

Critical Review Form

Meta-analysis

Brief interventions for heavy alcohol users admitted to general hospital wards, *Cochrane Database* 2011, Issue 8. Art No: CD 005191

Objective: “To determine whether brief interventions reduce alcohol consumption and improve outcomes for heavy alcohol users admitted to general hospital inpatient units not specifically for alcohol treatment.” (p. 4)

Methods: Systematic review of prospective randomized controlled trials of patients age ≥ 16 years admitted to general inpatient hospital care for any reason other than specifically for alcohol treatment, if a brief intervention to encourage a reduction in alcohol consumption and related problems was compared to assessment with no intervention or standard treatment. To be eligible studies had to report one of the following primary outcomes: self-reported drinking activity/consumption or laboratory measures of blood alcohol levels. Secondary outcomes included hospital readmission rates, mortality rates, quality of life, alcohol-related injuries, work absence, or adverse legal events.

Electronic [searches](#) included the Cochrane library, MEDLINE, CINAHL, and EMBASE. In addition, the authors hand-searched two journals (*Addiction* and *Alcohol and Alcoholism*), searched reference lists, conference proceedings, and electronic sources of ongoing trials. No language restrictions were applied. Pairs of author’s independently classified individual manuscripts are relevant or not. Three authors independently extracted data using a piloted data recording form.

The Cochrane Collaboration tool for assessing risk of bias ([Cochrane Handbook](#)) was used to evaluate five domains: sequence generation, allocation concealment, blinding and incomplete outcome data, and overall qualitative risk of bias for that study (low, high, or unclear). [Heterogeneity](#) between comparable trials was assessed with the chi-squared test and [I² test](#). In the presence of significant heterogeneity, the results of trials were analyzed with a random effect model and sensitivity analysis was conducted.

Guide	Question	Comments
I	<i>Are the results valid?</i>	
1.	Did the review explicitly address a sensible question?	Yes. Do medical inpatients with alcohol use disorders benefit from a brief intervention to reduce risky alcohol consumption?
2.	Was the search for relevant studies details and exhaustive?	Yes, including multiple electronic search engines, hand-searches, registered trial searches, and contacting experts.
3.	Were the primary studies of high methodological quality?	No. Only 7/14 trials were randomized controlled trials and outcome assessors were not blinded in 5/14 studies. "This is of major concern because most of the outcomes considered by the studies were subjective." (p. 14) Five trials did not use intention-to-treat analysis. (p.11)
4.	Were the assessments of the included studies reproducible?	Yes. "Criteria indicated by the (Cochrane) hand book and adapted to the addiction field were used to make these judgments...Any disagreement between authors was resolved by discussion, including input from a third independent reviewer, if required." (p. 5)
II.	<i>What are the results?</i>	
1.	What are the overall results of the study?	<ul style="list-style-type: none"> • 14 relevant studies involving 4041 participants were included from the US (4 studies), UK (5 studies), Australia (1), Germany (1), Finland (1), and Taiwan (2 studies). • Six studies occurred in general medical wards, three in trauma centers, one in a medical/surgery unit, and one in an ortho-trauma unit. • Brief interventions were generally a single event lasting 15- to 60-minutes and were delivered by a variety of providers including doctors, nurses, counselors and social workers. <p>Mean alcohol consumption (8 studies, 2196 participants)</p> <ul style="list-style-type: none"> • Significant difference at 6 months (WMD-69; 95% CI-128 to -11) and 9 months (WMD-183; 95% CI-360 to -6) but not one-year (WMD-34; 95% CI-82 to 15). • Significant heterogeneity ($I^2 = 68\%$) in the 4 studies with six month outcomes and statistical significance was lost when one study (Antti-Poika 1988) was removed (WMD -55; 95% CI -115 to 4). <p>Self-reports of EtOH consumption (3 studies, 603 participants)</p>

		<ul style="list-style-type: none"> No difference at 3- or 6-months but significant difference at one-year (SMD-0.26; 95% CI-0.50 to -0.03). <p>Lab markers (Gamma GT) (3 studies, 341 participants)</p> <ul style="list-style-type: none"> No difference at 6 months (WMD 7; 95% CI -34 to 48) or one year (WMD-5; 95% CI - 37 to 27). <p>Number of binges (1 study, 341 participants)</p> <ul style="list-style-type: none"> No significant differences (RR 0.99; 95% CI 0.83 to 1.19) <p>Heavy drinking episodes in days per week (1 study, 616 participants)</p> <ul style="list-style-type: none"> Significant differences were noted in favor of the intervention at all time points: 4 months (MD - 0.65; 95% CI - 1.0 to - 0.10), 9 months (MD - 0.78; 95% CI -1.3 to -0.24) and 12 months (MD - 0.71; 95% CI - 1.3 to -0.16) <p>Death (9 studies, 3256 participants)</p> <ul style="list-style-type: none"> No significant differences at 3, 4 or 9 months but significant differences favoring brief intervention noted at 6 months and 1 year (RR 0.60; 95% CI 0.40 to 0.91) No significant difference noted for driving offenses, hospitalization duration, or ED use.
2.	How precise are the results?	See 95% CI above
3.	Were the results similar from study to study?	No significant heterogeneity was noted across multiple outcomes.
III.	<i>Will the results help me in caring for my patients?</i>	
1.	How can I best interpret the results to apply them to the care of my patients?	Brief interventions that are delivered by doctors, nurses, counselors, or social workers to inpatients at-risk for unhealthy alcohol consumption reduces alcohol consumption at 6 and 9 months, but is not sustained and does not reduce binge drinking, driving citations, or mortality.
2.	Were all patient important outcomes considered?	Yes, although the costs of routine screening/counseling and societal benefits should also be evaluated in the future.

3.	Are the benefits worth the costs and potential risks?	<p>The annual cost of alcohol abuse to society in the UK alone is £1.7 billion, accruing more expense to health, social, and criminal justice systems than drug misuse, Alzheimer’s disease, and schizophrenia or stroke.</p> <p>(Dobson 2003) However, a formal cost-benefit or cost-utility analysis is needed to evaluate the fiscal merits of brief interventions for ETOH use disorders among medical inpatients.</p>
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Limitations

- 1) **Poorly designed trials overall with high risk of selection, co-intervention, or ascertainment bias.**
- 2) **Heterogeneous brief interventions and counselors. Who should counsel the patient at what point in their hospitalization and using what methods?**
- 3) **No assessment for the therapeutic benefit of screening alone ([Kyphri 2007](#))**
- 4) **Predominantly male and US/UK studies limiting the external validity to other populations.**

Bottom Line

Brief interventions delivered by physicians, nurses, psychologists, or social workers to inpatients at-risk for unhealthy alcohol consumption reduces alcohol consumption at 6- and 9-months, but is not sustained and does not reduce binge drinking, driving citations, or mortality.