Do specialist alcohol liaison nurses improve alcohol-related outcomes in patients admitted to hospital settings?

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Research question

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Key points

- Five studies were identified by the search for inclusion in the review; an additional report was highlighted by a member of CERGA and obtained from the lead author.
- Studies were conducted in the UK (n=4), US (n=1) and Australia (n=1).
- Studies comprised two RCTs, one quasi-experimental study, one before and after study, one pilot study without a comparison group, and a case study.
- Improvements were often seen in both intervention and control groups; however, intervention groups tended to experience a greater improvement than the control group, or an improvement in more outcomes than the control group.
- Nurse-led screening and brief interventions in secondary care settings appear to be successful at improving alcohol-related outcomes. Evidence from one study suggests cost-effectiveness.

Background

Alcohol misuse poses a considerable public health concern for the UK. The NHS cost attributable to alcohol misuse in Scotland was estimated at £405 million in 2006-07 (Scottish Government 2008). The Home Office’s alcohol strategy highlighted the opportunity for A&E staff to identify those at risk and provide support. It encourages hospitals in England and Wales to employ alcohol liaison nurses to provide: medical management of patients with alcohol problems in the hospital; liaison with community alcohol and other specialist services; education and support for other healthcare workers in the hospital; and delivery of identification and brief advice within the hospital with a focus on key groups (Her Majesty’s Government 2012). The use of alcohol liaison nurses in Scotland could potentially lead to an improvement in alcohol-related outcomes in patients admitted to hospital settings and subsequently a reduction in the costs associated with alcohol misuse. This rapid review sought to review published literature evaluating the effectiveness of alcohol liaison nurses at improving alcohol-related outcomes in patients in hospital settings.

Methods

An electronic database search was conducted using MEDLINE and Scopus. All databases were searched from inception to February 2014. Titles were searched using the concepts of alcohol and nurse; both searches were restricted to reports in English. The MEDLINE search was restricted to those with human subjects and the Scopus search was limited to articles only and excluded those with the terms “primary care”, “general practice”
and "community" in the title. The Drugs and Alcohol Unit of the Home Office was contacted to request evidence to support their unreferenced statement that “alcohol liaison nurses within A&E have been shown to reduce re-presentations” but they had not responded at the time of writing the review (Her Majesty’s Government 2012).

Results

The searches retrieved 681 titles; 400 were unique. Titles and abstracts were screened and 393 were excluded due to irrelevance or no data on alcohol-related outcomes. The relevance of two further potentially relevant articles could not be determined as the full-texts were inaccessible. The author of one could not be determined and a valid email address for the author of the remaining article could not be located. This left five articles remaining for inclusion in the review; these studies are summarised below. An additional report was obtained from the lead author of a report outlining the effectiveness of a nurse-led alcohol liaison team in reducing acute hospital alcohol-related admissions in the UK (Moriarty 2014).

Désy et al. 2010

This quasi experimental study compared control and intervention group outcomes. The intervention comprised alcohol screening, brief intervention, and referral to treatment (SBIRT) conducted by staff nurses in an emergency department (ED) setting in the US. Patients who met the criteria for at-risk drinking or the possibility of dependence were given a brief intervention (BI) aimed at motivating them to reduce their drinking. The BI comprised 5-10 minutes of motivational counselling, provision of educational brochures and a list of community resources where further intervention and treatment could be sought. Abstainers and those who consumed low amounts of alcohol on rare occasions received standard care.

Of patients meeting the eligibility requirements, 8,337 did not screen as at-risk leaving 926 at-risk drinkers eligible. Only 10% (n=94) were enrolled in the study; 79% refused to participate and 11% were not asked to participate due to various issues, e.g., staff overload, time constraints. Patients were randomly assigned to the control (n=42) or intervention (n=49) group (three withdrew later).

Half of participants (50.5%, n=46) were reached for follow-up at three months: 47.6% (n=20) in the control group and 51.3% (n=26) in the intervention group. There were no significant differences in demographics or baseline drinking behaviours between those who participated at follow-up and those who did not.

Alcohol consumption was measured in terms of quantity (number of drinks per week) and frequency (number of occasions per week). At baseline, patients in the intervention group drank significantly more per week than those in the control group (mean 28.6 drinks per week versus 9.9; p=0.02). The mean number of drinks in the intervention group declined by 70% (28.6 to 8.0 drinks per week) and by 20% in the control group (9.9 to 7.7 drinks per week). The decline in number of drinks was statistically significant for the intervention group; however, the difference in the mean number of drinks between the two groups at follow-up was not significant. Both groups experienced a statistically significant reduction in frequency of alcohol consumption between baseline and follow-up (p<0.001). Frequency in alcohol consumption declined by 35% (4.3 to 2.8 days per week) in the intervention group and 42% in the control group (4.8 to 2.8 days per week). The difference in the percentage reduction was not statistically significant between the two groups.
Fewer patients in the intervention group (20%) had recurring ED visits compared to those in the control group (31%) during the follow-up period but this difference was not statistically significant. There was one traffic violation among patients in the intervention group and none in the control group.

**Goodall et al., 2008**

This randomised controlled trial (RCT) compared two methods of nurse-delivered BIs involving hazardous drinkers with facial trauma in three oral and maxillofacial surgery outpatient clinics in the West of Scotland. Patients over 16 years of age and scoring eight or more on the Alcohol Use Disorders Identification Test (AUDIT) were randomized to receive brief motivational interviewing carried out by a research nurse (intervention) or a standard alcohol information leaflet (control). 249 patients met the eligibility criteria; 195 scored eight or more on the AUDIT and were randomized. One patient was later excluded as their intervention type was not recorded. There were no differences between the two groups in terms of characteristics, details of injuries or AUDIT scores.

Participants were followed up at three months (n=103) and 12 months (n=134). At three months there was no significant difference between the two groups in any of the alcohol-related outcomes assessed. At 12 months there was a significant difference between the two groups in terms of change in the number of drinking days in the past 30 days (p=0.007) and number of heavy drinking days in the past 30 days (p=0.03), with the BI being more effective. There was no significant change in the number of standard drinks (i.e. a drink containing one unit of alcohol) consumed each drinking day. Those with the highest AUDIT scores at baseline in the intervention group showed a greater degree of change.

**Griffin, 1999**

This six-month pilot study of a drug and alcohol liaison nurse service was conducted at a medical ward in Wales. The nurse visited the ward weekly for three-hour sessions. No control group was used.

Two leaflets, one for alcohol and one for drugs, were developed to publicize the service to patients and staff. This included an adapted version of the CAGE questionnaire to motivate patients to consider their use of alcohol and drugs. These were left in prominent places, and in the case notes of interviewed patients to highlight the service to ward staff. The AUDIT was used as a screening tool; the score was fed back and discussed with patients to motivate a change in drinking. Motivational interviewing was used to enable patients to commence a change in pattern of substance use; this also incorporated discussion of abnormal laboratory tests. Patients were asked to keep a diary of substance use if deemed appropriate. A comprehensive assessment was conducted for patients with alcohol or drug dependency; this included a management plan involving one of more interventions, e.g., referral to social worker or community psychiatric nurse, a cognitive-behavioural relapse prevention group. A follow-up appointment with the liaison nurse was offered if indicated.

Thirty-six patients were referred to the liaison nurse: 34 had alcohol-related problems and two had drug and alcohol related problems. Nine of the 13 patients screened at initial interview scored eight or more on the AUDIT. AUDIT scores and lab test results were discussed with each patient as part of a motivational interview; follow-up for the nine patients included one or more interventions. Five patients with dependence received full assessment rather than being screened with the AUDIT. Use of the AUDIT or full assessment was deemed inappropriate for 18 referrals due to patients’ circumstances, e.g. mental state or physical frailty, so a range of services and interventions were initiated based on individual need; two of these patients also attended a
follow-up appointment. Advice to ward staff was provided regarding medication for eight of the referrals in relation to the management of alcohol withdrawal and appropriate vitamins.

Nursing staff were asked to complete an evaluation questionnaire containing five items in the form of a 10-point visual analogue scale. Each item scored 6 or above indicating that nurses who completed a questionnaire (44%, n=8) found the pilot service to be beneficial.

**Lane et al., 2008**

The aim of this study was to assess the feasibility, acceptability and effectiveness of screening and BI for risky alcohol consumption by a nurse in a sexual health clinic in Sydney, Australia. Patients were asked to complete the AUDIT using a handheld computer in privacy while waiting to be seen by clinic staff. Those scoring eight or above were asked to participate and randomized to the control (n=97) or intervention group (n=87). The intervention comprised a BI guided by the “Drink-less” package (based on WHO validated methods).

Of the 519 individuals screened, 39% (n=204) scored 8 or above on the AUDIT and were therefore eligible for inclusion; 184 agreed to participate. Follow-up interviews were conducted by telephone at three months with 69% (n=67) of those in the control group and 76% (n=66) in the intervention group.

Both groups showed significant reductions in AUDIT scores: mean scores decreased from 13.7 to 11.5 in the control group (p<0.001) and from 14.0 to 10.7 in the intervention group (p<0.001). This change did not differ significantly between the groups. The intervention group also showed a significant reduction in AUDIT-C score (p=0.01) whilst the control group did not (p=0.08). The proportion of participants drinking more than six drinks daily, almost daily, or weekly (as measured by AUDIT-3) reduced by 12% in the intervention group (from 51% to 39%; p=0.09) and remained stable in the control group (46%; p=1.0). The majority of those in the intervention group (94%) remembered receiving the intervention. The nurse screening and intervention was reported as acceptable by the majority of patients (74%) and staff (71%).

**Ryder et al. 2010**

This study aimed to determine the impact on primary and secondary care services of the introduction of a nurse-led assessment service linking to a substance misuse service. The nurse-led service was run by two nurses. The aims of the service were to: assess inpatients identified as having alcohol problems and provide BIs where appropriate; provide ongoing follow-up for patients identified as having greater needs; provide a clinic in the acute trust; provide access to service for patients requiring alcohol detoxification; develop protocol for the management of alcohol withdrawal and act as an advice resource for problems with detoxification; and to maintain links with the substance misuse service. The study took place in a medical department of a hospital in Nottingham. The study comprised five smaller studies to address specific patient populations.

Study one identified admissions for alcohol detoxification on a three-monthly basis during the introduction of the service. A reduction was shown in the number of patients admitted for inpatient detoxification; inpatient detoxification was replaced by supervised outpatient detoxification if appropriate.

Study two identified 40 patients with multiple admissions with significant alcoholic liver disease and more than two admissions in the previous six months prospectively. There was a reduction in the number of bed days used in the six months post-intervention (from 6.3 per month to 3.2) and in self-reported alcohol intake (from 8.4 units per day to 4.6).
Study three established self-reported alcohol intake in two groups of patients: 100 consecutive patients admitted with an alcohol-related diagnosis prior to the introduction of the nurses were assessed by a consultant physician and 100 patients with identical ICD diagnostic codes were seen by the nurse liaison team. There was a greater reduction in self-reported alcohol intake in those receiving the alcohol liaison nurse service (18 units per day at baseline; nine units at six months; 10 units at one year) compared to those receiving physician counselling (19 units per day at baseline; 17 units at six months; 18 units at one year).

Study four involved a group of consecutive patients identified by consultant physicians in the six months prior to the introduction of the liaison service as having a short (<48 hours) alcohol-related admission to hospital (n=20) given the same intervention used in study three. An identical group, matched for primary diagnosis (n=20), was identified and seen by the liaison nurse in the first six months of the service. The number of subsequent GP appointments made and attended was established. Primary care attendances were lower in the group seeing the nurse team (mean 3.7 attendances in six months) compared to the consultant physician (mean 8.1).

Study five compared violence against staff in two clinical areas in the six months prior to the service and in the six months after the introduction of the service. Violent incidents where alcohol was a significant factor fell following the introduction of the service from 1.7 incidents per week to 0.45 per week in the second six months of the service.

**Moriarty 2014**

This case study was carried out in the Royal Bolton Hospital in the UK. The aim was to reduce acute hospital-related admissions and improve quality of care, thereby saving costs for the NHS. Four alcohol specialist nurses were appointed to establish a 7-day service in the Royal Bolton Hospital. The nurses perform comprehensive physical and mental assessments, provide brief advice to patients and initiate care plans on a daily bases. Patients are offered rapid appointments with community services and/or detoxification. Readmission rates reduced by 3% compared to an increase across the region and net savings equate to £448,000 per annum in bed days alone for a typical district hospital serving a population of 250,000.

**Methodological points**

Three of the studies were conducted in the UK and should consequently be applicable to Scotland. Length of follow-up ranged from three months to twelve months. Two of the five studies involved alcohol liaison nurses (Griffin 1999, Ryder et al. 2010) whilst three evaluated the role of one or more nurses in conducting screening and brief interventions (Désy et al. 2010, Goodall et al. 2008, Lane et al. 2008). The two studies evaluating the role of an alcohol liaison nurse were of weaker methodological quality; the study by Ryder was a before and after comparison (Ryder et al. 2010) whilst the pilot study by Griffin had no comparison group, reported no alcohol-related outcomes, and had a small sample size (n=36) (Griffin 1999).

The quasi-experimental study by Désy had a short period of follow-up and a small sample size (Désy et al., 2010). The busyness of the ED resulted in 11% of eligible patients not being invited to participate and 79% of patients invited to participate declined. Furthermore, half of patients were lost to follow-up. Consequently, the small sample size may have been insufficient to detect statistically significant differences between the groups. The findings with regard to the number of drinks per week are difficult to interpret as the intervention group drank significantly more per week at baseline than those in the intervention group i.e. 28.6 drinks vs. 9.9. Lanes study was conducted in a sexual health clinic rather than in an acute hospital setting (Lane et al. 2008). The
Scottish RCT by Goodall had a large sample size (n=194) and followed-up patients for a year (Goodall et al. 2008).

**Conclusion**

Improvements were often seen in both intervention and control groups; however, intervention groups tended to experience a greater improvement than the control group, or an improvement in more outcomes than the control group. It may be that alcohol screening alone is effective in encouraging some individuals to stop, or it could be that alcohol-related hospitalisations act as a motivator to change drinking behaviours. Alcohol liaison nurses and nurses trained to carry out screening and brief interventions appear to be more effective at reducing alcohol-related outcomes than standard care. The case study by Moriarty was the only report to contain evidence regarding the savings of introducing an alcohol liaison nurse service. Economic analysis assessing the cost-effectiveness of other such services is recommended as a further step to confirm or refute this evidence.

**References**


