From data to evidence, to action: findings from a systematic review of hospital screening studies for high risk alcohol consumption

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CRD summary
The authors concluded that the high prevalence of harmful drinking amongst hospital patients suggests that systematic screening and intervention is required. The evidence appears to support the authors’ conclusions about high prevalence rates of positive screens for alcohol, but the poor reporting of review methods make it difficult to confirm the robustness of these conclusions.

Authors’ objectives
To identify the characteristics of effective hospital alcohol screening strategies.

Searching
MEDLINE, PsycINFO, ERIC, CINAHL, EBM Reviews, AUSThealth and ISI Web of Science were searched for studies published in English from 1990; the search terms were reported.

Study selection
Studies of hospital alcohol screening strategies that reported prevalence rates of positive screens were eligible for inclusion.

The review assessed the use of different screening tools (blood alcohol concentration (BAC) and self-reported instruments including CAGE, AUDIT and MAST) in males and females in the emergency department (ED) and hospital wards. About half of the included ED studies were in patients with injuries. ED studies more commonly used objective screening methods, either alone or in combination with self-report; all but one of the ward studies used self-report. The studies were set in 17 different countries. Some studies imposed age restrictions and others included patients with injuries.

The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

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

Data extraction
Prevalence rates of positive screens were presented for each study. Where studies used more than one screening tool, prevalence rates indicating hazardous or harmful use were selected in preference to tools assessing alcohol dependence. For studies using both BAC and self-report, self-reported prevalence rates were selected.

The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction.

Methods of synthesis
Sample-weighted prevalence rates of positive screens and 95% confidence intervals (CIs) were calculated for different settings, males and females, and different screening tools. Odds ratios (ORs) with 95% CIs were used to compare average prevalence rates of positive screens using different tools, in different settings and for males versus females. Correlations between age, ward, ED BAC and ED self-report were calculated. The relationship between age and prevalence rates of positive screens was examined using linear and polynomial regression.

Results of the review
Sixty-five studies (n=100,980) were included: 33 studies were set in EDs and 32 were set in hospital wards. Fifty-six independent samples from 51 studies were included in the main analysis (reasons were given for the exclusion of some eligible studies from the analysis).

For studies set in the ED, screening using BAC tools produced significantly higher prevalence rates of positive screens than self-report: 26.1% (12 studies) versus 15.6% (19 studies); the OR was 1.92 (95% CI: 1.84, 2.00, p<0.001).

For self-report studies, prevalence rates of positive screens were similar for ward and ED studies: 16.5% (29 studies) and 15.6% (19 studies); the OR was 1.07 (95% CI: 1.03, 1.11, p<0.001).

Higher prevalence rates for positive tests were found for males in both ED and ward settings, regardless of the screening tool used. Prevalence rates of positive screens were 18.5% for men (6 studies) versus 8.7% for women (6 studies) when using BAC in the ED setting (OR 2.37, 95% CI: 1.91, 2.94, p<0.001) and 18.2% (9 studies) versus 6.8% (10 studies) when using self-report (OR 3.07, 95% CI: 2.72, 3.46, p<0.001). In the ward, the rates were 24.7% for men (24 studies) versus 7.1% for women (24 studies) when using self-report (OR 4.30, 95% CI: 4.00, 4.62, p<0.001).

The relationship between age and prevalence rates of positive screens was not linear. Findings suggested a trend towards a higher prevalence in ED patients aged 20 to 40 years and in ward patients aged 30 to 50 years.

**Authors' conclusions**
The high prevalence of harmful drinking amongst hospital patients suggests that systematic screening and intervention is required. Screening males in the ED using BAC would make maximal use of resources.

**CRD commentary**
The review question was stated clearly. Several relevant sources were searched but no attempts were made to minimise publication and language bias. The methods used to select studies, assess validity and extract the data were not described, so it is not known whether any efforts were made to reduce reviewer error and bias. Study validity was not assessed, therefore the results from these studies and any synthesis may not be reliable. Appropriate methods were used to combine the studies, the influence of various study characteristics on prevalence rates was examined, and limitations of the review were discussed. The evidence appears to support the authors' conclusions about high prevalence rates of positive screens for alcohol, but the lack of reporting of review methods and lack of an assessment of study quality make it difficult to confirm the robustness of conclusions regarding the maximal use of resources.

**Implications of the review for practice and research**
Practice: The authors stated that screening males in the ED using BAC would make maximal use of resources. They also recommended screening using self-report for high risk of alcohol intake, with positive results followed up using screening tools for dependence. Screening should be undertaken in the ED and wards.

Research: The authors stated that if hospital staff are to be involved in screening, potential barriers need to be addressed. There is also a need for links to be established between researchers assembling best evidence and staff implementing best practice.

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