in the first stage of labour: a randomised controlled trial. *Birth* 2001;28:84-93.
- 16 Aird IA, Luckas MJM, Buckett WM, Bousfield P. Effects intrapartum hydrotherapy on labour parameters. *Aust N Z J Obstet Gynaecol* 1997;37:137-42.
- 17 Otigbah CM, Dhanjal MK, Harmsworth G. A retrospective comparison of water births and conventional vaginal deliveries. *Eur J Obstet Gynecol Reprod Biol* 2000;91:15-20.
- 18 Ohlsson G, Buchhave P, Leanderson U, Nordstrom L, Rydhstrom H, Sjolín I. Warm tub bathing during labor; maternal and neonatal effects. *Acta Obstet Gynecol Scand* 2001;80:311-4.

(Accepted 18 November 2003)

doi 10.1136/bmj.37963.606412.EE

Effectiveness of opportunistic brief interventions for problem drinking in a general hospital setting: systematic review

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BMJ 2004;328:318-20

Abstract

Objective To determine the effectiveness of opportunistic brief interventions for problem drinking in a general hospital setting.

Design Systematic review.

Data sources Medline, PsychInfo, Cochrane Library, reference lists from identified studies and review articles, and contact with experts.

Main outcome measure Change in alcohol consumption.

Results Eight studies were retrieved. Most had methodological weaknesses. Only one study, with a relatively intensive intervention and a short follow up period, showed a significantly large reduction in alcohol consumption in the intervention group.

Conclusion Evidence for the effectiveness of opportunistic brief interventions in a general hospital setting for problem drinkers is still inconclusive.

Introduction

Evidence of excessive alcohol consumption is common among patients admitted to hospital for reasons other than drinking. Brief psychosocial interventions in general health care, either within or out of hospital, can help patients to reduce problem drinking at an early stage. These interventions are often opportunistic and most comprise assessment, advice, and counselling with educational elements and possibly written information. Professionals other than specialists in substance misuse may deliver the interventions, most of which are aimed at moderate or harm-free drinking as opposed to total abstinence. The interventions may target drinkers who consume hazardous amounts of alcohol or those who exceed the guidelines for safe drinking and are not reached by conventional treatment services.

Various reviews and meta-analyses have shown the effectiveness of brief interventions for problem drinking.¹⁻⁶ The most influential study is the World Health Organization randomised clinical trial of brief interventions in primary health care.⁷ Simple advice and brief counselling reduced hazardous and harmful alcohol consumption by both men and women in various healthcare settings and from different cultures.

In all but one review the results from primary healthcare settings and general hospital settings are pooled.⁵ In most European countries, however, these settings are structurally different and the effectiveness of alcohol intervention can therefore differ. We focused on the general hospital setting.

We identified and summarised the results of all randomised controlled trials and other well controlled trials that evaluated an opportunistic brief intervention for problem drinking in a general hospital setting to determine whether it reduced alcohol consumption.

Methods

We searched Medline and PsychInfo databases for articles published between 1966 and 2001 (see bmj.com for search terms). We also searched the reference lists of relevant reviews, contacted experts by email, and searched the Current Contents database and the Cochrane Library.^{1-4 6 8}

Articles were retrieved if they were individually randomised, cluster randomised, or quasi-randomised trials and non-randomised trials with equivalent groups at baseline; they focused on an opportunistic brief intervention for problem drinking; they had a control group receiving no intervention; they were set in a hospital or specialist outpatient clinic; they had a psychosocial (cognitive or behavioural) intervention; and alcohol consumption was an outcome measure.

Validity assessment and data abstraction

For each trial we assessed randomisation status, the blinding of those assessing outcomes, and the loss to follow up. Corresponding authors were asked to comment on our assessment, and all but one replied.

For each controlled trial, information about the type of intervention and duration, the quality criteria, and the outcome measures was extracted using a



References w1-w8 are on bmj.com



This is the abridged version of an article that was posted on bmj.com on 16 January 2004: <http://bmj.com/cgi/doi/10.1136/bmj.37956.562130.EE>

Outcome results for included studies

Trial	Intervention	Change (SD) in consumption from baseline (g/week)		Mean (95% CI) difference from baseline (g/week)	Alcohol related problems	Significant changes in laboratory values
		Intervention group	Control group			
Elvy et al ¹	Confrontational interview by psychologist about self reported drinking problems, and attempt at referral	Not available	Not available	No significant difference	Intervention group improved significantly more than control group	No data reported
Maheswaran et al ²	Brief advice (10-15 minutes) by clinic physician about risks from consumption and benefits from reduction (better control over blood pressure) and four follow up sessions	-284 (276)	25 (250)	-309 (-470 to -148)	Not available	γ -glutamyltransferase reduced, intervention group 21%; control group 0%: significant difference, aspartate aminotransferase, mean cell volume: no significant difference
Persson and Magnusson ³	Biofeedback on laboratory tests monthly by nurse and every third month by doctor for 12 months	-62 (113)	Not available	Not available	Days of sickness reduced: intervention group, 65%; control group, 27%. Significant difference	No significant difference
Chick et al ⁴	Counselling (60 minutes): booklet and discussion with experienced nurse	-296 (375)	-272 (366)	-24 (-150 to 102)	Reduced: intervention group 41%; control group 14%. Significant difference	γ -glutamyltransferase significantly reduced in intervention group
Rowland and Maynard ⁵	Audiovisual presentation of information on alcohol by nursing staff or researcher and booklet	-96 (not available)	-72.50 (not available)	-23.5; no significant difference	Reduced health problems: intervention group 31%; control group 22%. Significant difference	Not available
Watson ⁶ :	Provided by nurse in general hospital: booklet; brief advice (10-15 minutes); booklet and brief advice (10-15 minutes)					
Booklet		-120 (530)	-147 (414)	27 (-220 to 274)	No significant difference	No significant difference
Advice		-121 (288)	-147 (414)	26 (-161 to 213)	No significant difference	No significant difference
Booklet and advice		-206 (286)	-147 (414)	-59 (-249 to 131)	No significant difference	No significant difference
Heather et al ⁷ :	Provided by psychologist or experienced nurse: skills based counselling* (30-40 minutes); brief motivational interview† (30-40 minutes)					
Skills based counselling		-186 (255)	-127 (280)	-59 (-181 to 63)	Not available	Not available
Brief motivational interview		-219 (270)	-127 (280)	-92 (-215 to 31)	Not available	Not available
Welte et al ⁸	Risk reduction intervention: factual information on risks of alcohol use and suggestions to reduce intake by intervention team specialised in substance misuse	-139 (327)	-119 (545)	-20 (-132 to 92)	No significant difference	Not available

*Investigation of drinking pattern, recommended limits and alcohol effects; instruction on self monitoring, tips for reduction, instruction on how to identify and cope with high risk situations; discussion of alternative activities to change drinking; booklet.

†Assessment of recent drinking; exploration of positive and negative aspects of heavy drinking; information on effects of alcohol; exploration of patient concerns.

structured form. A second researcher checked the information, and any disagreements were resolved by consensus. Authors of included studies were contacted to obtain additional relevant information. The effect sizes were calculated for those studies that provided the number of cases and the means and standard deviations of alcohol consumption at baseline and follow up for both intervention and control groups.

Quantitative data analysis

We calculated the mean difference (95% confidence interval) in alcohol consumption as the difference in outcome between the intervention and control groups. Alcohol consumption at follow up was not taken as outcome but rather the difference between consumption at baseline and follow up. This corrected for the relatively large individual differences at baseline and the non-randomisation of some of the study designs. We used the standard deviations of consumption at baseline and follow up and the correlation between consumption at these two time points to calculate the standard deviation of change in consumption from baseline. If the correlation was not provided, we estimated it based on studies that provided one. The

study designs and outcomes were too heterogeneous to allow pooling of data.

Results

Overall, 481 articles were identified. After exclusions, eight articles remained for analysis (see bmj.com). The trials varied in methodological quality, population, intervention, people performing the intervention, and follow up periods. A total of 1597 problem drinkers were allocated to an opportunistic intervention or usual care. The number of patients per trial ranged from 45 to 428.

Three of the trials randomised individuals and four randomised clusters of consecutive patients to avoid contamination. One non-randomised, large multi-centre study compared patients from four intervention hospitals with those from three matched control hospitals. Three studies reported blind assessment of outcome. Loss to follow up ranged from 9% to 50%, with all of the studies excluding these patients from further analysis.

Inclusion criteria were weekly alcohol consumption, problems related to alcohol, evidence of alcohol on screening, a medical record showing a history of

alcohol misuse, and an increased concentration of γ -glutamyltransferase. All of the trials excluded patients with serious medical or psychiatric disorders. Five studies also excluded patients with a history of advice or treatment for drinking problems or severe alcohol dependency.

Poikolainen made a distinction between very brief interventions (5-20 minutes) and extended brief interventions (several visits).⁵ Three trials examined the effects of very brief interventions involving advice or education on sensible drinking and the health risks associated with heavy drinking. In two of these interventions a booklet was also distributed. The extended brief interventions lasted from 30 to 75 minutes and mostly consisted of a single counselling session by a professional experienced in the treatment of alcoholism, or brief alcohol related medical advice from the physician, with several follow up sessions.

The interventions were performed by nurses, psychologists, physicians, combinations of these, or an intervention team specialised in substance misuse. Trial duration varied from eight weeks to 18 months. In addition to change in alcohol consumption, outcome measures were self reported problems related to alcohol and laboratory variables.

Quantitative data analysis

We linearly transformed data on alcohol intake into grams a week. The table presents the change in consumption for the study groups and the mean differences. One study gave the correlation between baseline and follow up consumption ($r=0.40$). We used this as the estimate for the other studies. Differences in effects across the studies did not seem to depend on baseline variables.

One study showed a significantly larger reduction in weekly alcohol consumption in the intervention group (mean difference -309 g, -470 g to -148 g). The other studies found no significant effects.

Discussion

Evidence for the effectiveness of opportunistic brief interventions in a general hospital setting for problem drinkers is still inconclusive. One strength of our review is that we considered one outcome measure—change in alcohol consumption. The methodological quality of the selected trials was reasonable, although most showed a relatively large loss to follow up. This can lead to attrition bias but is often unavoidable in addiction research.

The small number of studies precluded the exploration of reasons for heterogeneity. Only two of the trials were conducted on outpatients, and one produced clearly positive results. Except for one trial, all of those in which an experienced nurse presented the intervention produced only small effects. The two trials involving a doctor or a psychologist during intervention produced larger effects. We tried to include unpublished work by contacting the experts but cannot be sure we identified all trials.

Our results do not concur with the mostly positive results reported elsewhere for brief alcohol interventions in general health care.^{1-4 6 7} Such results may be partly due to the pooling of data from hospital and primary healthcare settings. A review of brief interven-

What is already known on this topic

The effectiveness of brief interventions for problem drinkers is well established

The results for primary healthcare settings are positive, but less conclusive

What this study adds

Evidence for the effectiveness of opportunistic brief interventions in general hospitals for problem drinkers is inconclusive

tions in only primary care did not show strong evidence of an effect.⁵

The large treatment effect in the study reporting positive results can be explained in two ways. Firstly, a relatively intensive intervention was conducted in male outpatients with hypertension in which during every visit the physician emphasised the importance of lowering alcohol consumption to control blood pressure. Secondly, the control group was told to continue with their usual consumption of alcohol, which was not the case in the other studies.

The other trials found a significant reduction in alcohol consumption in the control groups. Comparable reductions have been observed in the control groups of other alcohol intervention studies.^{6 7} The reason for this is unclear. This finding can be expected as a consequence of regression to the mean, but may also reflect a reactive effect of the assessment.^{5 6 9-11} Assessment may make patients more aware of the potentially harmful effects of alcohol consumption.

We thank RJPM Scholten for advice on the data analysis.

Contributors: See bmj.com

Funding: Netherlands Organisation for Health Research and Development.

Competing interests: None declared.

Ethical approval: Not required.

- 1 Freemantle N, Gill P, Godfrey C, Long A, Richards C, Sheldon TA, et al. Brief interventions and alcohol use. *Qual Health Care* 1993;2:267-73.
- 2 Kahan M, Wilson L, Becker L. Effectiveness of physician-based interventions with problem drinkers: a review. *CMAJ* 1995;152:851-9.
- 3 Wilk AL, Jensen NM, Havighurst TC. Meta-analysis of randomized control trials addressing brief interventions in heavy alcohol drinkers. *J Gen Intern Med* 1997;12:274-83.
- 4 Moyer A, Finney JW, Swearingen CE, Vergun P. Brief interventions for alcohol problems: a meta-analytic review of controlled investigations in treatment-seeking and non-treatment-seeking populations. *Addiction* 2002;97:279-92.
- 5 Poikolainen K. Effectiveness of brief interventions to reduce alcohol intake in primary health care populations: a meta-analysis. *Prev Med* 1999;28:503-9.
- 6 Bien TH, Miller WR, Tonigan JS. Brief interventions for alcohol problems: a review. *Addiction* 1993;88:315-35.
- 7 Babor TF, Grant M. *Programme on substance abuse. Project on identification and management of alcohol related problems. Report on phase II: a randomized clinical trial of brief interventions in primary health care*. Geneva, Switzerland: World Health Organization, 1992.
- 8 Miller WR, Brown JM, Simpson TL, Handmaker NS, Bien TH, Luckie LF, et al. What works? A methodological analysis of the alcohol treatment outcome literature. In: Hester RK, Miller WR, eds. *Handbook of alcoholism treatment approaches: effective alternatives*. Needham Heights, MA: Allyn and Bacon, 1995:12-44.
- 9 Anderson P, Scott E. The effect of general practitioners' advice to heavy drinking men. *Br J Addict* 1992;87:891-900.
- 10 Richmond R, Heather N, Wodak A, Kehoe L, Webster I. Controlled evaluation of a general practice-based brief intervention for excessive drinking. *Addiction* 1995;90:119-32.
- 11 Clifford PR, Maisto SA. Subject reactivity effects and alcohol treatment outcome research. *J Stud Alcohol* 2000;61:787-93.

(Accepted 13 November 2003)

doi 10.1136/bmj.37956.562130.EE