



## RESEARCH

# Can a theoretical framework help to embed alcohol screening and brief interventions in an endoscopy day-unit?

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## ABSTRACT

**Introduction and aims** The National Institute for Health Care and Excellence recommend that alcohol screening and brief intervention (ASBI) should be routinely implemented in secondary care. This study used theoretical frameworks to understand how health professionals can be supported to adapt their behaviour and clinical practice.

**Design and methods** Staff training and support was conducted using theoretical frameworks. A 12-week study, delivering ASBI was carried out as part of routine practice in an endoscopy day-unit. Anonymised patient data were collected using the Alcohol Use Disorders Identification Tool (AUDIT) and whether patients received a brief intervention. Staff completed the Shortened Alcohol and Alcohol Problems Perceptions Questionnaire at three time points and took part in a focus group both pre and post study.

**Results** For staff, levels of role adequacy, role legitimacy, motivation to discuss alcohol, security in their role, job satisfaction and commitment to working with patients who drink increased during the time of the study. 1598 individual patients were seen in the department in the timeframe. Of these, 1180 patients were approached (74%); 18% (n=207) of patients were AUDIT positive.

**Discussion** This study has shown that it is possible to reach a high number of patients in a busy hospital out-patient department and deliver ASBI by working with staff using theoretical frameworks for training. Embedding evidence-based public health interventions into routine clinical environments is complex. The social system in which professionals operate requires consideration alongside individual professionals' real and perceived barriers and facilitators to change.

## BACKGROUND

In the UK, alcohol is responsible for 7% of all hospital admissions, costing the National Health Service (NHS) around £2.7 billion per year.<sup>1</sup> Individuals in North-East England make up the highest levels of hazardous and harmful (risky) drinkers in England (32%).<sup>2</sup> Risky drinking is associated with a large number of chronic diseases and injury<sup>3</sup> as well as increasing the risk of in-hospital deaths for surgical patients.<sup>4</sup> Reducing alcohol-related harm is therefore a governmental priority.<sup>5, 6</sup>

Screening the adult population for risky drinking and providing feedback and brief advice results in a reduction in the amount consumed in one in seven people.<sup>7, 8</sup> Brief intervention is a secondary prevention activity aimed at individuals who are drinking excessively or in a drinking pattern that is likely to be harmful, with the aim of helping people to change their drinking behaviour to promote health but they vary in the precise means by which this is achieved.<sup>9</sup> They can be implemented by a range of practitioners in a wide variety of settings.<sup>10</sup>

The evidence demonstrates the efficacy of alcohol screening and brief intervention (ASBI) in healthcare settings in reducing alcohol consumption, most notably within the primary-care setting<sup>11</sup> as well as some evidence of short-term efficacy in the inpatient setting.<sup>12, 13</sup> The strength of evidence has resulted in National Institute of Health and Care Excellence (NICE) public health guidance recommending that NHS professionals routinely screen patients for alcohol consumption as part

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of everyday healthcare within a variety of settings.<sup>14</sup> However, the evidence for the efficacy of ASBI for dependent drinkers is inconsistent with one review finding that the benefits cannot be extended to very heavy and dependent drinkers.<sup>15</sup>

However, routine practice of ASBI has proven difficult.<sup>16</sup> Reasons for this include alcohol being considered to be a contentious topic to discuss with patients.<sup>17 18</sup> Staff being too busy, lack of motivation and lack of adequate training are also seen as barriers,<sup>16 19</sup> as well as screening tools not being integrated into assessment tools.<sup>20 21</sup>

As there is a well-documented association between alcohol and gastrointestinal disease, including liver disease, gastro-oesophageal reflux and cancers of the bowel, oesophagus and larynx,<sup>16–22</sup> gastrointestinal departments were identified as a priority department by the local hospital.<sup>14</sup>

We report the results of a 12-week study within an endoscopy day-unit in a university teaching hospital in North-East England. The aim of this study was to evaluate whether ASBI can be implemented into a busy hospital department as part of routine clinical practice.

## METHODS

### Theoretical framework

Normalisation Process Theory (NPT)<sup>22</sup> 'is concerned with the social organisation of the work (implementation); of making practices routine elements of everyday life (embedding) and of sustaining embedded practices in their social contexts (integration)' (May 2009 p.538). This organisational level appreciation of how to implement new evidence-based interventions is essential when the aim is for whole system change within a department of a hospital. The theoretical domains framework (TDF)<sup>23 24</sup> was designed to simplify and integrate a plethora of behaviour change theories making theory more accessible. The 14 domains of TDF<sup>23</sup> provide a framework encapsulating the main components of behaviour change theory. Experts in the field have acknowledged that not all 14 domains need to be adhered to in any one intervention.<sup>23</sup> NPT and TDF are the two complementary theories used to inform this study. NPT ensures that the social system is considered while TDF emphasises individual influences on behaviour.

The theoretical frameworks were used to understand how health professionals can be supported to adapt their behaviour and clinical practice which is a fundamental component to the implementation of any new evidence-based intervention.<sup>25</sup> We involved local opinion leaders through the development of a steering group that oversaw the project. Education meetings (staff training) were delivered in the form of 1 h face-to-face training sessions for nurses as well as recommending follow-up e-learning.<sup>26</sup> Tailored interventions tools and training were provided using

bespoke resources specifically relevant to endoscopy.<sup>27</sup> Education leaflets were incorporated into training packs and provided as patient resources. Finally, audit and feedback were an essential component to implementation to assess whether nurses had successfully integrated ASBI into routine practice.<sup>28</sup> We included an opportunity for weekly feedback with staff on progress and issues arising.

### Setting, participants and duration

The study was conducted in an endoscopy day-unit within a large inner-city hospital in a North-East England hospital run by a Foundation Trust between April and July 2013. Recommendations from the research were to be considered by the hospital Public Health Trust Group.

There were 18 nurses who staffed the endoscopy day-unit during the study. The patient group comprised adults (aged  $\geq 18$  years) with gastrointestinal symptoms requiring out-patient endoscopy treatment.

### Governance, accountability and ethics

The protocol for the study was reviewed by the hospital trust research and development department and granted approval as an evaluation. Governance mechanisms were established through approval from the hospital trust senior management group and a multidisciplinary steering group provided an overview and scrutiny role.

### Screening and intervention

The tools used in this present study were adapted from the Screening and Brief Intervention Programmes (SIPS) studies of an ASBI programme of research.<sup>7 29</sup> Patients self-completed the Alcohol Use Disorders Identification Tool (AUDIT) questionnaire in the waiting area prior to their general assessment. During the shadowing of the patient pathway by Gillian O'Neill, the patient assessment was observed to be completed in approximately 7 min. Patients received their AUDIT score, feedback and brief intervention within this 7 min consultation. The literature informed the feedback and intervention delivered.<sup>3 7 29</sup> Score 0–7: patients received personalised feedback on the score and positive reinforcement. Score 8–15: patients received 5–10 min of personalised feedback and brief advice in the form of a bespoke brief advice sheet. Nurses provided patients with feedback on their screening outcome plus 5 min of structured personalised brief advice based on the 'SIPS' simple structured advice tool<sup>7 29</sup> developed from the UK version of the Drink-Less brief intervention programme.<sup>30</sup> In addition to providing specific details about the health and social consequences of risky drinking, patients were shown a gender-specific graph which indicated that their drinking exceeded most of the population and a list of benefits that would result from reduced drinking. Patients were then taken through a menu of

techniques to help reduce drinking and asked to consider a personal target for an achievable reduction.

Patients were given a Department of Health Change for Life leaflet 'Don't let drink sneak up on you'. These leaflets are freely available online in the UK and give advice on drinking alcohol and strategies for change. Patients with a score of  $\geq 16$  were given the same 5-min intervention as those scoring 8–15 received. In addition, patients received information on local alcohol services in the form of an alcohol services signposting sticker being added to the back of the Change for Life leaflet. This sticker encouraged patients to contact local alcohol services and contact information related to them was given. Nurses then documented what intervention they had administered on the reverse of the AUDIT questionnaire along with anonymous patient demographic data (age, sex, ethnicity and reason for appointment). The completed documents were reviewed to ascertain if the appropriate interventions were delivered.

### Analysis plan

Qualitative and quantitative methods of analysis were used. Staff questionnaires were administered at three time points: pre training, immediately post training and then 12 weeks after the study had taken place. These questionnaires included the Shortened Alcohol and Alcohol Problems Perceptions Questionnaire (SAAPPQ)<sup>31</sup> which is an internationally validated tool to assess professionals' role security and therapeutic commitment to working with people who drink alcohol.<sup>31</sup>

If the behaviour change theories and methods incorporated into this evaluation are successful, SAAPPQ scores should increase across the three time points. Additional questions measuring changes to knowledge, attitudes and beliefs were also included. A 1h focus group was held pre training followed by a further focus group after the 12-week study to ascertain nurses' perceived and actual barriers and facilitators implementing ASBI. All nurses consented to be audio recorded. A framework analysis<sup>32</sup> was used as the focus group topic guide, designed around the domains of TDF<sup>24</sup> and was deductive in approach. Themes included skills, knowledge, beliefs about capabilities and beliefs about consequences, environmental context and resources.

The AUDIT was used to screen patients to ascertain what level they were drinking at risky levels. The AUDIT can be scored between 0 and 40 and can be scored using a mean score or categorically; a score of  $\geq 8$  indicates hazardous (score of 8–15) or harmful drinking (16–19) or probable dependent drinking ( $\geq 20$ ), with a sensitivity of 92% and specificity of 94%.<sup>33</sup>

Statistical analysis of anonymised AUDIT questionnaires was performed using SPSS V.19. The statistical analysis was primarily descriptive and focused on the patient flow through the project.  $\chi^2$  tests were used to assess categorical data to determine differences in the denominator population attending the endoscopy day-unit and those accepting an AUDIT questionnaire.

## RESULTS

### Staff questionnaires

Thirteen nurses completed all three time-point questionnaires that were used in the analysis (tables 1 and 2). On the SAAPPQ, levels or role adequacy, role legitimacy, motivation to discuss alcohol, security in their role, job satisfaction and commitment to working with patients who drink increased during the time of the study (table 1).

Nurses identified that they had gained new knowledge, skills and confidence from taking part in the training and would recommend the training to colleagues. While most of the nurses attending training had the intention of completing the online Alcohol Learning Centre Hospital Module on ASBI, only two completed the module. Those who did, did so in their own time and found it to be useful and would recommend it to colleagues. All nurses reported that they used their new knowledge and skills during the 12-week study (table 2).

### Focus groups

Before training, six nurses participated in a focus group. All were women with varying levels of endoscopy experience. After the 12-week study period, four of the six nurses participated in another focus group. The themes from the focus groups are based on the TDF domains.

*Pretraining experience:* In the first focus group, nurses discussed dependant drinkers as their primary experience of patients and alcohol consumption seemingly overlooking the relevance of the approach to

**Table 1** SAAPPQ results

Time point	Role adequacy	Role legitimacy	Motivation	Task-specific self-esteem	Work satisfaction	Role security	Therapeutic commitment
(N13)	Mean (SD) Median	Mean (SD) Median	Mean (SD) Median	Mean (SD) Median	Mean (SD) Median	Mean (SD) Median	Mean (SD) Median
1-Pre training	10 (2) 10	10 (2) 10	9 (1) 9	9 (8) 11	9 (1) 8	20 (4) 20	28 (4) 29
2-Post training	11 (2) 12	11 (3) 12	10 (2) 10	8 (5) 10	9 (2) 8	22 (5) 24	29 (3) 30
3–12 weeks post study	12 (1) 12	11 (2) 12	10 (2) 10	11 (2) 11	10 (2) 11	23 (3) 24	31 (5) 31

SAAPPQ, Shortened Alcohol and Alcohol Problems Perceptions Questionnaire.

Table 2 Knowledge, attitudes, values and beliefs

Time point (n=13)	Knowledge on health effects of alcohol	Importance of alcohol screening	Importance of brief intervention	Appropriate to discuss AUD with patients	Confidence to hold a conversation	Confidence to signpost to alcohol services	Feasibility to include ASBI into routine practice	Clinical environment conducive to ASBI
	1=none, 5 high level Median	1=not, 5 very Median	1=not, 5 very Median	1=not at all, 5=highly appropriate Median	1=not confident, 5=very confident Median	1=not confident, 5=very confident Median	1=not, 5=very Median	1=not conductive, 5=very conductive Median
1-Pre training	3	5	5	4	3	3	4	3
2-Post training	4	5	5	5	4	4	4	4
3-12 weeks post study	4	5	4	4	4	4	3	3

ASBI, alcohol screening and brief intervention; AUD, alcohol use disorder.

addressing other patterns of risky alcohol use. 'I find the drinkers, the alcoholics, are very open about why they drink' and "Some patients have had alcohol when they come in. You can smell it on them'. Furthermore, nurses demonstrated concern regarding commencing a potentially sensitive conversation about alcohol consumption and then not having time to deal with the outcomes of the conversation. 'They [patients] may start opening up and then you're sat there and you don't know what to do with them.' As can be seen below, these views changed by the second focus group.

*Pretraining knowledge/skills:* In the first focus group, nurses identified that they had a lack of knowledge on the health effects of alcohol and where to signpost a patient should they require more specific alcohol services. 'Personally, I've never had a conversation with them [patients] about alcohol. I perhaps wouldn't know where to start.'

In the follow-up focus groups, nurses reported increased knowledge to enable them to talk to patients about alcohol. There was a consensus that following the training, there was an appreciation that ASBI was not complicated and did not require specialist skills. 'The training definitely helped. For me, not knowing much about it, having that training gave me knowledge to be more aware...It made me more aware in a positive way.'

*Pretraining professional role and identity:* In the first focus group, there was a consensus of opinion that discussing alcohol should be part of their job description. Talking about lifestyle issues was considered important with smoking already part of the general assessment booklet. 'Its, er, just like the smoking conversation' and 'it's relevant to the test we do.' This was reinforced in the follow-up focus group. 'I think it's been a really good health promotion exercise cos I think that's what we are, we are health educators and 'You just get into the habit of doing it. It just becomes part of something that we have to do.'

*Pretraining beliefs about the capabilities:* In the first focus group, nurses stated that they did not have the confidence to discuss alcohol and identified a clear training need. 'Maybe with a little bit of training cos, you know, all I know is what you see on posters and just generally what you hear from people.' Confidence had increased by the second focus group. 'Having leaflets there in front of you and then the patients don't think 'Oh my God this must be unusual'. You sort of feel more comfortable' and 'I think now if someone comes in with inflammation of their stomach I can say now have you considered alcohol, whereas before I wouldn't have thought about it'.

*Pretraining environmental context and resources:* In the first focus group, nurses discussed time constraints to complete all mandatory paperwork and manage patient lists. Concerns were identified regarding time to deliver a brief intervention within the clinic schedule. 'We have to assess a lot of patients—up to 20 a day so it's the time really.' In the second focus group, nurses suggested that the AUDIT-C would be possible to incorporate into the general assessment form rather than the 10-item AUDIT. 'I think it's a good idea to have just three questions in the paperwork' and 'If it's incorporated into the assessment it makes it better.'

#### Patient flow

During the 12-week study period, 1598 individual patients were seen in the endoscopy day-unit. Of these, 1180 patients were approached (74%). Ninety-eight per cent (n=1128) completed the AUDIT questionnaire (figure 1). The number of questionnaires ranged from 54 to 122 in the 12 weeks (mean 96, SD 21.3). Of those who did record sex, 51% (n=557) were women. Ethnicity was not recorded on 57 questionnaires. Of those who did record ethnicity, 94% (n=1012) were White British. There was no statistically significant difference between the sex, age or ethnicity of the screened population compared with those who were not screened in the time frame.

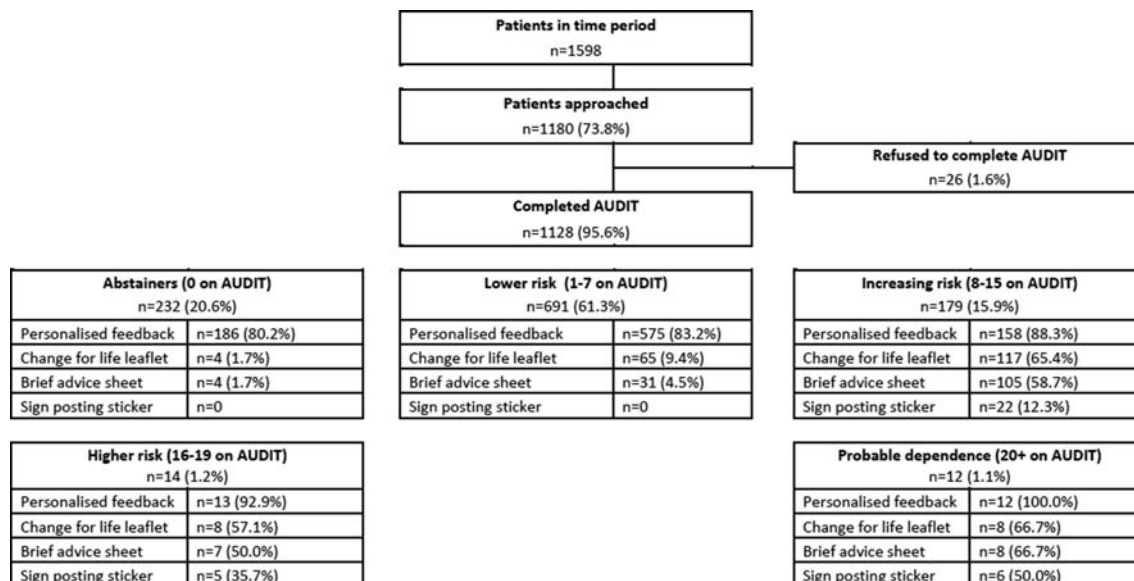


Figure 1 Flowchart of study.

### Alcohol Use Disorders Identification Tool

The mean score for the AUDIT was 4.34 (SD 4.57; range 0–38). Eighteen per cent (n=205) of patients were AUDIT positive and scored  $\geq 8$  on the AUDIT. Of those where sex was recorded (n=1093), 26% (n=141) of men and 10% (n=57) of women scored AUDIT positive ( $\chi^2$  46.49; df 1;  $p < 0.0001$ ; table 3).

### Interventions received

Figure 1 shows the flow of patients throughout the 12-week study. Interventions received are shown in table 4. Eighty-four per cent (n=945) of patients were recorded as receiving personalised feedback; 82% of those who were AUDIT negative and 90% of those who were AUDIT positive (table 4).

### DISCUSSION

The purpose of this study was to determine how behaviour change theory and methods could impact upon the delivery of ASBI into the routine practice of a busy hospital outpatient department. The 12-week study demonstrated that opportunistic ASBI is possible in this population with staff carrying out a high

proportion of screening. Seventy-two per cent of eligible patients were screened. The results show that 18% of patients screened positive on the AUDIT screening tool (score of  $\geq 8$ ). A high proportion of that should have received feedback (84%), a leaflet (65%) or brief advice (59%) did so.

SAAPPQ results demonstrated a positive shift in attitudes for staff over the study period. Pre-training and post-study focus groups highlighted the barriers and facilitators in implementing ASBI. Using the TDF domains: skills, knowledge, beliefs about capabilities, beliefs about consequences, environmental context and resources were the main barriers identified in delivering ASBI as part of routine practice as others have found.<sup>34</sup> Post-study focus group discussions highlighted a positive shift in confidence and an acknowledgement of improved skills, knowledge and perceived ability to discuss alcohol with patients.

The strengths of this study are that this is one of the first studies in a secondary care outpatient setting and showed that it is possible to implement ASBI in a busy hospital department. Others have reported that having a champion on site is imperative to work of

Table 3 AUDIT ranges by sex

Range (AUDIT score)	Male (n=536)		Female (n=557)		Total (n=1093)	
	n	Per cent	n	Per cent	n	Per cent
Abstainers	75	14.0	152	27.3	227	20.8
Lower risk (1–7)	320	59.7	348	62.5	668	61.1
Increasing risk (8–15)	124	23.1	49	8.8	173	15.8
Higher risk (16–19)	10	1.9	3	0.5	13	1.2
Probable dependence ( $\geq 20$ )	7	1.3	5	0.9	12	1.1

Sex not recorded for 35 patients.

AUDIT, Alcohol Use Disorders Identification Tool.

## ENDOSCOPY

**Table 4** Interventions received according to AUDIT score of patient

Intervention received	Abstainer (n=232)	Lower risk (n=691)	Increasing risk (n=179)	Higher risk (n=14)	Probable dependence (n=12)
Personalised feedback	186 (80.1%)	575 (83.2%)	158 (88.3%)	13 (92.9%)	12 (100%)
Change for life leaflet	4 (1.7%)	65 (9.4%)	117 (65.4%)	8 (57.1%)	8 (66.7%)
Brief advice sheet	4 (1.7%)	31 (4.5%)	105 (58.7%)	7 (50%)	8 (66.7%)
Signposting sticker	0	0	22 (12.3%)	5 (35.7%)	6 (50%)

Greyed out boxed indicate when intervention was given per protocol.  
AUDIT, Alcohol Use Disorders Identification Tool.

this kind,<sup>13 35 36</sup> and in this present study, we did have a nurse who led the work from the inside. To aid other practitioners replicate this work, an 'Implementation Toolkit' has been developed for hospital staff which includes training materials (PowerPoint presentation and guidelines for use) and examples of ASBI tools with guidelines of how they can be adapted for different wards which was made available to all staff through the hospital intranet. The toolkit also includes links to readily available online training materials.

This study does, however, have limitations. It was conducted within one department of a single hospital based in North-East England over a very short period of time. Only a small number of staff took part in the focus groups and the questionnaires and we do not have any feedback from patients. Not all patients received the intervention that they should have and information was not recorded for a high proportion of people in relation to their intervention. One reason for this was that this was an extra piece of paper added to the existing patient assessment, which meant for some of the questions, for example, gender, the nurse was completing this information twice. The hospital has incorporated the screening tool into their assessment tool as well as information relating to whether a brief intervention took place which will mean that it is not an add-on to existing documentation which has been shown to be a barrier to staff taking part in ASBI.<sup>20 21</sup> Evaluation of completion of information should be a part of any key performance indicators in relation to any ongoing work, however, it may be that in this environment screening and feedback is the most that can be carried out.

### Conclusion

This study has shown that it is possible to reach a high number of patients in a busy hospital out-patient department and deliver ASBI by working with staff using theoretical frameworks for training. Embedding evidence-based public health interventions into routine clinical environments is complex. The social system in which professionals operate requires consideration alongside individual professionals' real and perceived barriers and facilitators to change. By applying all three layers of the conceptual model, a process for change can be planned and delivered.

### Key messages

#### What is already known on this topic

- ▶ In the UK, alcohol is responsible for 7% of all hospital admissions, costing £2.7 billion per year.
- ▶ Alcohol Screening and Brief Interventions (ASBI) can significantly reduce hazardous and harmful drinking.
- ▶ Despite the evidence ASBI is not being routinely used in hospital departments as part of routine clinical practice.

#### What this study adds

- ▶ By using theoretical frameworks for nurse training it is possible to carry out high numbers of ASBI as part of routine clinical practice in an endoscopy day unit.
- ▶ Embedding screening tools into routine paperwork has the potential to increase the numbers of ASBI carried out.

**Twitter** Follow Dorothy Newbury-Birch at @dotbirch

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**Competing interests** None.

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**Data sharing statement** The questionnaire and further data are available from the corresponding author.

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