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SCREENING AND BRIEF ALCOHOL
INTERVENTION IN PRIMARY HEALTH CARE

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ABSTRACT

Alcohol is a major cause of social, health and economic problems in the United Kingdom. Thus reduction in excessive drinking was one of the targets included in the White Paper, "Saving Lives: Our Healthier Nation" and is the subject of a National Harm Reduction Strategy. However alcohol problems are responsive to brief intervention (5-10 minutes of structured advice accompanied by written material). A number of randomised controlled trials have shown that, in comparison with controls, excessive drinkers receiving brief advice will reduce their alcohol consumption by around 25%. General practice is a particularly valuable point of contact for the delivery of brief intervention for excessive alcohol use because of the large proportion (70%) of the population who access their general practice each year. Excessive drinkers present twice as often as other patients and may constitute 20% of patients on a practice list. However, the potential of both General Practitioners and primary health care nurses to reduce the prevalence of alcohol related problems contrasts sharply with current practice.

This Doctorate of Philosophy by published work is based on a programme of research, using the principles of social marketing, to disseminate and implement screening and brief alcohol intervention in primary health care. The submission includes a series of papers, published in a variety of peer-reviewed journals. Although the papers included in this thesis address different research questions and report a range of research techniques each makes a contribution to the field of screening and brief alcohol intervention. Publications reveal that General Practitioners remain unaware of the evidence for screening and brief alcohol intervention. While effective dissemination and implementation strategies are available, General Practitioners exhibit selective provision of screening and brief alcohol intervention. This is also the case for primary health care nurses. Although health professionals often cite negative patient reactions, patients consider screening and brief alcohol intervention appropriate when carried out under suitable conditions.

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DOCTORAL STATEMENT

A RESEARCH APPRENTICESHIP

My research training began in earnest when I joined the School of Population and Health Sciences at the University of Newcastle in September 1995. Prior to 1995 I was educated, to degree level, in Psychology specialising in Human Resource Management (HRM), achieving an MA. Both degree programmes were taught but required an early awareness of basic research skills through the completion of a dissertation for each course. My education stood me in good stead for my first step on the career ladder as an Assistant Psychologist. This short-term position, investigating occupational stress within the NHS, gave me an excellent basic knowledge in research techniques and provided my first opportunity to publish my work. After a brief foray into the world of commerce and industry, which allowed me to develop my people skills and become a strong negotiator, I returned to research as a Junior Research Associate. This position would see me employ a variety of research methods from the gold standard randomised controlled trial of quantitative techniques to qualitative methods such as interviews and focus groups and was to form the basis of my Doctorate of Philosophy (PhD) by published work.

I joined a multidisciplinary project team, adding my knowledge of psychology, business and HRM, during Phase III of a World Health Organisation (WHO) collaborative study on disseminating, implementing and supporting screening and brief alcohol intervention throughout primary health care. In addition to the team with which I worked daily I also became part of a team of WHO Collaborators contributing to debate and presenting at international WHO collaborators' meetings.

The aim of the WHO programme of work was to develop simple methods of early detection of excessive drinking (Phase I), to identify the most effective techniques to reduce excessive drinking which could be applied in primary health care (Phase II) and to develop effective strategies to disseminate and implement early intervention

techniques throughout primary health care (Phase III). The first phase which commenced in 1983 resulted in the development of the Alcohol Use Disorders Identification Test (AUDIT) which is a brief (ten item) questionnaire specifically designed for the early detection of excessive alcohol consumption. The second phase evaluated three methods of brief intervention in a randomised controlled clinical trial in which ten countries participated. The results of the trial showed that five minutes of advice on alcohol was followed by a 30% reduction in intake among excessive drinkers. Details of the third Phase are outlined below.

As the programme of research related to alcohol and behaviour change, I was able to apply theories from psychology to my work. I had already been introduced to the field of alcohol during my psychology degree. However alcohol was mainly presented as a drug with negative health consequences and behavioural responses. We studied alcohol as an addictive, dependence-inducing drug that ultimately led to alcoholism. Theories of and treatments for alcoholism were presented. Another topic commonly discussed in the psychology literature was reasons why people used alcohol. Coming to the field anew I soon realised we were not only concerned with the small proportion of the population who were alcohol dependent but all those individuals who may be at risk from drinking too much alcohol. Rather than a treatment for alcoholism, screening and brief alcohol intervention is aimed at preventing the problems associated with excessive alcohol consumption from arising.

When trying to understand health behaviour or design a programme to change the health behaviour of an individual or group, it is useful to have a theoretical model as a starting point. The Transtheoretical Model (Prochaska & Di Clemente 1982) is a psychological model which has been shown to be useful in studying several health behaviours including alcohol. It postulates that both the cessation of high risk behaviour and the acquisition of healthier alternatives involve progression through stages of change. In retrospective, cross-sectional and longitudinal studies of how people quit smoking on their own, evidence was discovered that smokers move through an orderly series of stages of change in their efforts to quit smoking. There is

a number of processes of change that can be used in altering a wide variety of behaviours. At each stage of change different processes of change, or intervention approaches, are needed. When intervening with people with high-risk lifestyles there is a need to be sensitive and to speak the language of the stage that they are in. Unless interventions are offered that are matched to the stage that people are in, the interventions will only serve a minority of people. For example stage-matched programmes for cardiovascular disease prevention can produce much higher participation rates than traditional action oriented programmes (80-85% versus 1-5%).

The stages of change are; *Precontemplation* - a period in which individuals are not thinking about changing behaviour (at least not within the next 6 months), have no intention of changing behaviour and are not ready to take action. Typically about 50% of populations at risk are in the precontemplation stage and will use processes such as consciousness raising to increase the amount of information and knowledge they have, including the pros and cons of changing their high-risk behaviour. Interventions will be needed that help to counteract individuals' demoralisation and increase their confidence and belief that changing is something within their power. General Practitioners (GPs) often do not intervene with these people, perhaps because they recognise that they are not ready for action but they are often the most in need of help. *Contemplation* - the period of time in which individuals are seriously thinking about changing behaviour in the next 6 months but not within the next month. People in contemplation can be plagued with profound ambivalence. Self-re-evaluation and self-liberation may be particularly well suited in the contemplation stage. *Preparation* - the time in which individuals seriously think about changing behaviour in the next month. They typically have a plan. These people are convinced that the pros outweigh the cons but their biggest anxiety is that they may fail, which can keep them from progressing. At any point in time only a minority of populations at risk are prepared to take action on their problem behaviours. *Action* - a period ranging from 0-6 months after individuals have made the overt behaviour change. The action stage is the busiest period of change with people using the most processes of change most intensely. Contingency management (reinforcement), helping relationships, and

stimulus control may be helpful. *Maintenance* - the period beginning 6 months after action has started and continuing until the behaviour is terminated as a problem. The person has been successful in sustaining change. Maintenance involves continued change using behavioural change processes to keep from relapsing. Again contingency management (reinforcement), helping relationships, and stimulus control may be appropriate in this stage. *Relapse* to an earlier stage can occur at any time. *Termination* occurs when individuals terminate their risk factor entirely. Termination means that there is no temptation and 100% confidence that they will not go back to old lifestyles. This occurs in only about 17% of alcohol abusers (Prochaska & Di Clemente 1982) (Prochaska 1994) (Prochaska *et al.* 1994) (Prochaska 1995).

I initially began to work and then to publish on Strand I of Phase III of the WHO study. Strand I was a postal questionnaire survey of a random sample of 430 GPs in the Midlands which aimed to investigate their recognition of and intervention for excessive drinking and alcohol problems among their patients. It also aimed to assess GPs attitudes to this work and to determine whether any changes in these attitudes had occurred over the last decade. I was involved in the publication of two papers from this survey (*Paper 1* and *Paper 2*). As I was still a relatively inexperienced researcher and had joined the team mid way through Strand I my role in the production of these publications was one of a co-author learning from my more experienced colleagues.

Paper 1 reports that levels of recognition of and intervention for excessive drinking by GPs were low. GPs did not routinely enquire about alcohol and had managed only small numbers of patients specifically for excessive drinking or alcohol problems in the previous year. Although 83% of GPs felt prepared to counsel excessive drinkers only 21% felt effective in helping patients reduce consumption. Over the past 10 years there appears to have been an increase in numbers of GPs who feel that they should be working with alcohol issues but fewer GPs perceive themselves as being effective in this work. The main barriers to brief alcohol intervention were given as insufficient time and training and lack of help from government policy; the main

incentives related to availability of appropriate support services and proven efficacy of brief interventions.

Paper 2 reports that GPs spend an average 16% of practice time on prevention and 79% reported educating patients about lifestyle risk most or all of the time. Solo GPs spent more time on prevention than GPs from group practices. Most enquiries and interventions related to smoking behaviour. The largest reported difference between current and potential effectiveness in helping patients change lifestyle behaviour, after information and training, related to reducing alcohol consumption. Despite an increasing workload, GPs remain positive about health promotion and lifestyle counselling. Confidence about effectiveness in helping patients change lifestyle behaviour remains low.

These papers show that, while there may be a strong evidence base for screening and brief intervention, the uptake by GPs has been negligible and it appears that GPs remain unaware of the positive evidence for screening and brief alcohol intervention. Health research findings are of little benefit to patients if they do not reach the audience they are intended to influence. As a result there was a need to investigate methods of conveying research findings to those who can act on them. The views of GPs as reported in *Paper 1* and *Paper 2* were therefore extremely important in developing dissemination and implementation strategies for further increasing GP involvement in screening and brief alcohol intervention.

My next project was Strand III of Phase III of the WHO collaborative study which was a randomised controlled trial aimed at providing information on effective and cost effective strategies for increasing GP involvement in screening and brief intervention for excessive alcohol consumption. I took the role of project manager coordinating the day to day running of the study and making key decisions regarding necessary changes to the study protocol. Because of my increased involvement in this study I also took a principal role in the publication of 5 papers (*Paper 3, Paper 4, Paper 5, Paper 6 and Paper 7*) from this project.

Paper 3 reports the randomised trial of three marketing strategies to influence dissemination of the screening and brief alcohol intervention programme to GPs. GPs were assigned to one of three marketing strategies: postal marketing, telemarketing and personal marketing. Although personal marketing was found to be the most effective overall dissemination strategy, economic analysis revealed that telemarketing was the most cost-effective strategy. Despite extensive use of marketing or dissemination strategies in commercial arenas *Paper 3* remains part of only a small body of evidence regarding effective dissemination strategies for health related research. However, providing GPs with new research findings or guidelines is rarely sufficient to promote changes in practice. An implementation strategy was required to provide GPs with the skills and encouragement needed to alter established routines.

Paper 4 reports a randomised controlled trial of the effectiveness and cost effectiveness of three training and support strategies in promoting implementation of a brief alcohol intervention programme in primary health care. GPs were randomly allocated to three intensities of training and support; controls receiving written guidelines only, trained GPs and trained and supported GPs. Practice based training plus support telephone calls was the most effective and cost effective strategy to encourage implementation of screening and brief intervention by GPs.

The effectiveness of an evidence-based health care intervention depends on it being delivered consistently to appropriate patients, that is why *Paper 7* describes the patient population screened by GPs using the brief alcohol intervention programme in the trial in order to investigate patterns of excessive drinking in the patient population and to investigate patient and practitioner characteristics that may influence the provision of brief alcohol intervention. General Practitioners exhibit selective provision of screening and brief intervention to excessive drinkers based on data from 84 GPs who administered 12,814 AUDIT questionnaires. GPs' provision of screening and brief alcohol intervention can be predicted by patient characteristics (age,

education and occupational status), practitioner characteristics (member of RCGP, training in screening and brief intervention) and structural factors (size of practice, consultation length).

Because reception staff were asked to assist GPs in the trial by administering the screening questionnaires to patients they became the subject of *Paper 6*. Little is known about receptionist attitudes towards research or health promotion programmes yet they are increasingly asked to be involved. Consequently *Paper 6* examined changes in receptionists' attitudes towards involvement in the trial. Receptionists developed more negative views about involvement in research and health programmes over the three-month study period, regardless of level of training and support. This is an important finding for others trying to implement new programmes into primary health care

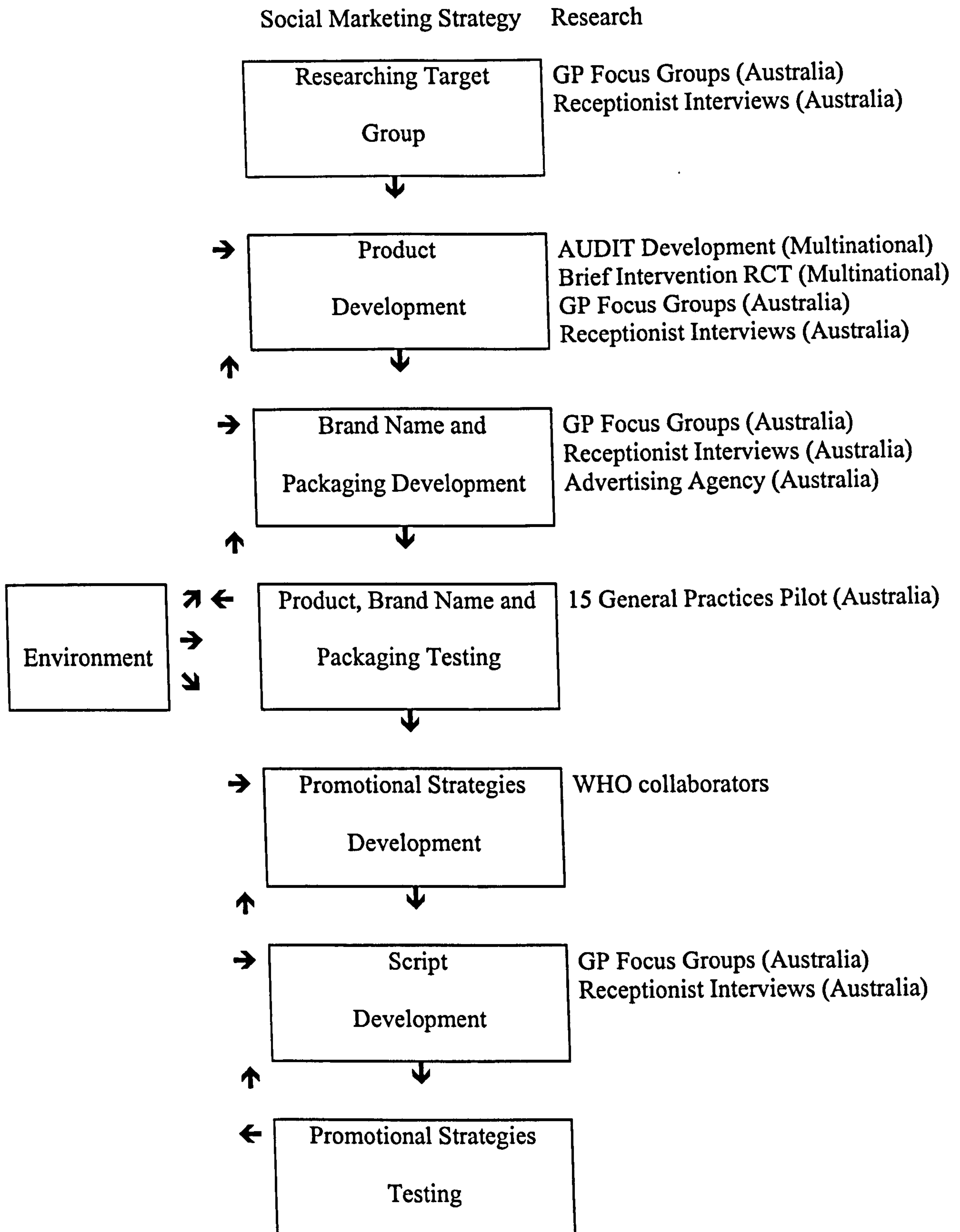
Following the success of *Paper 3* I was approached directly by a journal to write another article from this study. Being invited to write a paper for a journal was a new challenge for me. Although I knew the subject area well and was keen to take up the challenge at this point in my career I felt that I still lacked the experience for solo authorship so I enlisted the help of my line manager to co-author this paper. The invitation to write this paper came from a previous publication and the editor of the *Journal of Evaluation in Clinical Practice* wanted a further paper about the same subject. It was, thus, necessary for me to think of and develop an alternative perspective. It was during this developmental stage that I hit upon the theory of social marketing. As I developed this idea further I found that the early WHO collaborators had used the principles of social marketing to develop the screening and brief intervention programme (Drink-Less) and the dissemination and implementation strategies that we had adopted. The theory of social marketing, developed by Kotler and Roberto (1989), applies marketing principles and techniques to change behaviour. The theory neatly amalgamates ideas from both psychology and business management and thus had arisen during both my earlier degrees. Therefore I used *Paper 5* to explore the concept of social marketing in some depth and describe how

the principles of this technique had been applied to the development of the Drink-Less screening and brief intervention programme and the strategies used to disseminate and implement the programme.

Early prototypes of the Drink-Less screening and brief intervention programme were based on materials developed and evaluated in earlier World Health Organisation studies (Saunders *et al.* 1993, Babor *et al.* 1994). Product development was initially carried out in Australia and emphasised the social marketing principal of identifying customer needs (GPs and receptionists) to allow the pricing, packaging, promotion and distribution of products that are likely to be acceptable to target adopters. Three GP focus groups and ten receptionist interviews were carried out to assess a) perceived need for SBI programme b) opinions on the content, format and presentation c) potential barriers to acceptance/programme implementation in general practices and d) to pretest/pilot SBI programme in 15 general practices. An advertising agency assisted in the packaging of the intervention (Gomel *et al.* 1993; 1994).

Below is figure 1, which represents a conceptual social marketing framework. Onto this strategy I have mapped the research carried out by early WHO collaborators in the development of the screening and brief alcohol intervention programme and the subsequent dissemination and implementation strategies. It soon became clear that while the research we had carried out in the UK had added to the marketing strategy there were still a number of key elements missing. In particular there was a lack of research with primary health care nurses and with patients. While the study team had planned to carry out similar enquiries with a cohort of nurses there were no plans to carry out any patient research. Therefore I decided to drive this forward myself, developing it as my own research interest area.

Figure 1: Social Marketing Strategy (WHO Studies)



(AUDIT = alcohol use disorders identification test, RCT = randomised controlled trial)

As part of a now well-established study team I became integral to the development process of our portfolio of future research. Although I could not be a co-applicant in funding applications, due to the temporary nature of my contract, I was directly involved in shaping the protocol of our next project. Primary health care nurses became the focus for our screening and brief alcohol intervention research following the large proportion (40%) of GPs who obtained assistance from primary health care nurses in implementing the screening and brief intervention programme. This study took the form of a randomised controlled trial of training and support strategies to encourage implementation of screening and brief alcohol intervention by primary care nurses. However, as a pilot to the trial, a qualitative study was carried out in order to investigate nurses' attitudes and practices to screening and brief alcohol intervention. In addition this qualitative study allowed the screening and brief alcohol intervention programme and process to be further refined. Again, as I had a prominent role in this research, this was reflected in my prominence within the three outputs for publication (*Paper 8, Paper 9 and Paper 11*).

Paper 8 reports the qualitative study which employed semi-structured interviews to explore primary health care nurses' attitudes and practices regarding brief alcohol intervention in order to understand why it was under-exploited. *Paper 8* highlights that while primary health care nurses have many opportunities to engage in alcohol intervention, most have received little or no preparation for this work. Nurses outlined a requirement for clear health messages about alcohol, training in intervention skills, facilitation to enhance confidence regarding intervention, and support to help deal with negative patient reactions.

Paper 9 reports the randomised controlled trial of training and support strategies to encourage implementation of screening and brief alcohol intervention by primary care nurses. The three levels of training and support were the same as in the GP trial. Controls were less likely to implement the programme, screened fewer patients and delivered fewer brief interventions to excessive drinkers. However they displayed the least errors in overall patient management. Therefore, given the potential anxiety due

to misdirected advice about alcohol-related risk, the balance of evidence favoured the use of written guidelines only, to promote screening and brief intervention by nurses in primary health care.

Again the effectiveness of an evidence-based health care intervention depends on it being delivered consistently to appropriate patients. Following findings of selective provision from the GP trial, *Paper 11* describes the patient population screened by nurses using the brief alcohol intervention programme in the trial in order to investigate patterns of excessive drinking in the patient population and to investigate patient and practitioner characteristics that may influence the provision of brief alcohol intervention. Primary care nurses exhibit selective provision of brief intervention to risk drinkers based on data from 128 nurses administering 5541 AUDIT questionnaires. Patient (sex) and nurse factors contribute to this selective provision of brief intervention in primary care. However nurses provide brief intervention to patients in a more consistent manner than GPs although they screen fewer patients overall.

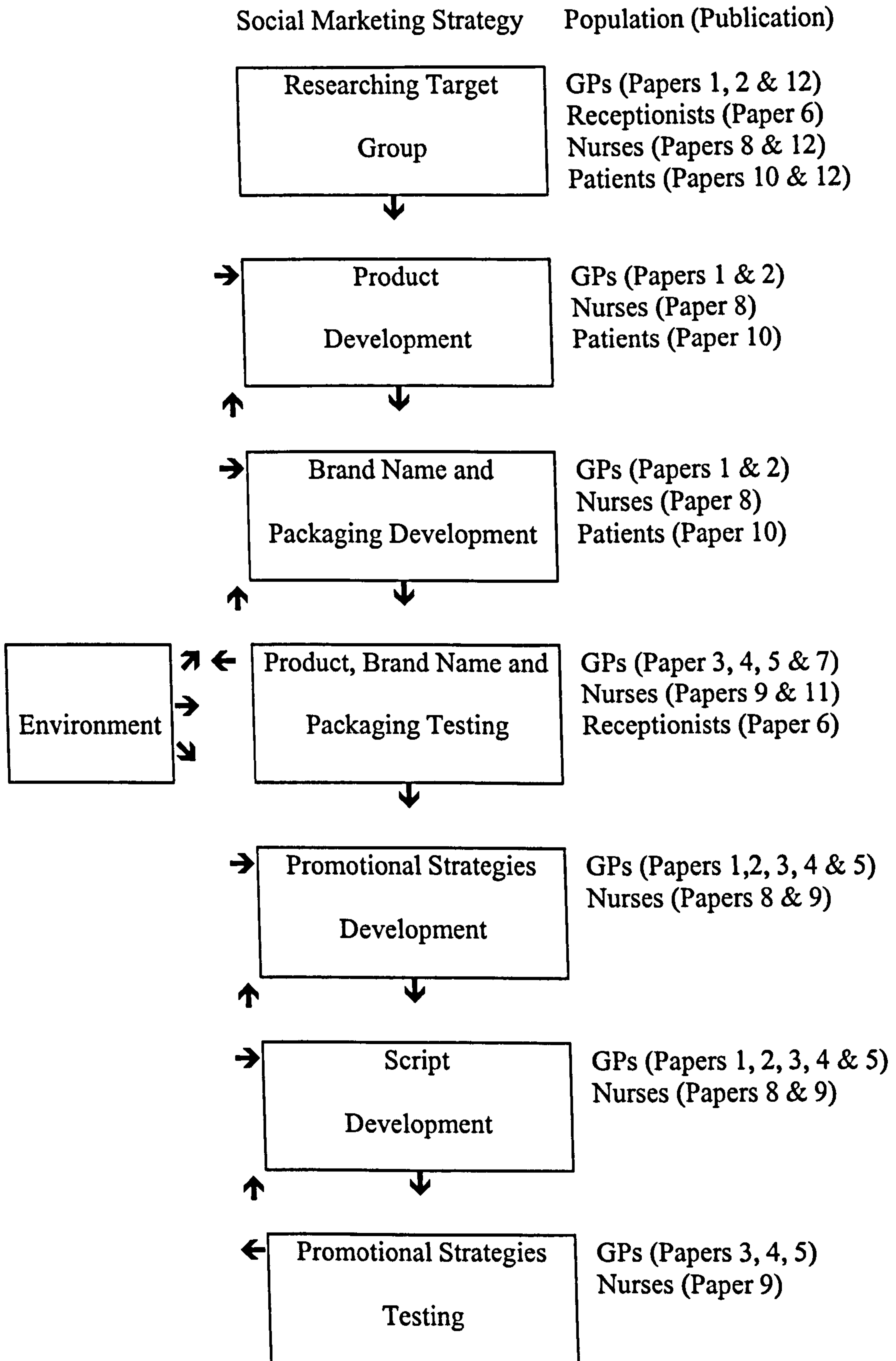
Because health professionals cited concerns regarding negative patients reaction to screening and brief intervention and because this element was missing from the social marketing strategy used in this programme of research, I developed and carried out a qualitative study using focus groups to explore patients' attitudes to and experiences of brief alcohol intervention in primary health care so that health professionals can provide a service which is more acceptable to patients. *Paper 10* is therefore my first solo-authored paper and describes the results of this qualitative study. Patients reported responding positively to advice when delivered in an appropriate context and by a health professional with whom they had developed a relationship and rapport. Overall the GP was deemed the preferred health professional with whom to discuss alcohol issues.

My second solo-authored publication, *Paper 12*, reviews the screening and brief alcohol intervention literature in detail. I decided to review the literature because

there is a huge number of publications in this field, with systematic reviews outnumbering randomised controlled trials in some cases. Also this area is relatively controversial with ongoing debate particularly regarding the effectiveness of screening as a precursor to brief alcohol intervention. I therefore chose a literature, rather than a systematic, review providing a general overview of what screening and brief alcohol intervention is, why it should be carried out, by whom and in what context.

This programme of research and the associated publications all contribute to the separate components of the social marketing strategy.

Figure 2: Social Marketing Strategy (Doctoral Studies)



Throughout my career I have further contributed to the research environment through national and international conference and internal presentations (see supporting conference abstracts). I also have the ability to review literature produced by my peers for publication and have reviewed for the PPP Foundation, British Journal of General Practice, Family Practice, Alcohol and Alcoholism, Drugs: Education, Prevention and Policy, Journal of Advanced Nursing and BMC Public Health. Due to my increasing expertise as a researcher I was promoted, without a PhD, to the position of Research Associate.

METHODOLOGIES AND FINDINGS

This programme of research was undertaken in order to inform health professionals who are under an obligation to provide evidence-based medicine. The methodology used for each study was carefully chosen, was intended to be the most appropriate means with which to answer the research question posed and involved a mix of both quantitative and qualitative techniques. Although advocates of either quantitative or qualitative research might argue for different methodologies according to their perspective, the premise here was that by combining elements from both qualitative and quantitative schools a comprehensive overall picture of the area of research would be provided. Qualitative techniques such as interviews and focus groups were used when in depth data was required. Quantitative techniques such as the gold standard randomised controlled trial or questionnaire surveys were used to provide results which would be generalisable and transferable. Some caution is needed however in generalising the results of these studies, particularly when a different subject matter is used or when strategies are implemented in other countries as the interest of health professionals will depend on the subject matter and costs will vary significantly depending on the country in which strategies are applied.

In Strand I of the WHO study GPs were surveyed with a mainly quantitative questionnaire. This was chosen as the quickest, easiest and cheapest method with which to gather a large amount of information from a number of GPs in order to provide results which could be compared with earlier research work. During

questionnaire surveys every effort was made to ensure satisfactory response rates, such as making them anonymous, posting additional questionnaires and using telephone reminders, so that results would be representative of the group being surveyed. In most cases sample characteristics were compared with the characteristics of the group as a whole in order to determine whether the response was biased in any way. In all cases there were a proportion of non-responders. However in the questionnaire survey of receptionists' attitudes towards involvement in research this proportion of non responders was relatively large. While it can be argued that the attitudes of those receptionists surveyed are not representative of the group as a whole it is likely that those who chose not to respond held a more negative view than those who responded. Questionnaire surveys can also be challenged by responder bias and a lack of depth.

In Strand III of the WHO study, and the equivalent nurse study, a randomised controlled trial was used as this represents the methodology of choice for determining efficacy and effectiveness of interventions. Randomised controlled trials with their prospective definition of methods and outcome measures, blind assessment of outcomes and unbiased selection of subjects and controls provide the best possible evidence for deciding the value of an intervention. However problems arise in securing patient consent or a lack of sufficient patient numbers. The randomised controlled trials carried out within this programme of research were all pragmatic or real world trials as randomised controlled trials carried out under optimal research settings are often criticised for their lack of transferability.

Interviews were used in order to fully understand nurses' impressions and experiences of screening and brief alcohol intervention. Interviews were chosen because they allowed exploration of a full range and depth of information, development of relationships and were flexible. However the interviews took a lot of time, were challenging to analyse and compare, and introduced the possibility of interviewer bias. Focus groups were chosen to explore patients' attitudes to alcohol and brief intervention in depth through group discussion. Focus groups were a relatively quick

and reliable method of getting common impressions and were an efficient way to get much range and depth of information in a short time but again were hard to convene and then analyse.

Both interviews and focus groups required qualitative analysis which can be challenging. In early qualitative work attempts were made to classify the perspective or approach adopted towards data collection and analysis. For example it was reported that nurse interviews used a grounded theory approach. With hindsight it is clear that this was probably not the case. Data were collected and analysed by researchers with preconceived ideas regarding the subject matter and not the blank canvas as defined by grounded theory. Later qualitative analysis drew on influences from a variety of qualitative perspectives but did not attempt to classify the perspective adopted.

Throughout the programme of research each study was conducted in a distinctly separate area of the UK in order to prevent practices becoming over burdened with requests to become involved in research.

THEORETICAL AND CONCEPTUAL FRAMEWORKS

Inevitably research raises as many questions as it answers and this programme of research was no exception. Although these questions remain unanswered theoretical and conceptual frameworks allows speculation regarding what could be taking place. The stages of change model and social marketing theory can be applied not only to the behaviour of the patient but also to the behaviour of the health professional. The main questions raised by this programme of research and possible explanations are outlined below:

Why were receptionists less positive about their involvement with the brief alcohol intervention programme than most GPs and nurses?

Facilitating professional behaviour change towards an innovation is a complex issue but with clearly defined stages that have been outlined in the model and theory

presented. An effective change strategy requires a strong and robust evidence base; identification of environmental, organisational, and individual barriers to change; and appropriately targeted interventions that maximise facilitating factors for the innovation while minimizing any barriers. Given the strong evidence base for brief alcohol intervention, the prospects for implementing this approach in primary health care were good. However while most GPs and nurses in this study were positive about their involvement with the brief alcohol intervention programme, receptionists reported less positive views. Researchers must be aware that different groups of people within a system may have different barriers to the innovation and therefore different speeds of acceptance of change. Continued reinforcement and support may be necessary, as in patient behaviour change, in order to maintain programme use.

Why do GPs and nurses fail to implement the brief alcohol intervention programme effectively?

GPs and nurses did not always implement the programme effectively, for example they did not always advise excessive drinking patients, and therefore they may not have been fully accepting of the programme. A number of theories could be used to explain health professionals' inconsistent approach to the provision of brief alcohol intervention. It could be postulated that health professionals were making decisions, subconsciously or otherwise, regarding the stage of readiness to change in which they find their excessive drinking patients. Health professional may be applying criteria from the readiness to change model in order to select which excessive drinking patients will be receptive to brief alcohol intervention. Also the fact cannot be discount that other health related matters, which were not recorded during the study, may be confounding the behaviour of the health professional. Health professionals may view some patients as outliers or at the margins and choose not to intervene even though these would be included under the protocol. Health professionals do not always follow protocols and may question the validity of the research on which it is based. Health professional experience acts as a substitute for formal research findings and the standard by which findings are judged.

Why do nurses, who receive written guidelines only, show more appropriate patient management than trained nurses?

Providing primary care nurses with written guidelines only resulted in more appropriate patient management than training nurses. There are two approaches to medical problems solving, some health professionals act upon research evidence while others act upon experience. While many health professionals act upon a combination of research evidence and experience more often than not health professionals rely on personal experience over research evidence. Perhaps nurses who received no training were strongly protocol driven and followed research based evidence while trained nurses may have felt more confident about using their clinical judgement and followed practice based evidence.

AREAS FOR FURTHER RESEARCH

Like all health related interventions and treatments, methods for preventing alcohol problems need to be evidence based. A phased model of research for alcohol problems prevention has been proposed which accommodates the special characteristic of this research. Phased models for prevention research establish a logical progression of research from basic to more applied investigations. Each phase builds on prior research phases, and movement to more advanced phases must be justified in terms of completion of research in earlier phases. In general only when relevant building blocks have been completed should research proceed forward. The phases of research which have been proposed are:

1. Foundation research to define and determine the prevalence of specific alcohol-involved problems, establish causal factors and processes that yield the specific problems or increase the risk of a problem. Provides the foundations for the development of effective prevention interventions.
2. Developmental (preliminary effectiveness) studies to develop and test the likely effectiveness, safety, and costs of new interventions or to assess the effectiveness, safety, and costs of an existing intervention.
3. Efficacy studies to determine the effects, safety, and costs of an intervention under optimal conditions of implementation and acceptance.

4. Effectiveness studies of the real-world effectiveness of preventive interventions with purposeful or natural variation in implementation and acceptance.
5. Demonstration studies of the effects of interventions when widely disseminated (Holder *et al.* 1999)(Flay 1986)

Based on the findings from reviewing the literature and the programme of published work it has become clear that there is a need for further research. Areas in which research is required include pragmatic “real world” effectiveness trials of screening and brief alcohol intervention, particularly with health professionals other than doctors, and demonstration studies of the effects of widely disseminating screening and brief alcohol intervention within communities. With this in mind future publications will include: Results from a randomised controlled trial of the effectiveness and cost effectiveness of nurse-led screening and brief alcohol interventions in primary health care and Phase IV of the World Health Organisation collaborative study on implementing and supporting screening and brief alcohol intervention in primary health care which aims to develop a strategy for implementing screening and brief alcohol intervention in primary health care in England.

However there is also a number of other gaps in the literature that still need to be developed. For example there is an alarming number of children and young adults drinking large quantities of alcohol and many who are alcohol-dependent. British adolescents also have one of the highest rates of binge drinking in Europe. Providing health services in schools does not appear to be enough because these services often fail to reach the most vulnerable members in the age group. Therefore some method of targeting screening and brief intervention at young people is needed, perhaps using novel approaches such as use of the internet (Kypros *et al* 2003).

Systematic reviews of the effectiveness of brief interventions have highlighted the need for more, good quality intervention trials as well as evidence regarding the long-term effects of screening and brief intervention. In addition, following the work of Beich *et al* (2003) there is an obvious need for randomised controlled trials of

screening and brief intervention versus no screening i.e. usual case finding and treatment.

The papers presented in this thesis also highlight health professionals' reservations about screening and brief intervention so that future research could investigate in more depth health professionals' acceptance of guidelines or interventions so that they become more acceptable to the health professional.

LIMITATIONS

The papers presented in this thesis reflect the fact that I have received an apprenticeship in the art of research. In my early publications I can be found as one of the many co-authors having learnt about the process of writing and analysing studies for publication from my more experienced colleagues. While developing in a team environment I have also developed the skills and confidence to work autonomously and I have found the independence not only to lead my study team in publications but also to publish solo.

Working as part of a prestigious WHO multinational team provided many opportunities for me to become involved in academic debate and presentation. This meant that an early part of my research training was bounded by the fact that the WHO study protocol had already been developed. However I soon became involved in developing and refining the UK arm of the project. Ultimately I found the freedom to develop my own area of research providing the opportunity for me to learn the art of developing research protocols.

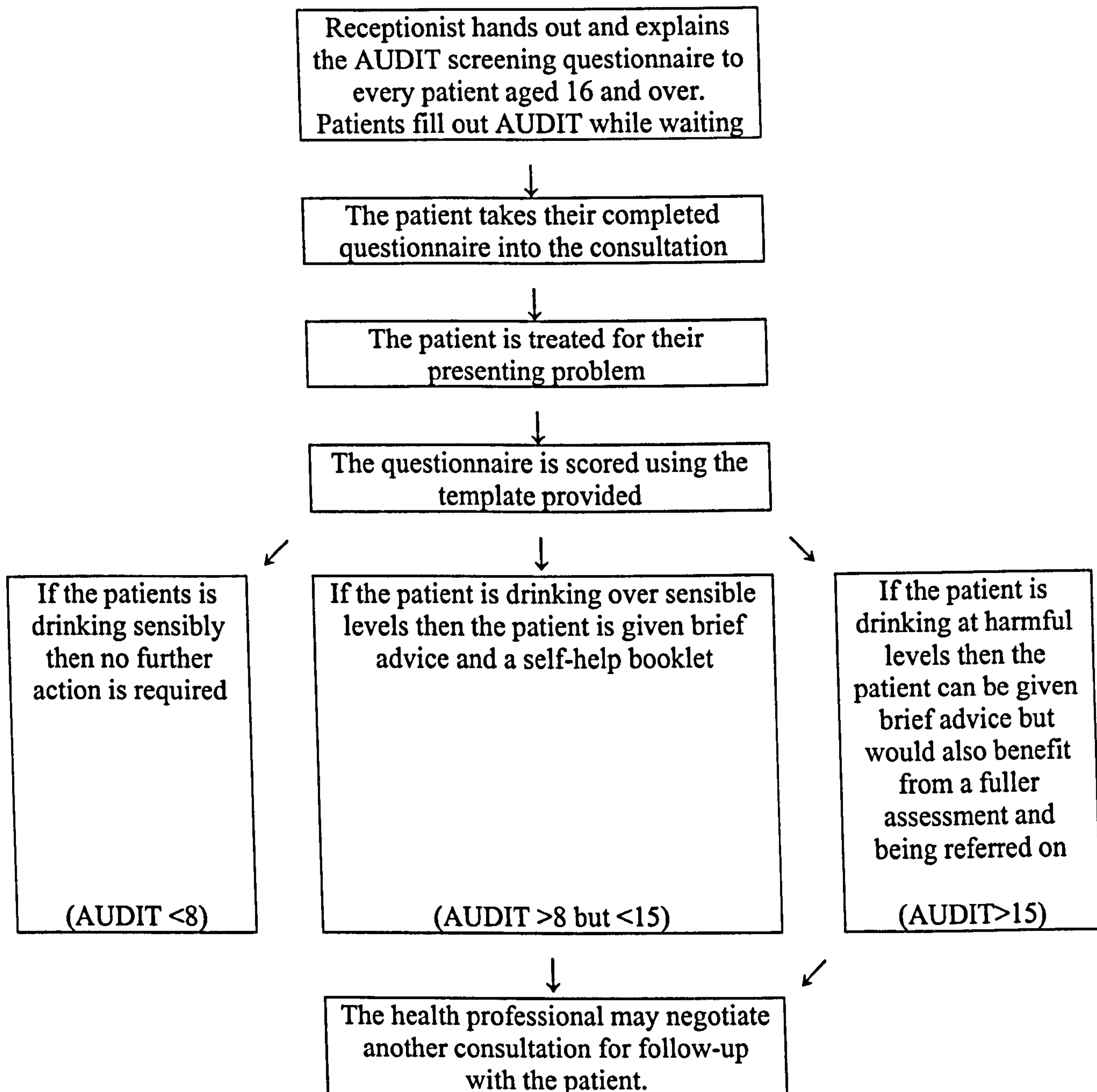
DRINK-LESS

Throughout this programme of research the Drink-Less screening and brief alcohol intervention programme was used. Drink-Less was developed as part of the World Health Organisation collaborative study. The materials contained within the programme are summarised in Table 1 and the way the programme is administered is outlined in Figure 3.

Table 1: The Drink-Less Programme Materials

Promotional leaflet	A leaflet advertising the benefits of intervention, the materials, information on how to use them and details on how to request the programme.
Programme guidelines	A step by step guide on how to run the programme. The guide explains the aim of the programme, steps on how to implement the programme and tips for difficult situations that might be encountered.
AUDIT screening questionnaires for patients	The Alcohol Use Disorders Identification Test (AUDIT) is a ten item questionnaire specifically designed for early detection of hazardous and harmful alcohol consumption. It enquires about the quantity and frequency of alcohol consumption, drinking behaviour (dependence) and consequences of drinking. It takes 1-2 minutes to administer and score. The range of scores is 0-40 and a score of 8 or more points to hazardous or harmful alcohol use. Persons with alcohol dependence typically score 15 or more. It is recommended that when a person has scored 8 or more the health professional confirms those responses and gives advice on alcohol use. It detects 92% of harmful or hazardous drinkers (sensitivity) and 94% of people who consume below these levels are correctly identified (specificity) (Babor <i>et al</i> 2001)
Scoring template	A template designed for quick and accurate scoring and interpretation of the AUDIT questionnaire. Additionally, the template provides guidelines on how to proceed if problems are identified.
Advice card	A laminated, double-sided card containing clear information on alcohol such as the safe levels, what constitutes a standard drink, the benefits of cutting down and/or abstaining, tips on helping patients change and advice on how to set goals, determine action and review progress.
Self-help booklets for patients	Pocket sized, anonymous, self-help booklets for patients that reinforces in more detail advice given and contains information on the health effects of alcohol and guidelines on changing habits and self-monitoring intake.
Promotional poster	Large, eye-catching poster designed to advertise the programme to patients

Figure 3: The Screening and Brief Alcohol Intervention Process



REVIEW OF THE LITERATURE

ALCOHOL

History

Of all the drugs which human beings use, alcohol is the oldest and is inextricably woven into culture. A drug can be defined as any substance that when taken into the living organism, may modify one or more of its functions (World Health Organisation). Over the years alcohol has acquired many different roles; it is used to celebrate, to commiserate, to drown sorrows, to give an appetite, to relax, to mark an occasion, to prove adulthood, to assert virility, to aid sleep, as a medicine, to boost confidence, to socialise, to stimulate, as a symbol of friendship of thanks and of religion, to seal an agreement, to toast, and as a gift. The list is almost endless. With the main exception of Muslim societies alcohol is generally accepted as a legal “social psychotropic” for adult use, that is as a self-purchased and self-administered substance taken by healthy individuals, primarily for its mind-affecting properties. Because alcohol use is generally legal, plays such an important part in culture and has become institutionalised, it is viewed very differently from other drugs (such as cannabis, cocaine, opium and heroin).

Alcohol, as reported here, refers to pure ethyl alcohol (ethanol) which is a combination of carbon, hydrogen and oxygen (C_2H_5OH) and presents in the form of a colourless, inflammable liquid with a characteristic but weak smell and a strong burning taste (Royal College of Psychiatrists 1986). There are many other natural and synthetic alcohols but almost all are either highly toxic or undrinkable or both (Royal College of Physicians 1987). Alcohol consumption is characteristically measured in “units of alcohol” or “standard drinks”. In the UK one unit contains 8-10 grams of alcohol and equates to a single measure of spirits, a standard glass of sherry or port, a standard glass of wine or half a pint of 3-3.5% beer, lager or cider (Royal College of Psychiatrists 1986) (Royal College of General Practitioners 1986) (Royal College of Physicians 1987).

In 1979 a report published by the Royal College of Psychiatrists suggested that an intake of four pints of beer a day, four doubles of spirits, or one standard-sized bottle of wine constituted reasonable guidelines for the upper limit of drinking. This equates to approximately 56 units per week for men and women. In 1981 a discussion document prepared by the Department of Health on drinking sensibly provided an argument against the use of precise recommended limits for alcohol consumption. They believed that there was a tendency for moderate drinkers to increase up to recommended limits and that as the effects of alcohol vary depending on age, sex, weight, reaction and food intake it was virtually impossible to set a recommended limit for all. During the 1980s, three Royal Colleges (Royal College of Physicians 1987; Royal College of Psychiatrists 1986; Royal College of General Practitioners 1986) published recommended guidelines for sensible drinking. These were 21 units of alcohol per week for men and 14 units per week for women. For pregnant women either abstinence or minimal consumption of one or two drinks once or twice a week was recommended. These limits were revised by the Government in 1995 (Department of Health). Recommendations to the general public on sensible drinking were that men should drink no more than 3 to 4 units per day and women no more than 2 to 3 units per day. In response to the Department of Health report on sensible drinking, the Medical Council on Alcoholism, the British Medical Association and the three Royal Colleges were again unanimous in reaffirming the previous sensible limits (Abraham 1995)(British Medical Association 1995) (Royal College of Physicians *et al* 1995).

Alcohol-related harm has been of public concern in the UK at least since the “gin epidemic” of the 18th Century. During the 19th Century temperance became a popular movement. This served to place alcohol on the political agenda but the UK never introduced a national alcohol prohibition. Bans on the manufacture and sale of alcohol were confined to local options. During the First World War, a perceived threat to the nation’s war effort from excessive drinking led to the introduction of restrictions on the opening hours of public houses in the Defence of the Realm Act

(1916). Due to a decrease in alcohol consumption during the 1920s and 1930s concern about alcohol reduced considerably. However medical and academic interest was prompted by Alcoholics Anonymous (AA), which reached London in 1948. The UK experienced a steady increase in alcohol consumption following the end of the Second World War, with an approximate doubling of intake up to the end of the 1970s. At this point public concern with the ill effects of alcohol began to reassert itself (Royal College of Psychiatrists 1986). In 1975 an Advisory Committee on Alcoholism was set up by the then DHSS (Department of Health and Social Security 1981) and during the 1980s, the three Royal Colleges (Royal College of Physicians 1987; Royal College of Psychiatrists 1986; Royal College of General Practitioners 1986) all published separate reports highlighting the problems associated with excessive alcohol consumption.

The government declared its intention to tackle alcohol use in the 1991 Green Paper *The Health of the Nation* (Department of Health) and the 1992 White Paper *The Health of the Nation: A Strategy for Health in England* (Department of Health). The aim of this strategy was to improve health in five key areas; coronary heart disease and stroke, cancers, mental illness, HIV/AIDS and sexual health, and accidents. The Health of the Nation identified alcohol as a risk factor in four out of these five areas and specified, as a national target, a reduction in the proportion of men drinking more than 21 units of alcohol per week from 28% in 1990 to 18% by 2005, and of women drinking more than 14 units per week from 11% in 1990 to 7% by 2005. A review of the Health of the Nation (*The Health of the Nation – a policy assessed*) was commissioned by the Department of Health in 1998 in order to identify its achievements, failures, limitations and those elements that appeared to be working well and those where there was demonstrable room for improvement. Although the Health of the Nation was widely welcomed and was perceived as increasing prevention activity overall it failed to realise its full potential.

As a consequence the 1998 Green Paper *Our Healthier Nation: A Contract for Health* (Department of Health) and the 1999 White Paper *Saving Lives: Our Healthier*

Nation (Department of Health) restated the government's aims as improving the health of the population by combating the key killers in the UK; cancer, heart disease and stroke, accidents and mental illness. Excessive alcohol consumption was named as a risk factor in these four national priority areas but new targets were not set.

In 2002 the Prime Minister's Strategy Unit published a consultation document in order to develop a *National Alcohol Harm Reduction Strategy*. The aims of the strategy are to identify and, where possible, prevent the consequences of alcohol misuse; to help those who suffer the consequences of alcohol misuse; and to manage the consequences. For example better education and communication, improving health and treatment services, combating alcohol-related crime and disorder. The Strategy Unit produced an evidence base for the National Alcohol Harm Reduction Strategy for England (Strategy Unit 2003), which was implemented in 2004 (Strategy Unit 2004). At the same time the Academy of Medical Sciences (2004) called on the government to take immediate measures not only to stop the rise in alcohol consumption but also to cut drinking to 1970 levels, a reduction of 33%.

Britain is also one of the 26 Member States that, in 1980, adopted a common health policy as a regional strategy to achieve Health for All by the year 2000. Target 17 addressed alcohol reduction and stated that "By the year 2000, the health-damaging consumption of dependence-producing substances such as alcohol, tobacco and psychoactive drugs should have been significantly reduced in all Member States". With regard to alcohol it suggested that consumption be reduced by 25%, with particular attention to reducing harmful use (World Health Organisation 1993). The European Alcohol Action plan (1993) was an initiative undertaken in pursuit of target 17 (World Health Organisation 1993b).

Health21 is the current Health for All policy framework for the European Region of the World Health Organisation. The policy, adopted in 1998, aims to realise the vision of health for all. Target 12 addresses the question of alcohol and states "By the year 2015, the adverse health effects from the consumption of addictive substances

such as tobacco, alcohol and psychoactive drugs should have been significantly reduced in all Member States” (Rehn *et al* 2001). The European Alcohol Action Plan (EAAP) 2000-2005 was adopted in 1999 and is a continuation of the original plan from 1993 (World Health Organisation 2000).

Current Use

In Britain 92% of men and 85% of women drink alcohol (Strategy Unit 2002). The latest General Household Survey in 2001 (Office for National Statistics 2002) estimated that 39% of men and 22% of women aged 16 years and over drank more than the government recommended limits of 4 units of alcohol per day for men and 3 units of alcohol per day for women. Both men (49%) and women (39%) aged 16-24 were significantly more likely than respondents in other age groups to have exceeded these limits. Men (21%) were twice as likely as women (10%) to have drunk heavily (more than 8 units of alcohol per day for men and more than 6 units for women) and again both men (36%) and women (27%) aged 16-24 were more likely to be heavy drinkers.

Since 1988 there has been a slight increase in overall weekly alcohol consumption among men and a much more marked one among women, but in 2001 there was indication of a slight decline. The proportion of men drinking more than 21 units a week on average was 26% in 1988, 29% in 2000 but fell to 27% in 2001. The proportion of women drinking more than 14 units a week on average was 10% in 1988, 17% in 2000 but fell to 15% in 2001. Men drank an average of 15.9 units/week in 1992, 17.4 units/week in 2000 but only 16.8 units/week in 2001. However women drank an average of 5.4 units/week in 1992, 7.1 units/week in 2000 and 7.4 units/week in 2001. Average consumption among young women aged 16-24 continues to rise, increasing from 12.6 units in 2000 to 14.0 units in 2001 and has almost doubled in the ten years since 1992.

According to a recent survey of children aged 11-15, 24% had drunk alcohol in the last week (25% boys, 23% girls). The mean consumption for those who had drunk

alcohol in the last week has risen steadily from 5.3 units in 1990 to 10.5 units in 2002 (11.5 units for boys/9.6 units for girls) (Office for National Statistics 2002b)

The prevalence of alcohol-dependence in the general population currently stands at 7.4%, 11.9% among men and 2.9% among women. Nearly 14% of 16-19 year olds are dependent on alcohol (Office for National Statistics 2000). Alcohol dependence is defined as a cluster of cognitive, behavioural and physiological symptoms including; a strong desire or compulsion to drink; difficulties in controlling onset, termination, or levels of drinking; a physiological withdrawal state when alcohol use has ceased or been reduced, or use of alcohol to relieve or avoid withdrawal symptoms; evidence of tolerance; progressive neglect; continued use despite clear evidence of harmful consequences (Babor and Higgins-Biddle 2001).

Problems Associated with Excessive Alcohol Consumption

Excessive alcohol consumption can lead to significant harm to the physical, psychological and social health of individuals, families and communities. Excessive alcohol consumption is a term that includes both hazardous and harmful consumption (Heather & Kaner 2003). Harmful use is defined as a pattern of drinking that is already causing physical or mental damage to health. Hazardous use is a pattern of alcohol consumption carrying with it a risk of physical, mental or social harmful consequences to the drinker or others (Babor and Higgins-Biddle 2001). Problems related to alcohol consumption can be viewed as a continuum, ranging from minimal alcohol consumption, with a slight risk of a few problems to heavy consumption with a high probability of many and various problems. However the majority of alcohol related problems are contributed by the relatively large numbers of light and moderate drinkers (Royal College of General Practitioners 1986).

The types of problem that may ensue from drinking depend upon the chemistry of alcohol, the characteristics of the drinker and the context of use. However the main problems associated with excessive alcohol use are listed in table 2.

Table 2: Problems Associated with Excessive Alcohol Consumption

Social	Psychological	Physical
Marital breakdown Divorce Family arguments Domestic violence Child neglect/abuse Homelessness/vagrancy Financial difficulties Work inefficiency Absenteeism Unemployment Crime Aggression/violence/hooliganism Drink driving Accidents (domestic/work/road) Sexual deviance Unwanted pregnancy Sexual risk taking	Jealousy Fear Anxiety Depression Suicide/attempted suicide Dependence Delirium tremens (DTs) Withdrawal fits Hallucinations Altered personality Irritability/mood swings Short term amnesia/memory blackouts Dementia Gambling Misuse of other drugs Insomnia	Subarachnoid haemorrhage Brain damage (<i>Wernicke's encephalopathy/Korsakoff's psychosis/Cerebellar degeneration</i>) Strokes (Peripheral) neuropathy (<i>sensory loss, muscle weakness and atrophy</i>) Nutritional deficiencies Obesity Diabetes Susceptibility to infections Cancer (<i>Oropharyngeal/Throat/Mouth/Pharynx/Larynx/Oesophagus/Breast/Liver/Colon/Rectum</i>) Hypertension Cardiac arrhythmia Cardiomyopathy Heart Disease Respiratory depression Pneumonia Oesophageal varices Stomach ulcers Gastritis Pancreatitis Liver damage (<i>fatty liver/hepatitis/cirrhosis</i>) Myopathy Gout Impaired sexual performance and function/reduced fertility Increased risk of spontaneous abortion/foetal alcohol syndrome Accidents and trauma Acute alcohol poisoning/haemopoietic toxicity

(Royal College of General Practitioners 1986)(Royal College of Psychiatrists 1986)(Royal College of Physicians 1987)(Anderson *et al* 1993)(Austoker 1994)(Royal College of Physicians, The British Paediatric Association 1995)(Department of Health 1995)(Office for National Statistics 2000b, 2001)(Alcohol Concern 2000, 2002) (Strategy Unit 2003).

Alcohol has a high calorific content. As it travels around the body it increases heart rate, inflames the stomach lining, acts as a diuretic, damages body cells, depresses the nervous system, dehydrates, diminishes sexual arousal, diminishes or inhibits the male erection, impairs the senses, slows reaction time, impairs intellectual function and therefore increases risk-taking behaviour, interacts with other drugs, can induce addiction and can ultimately lead to death (Royal College of Psychiatrists 1986). It is difficult to establish the total number of alcohol-related deaths but estimates range from 5,000 to 40,000 deaths per annum in England and Wales (Office for National Statistics 2001).

Alcohol use is also one of the ten leading causes of disability worldwide. It is the leading cause of male disability and the tenth largest cause of female disability in the developed regions. Alcohol accounts for 10.3% of Disability Adjusted Life Years (DALYs). DALYs are an estimate of the extent to which an average lifespan has been shortened by a disorder, plus the years lived with a disability or illness, which has reduced the quality of life (Murray & Lopez 1996).

Costs Associated with Excessive Alcohol Consumption

Estimates relating to the financial cost of excessive alcohol consumption vary greatly. However, as a rough guide, estimates of the cost of excessive alcohol consumption for the NHS (in the form of psychiatric care, non psychiatric care and GP care) have been between £200 million and £3 billion a year (Royal College of Physicians 2001)(Office for National Statistics 2001)(Alcohol Concern 2001,2002)(Strategy Unit 2003). Estimates of the cost of excessive alcohol consumption for industry (in the form of sickness absence, absenteeism, lateness, reduced efficiency, accidents, impaired industrial relations, early retirement, unemployment, premature death, high labour turnover and retraining) have been between £140 million and £6 billion a year (Alcohol Concern 2001)(Office for National Statistics 2001)(Strategy Unit 2003). Cost of criminal activities such as police costs associated with traffic offences, other criminal offences, drink-related court cases and probation, judiciary and prison service are estimated to be more than £7 billion per annum (Strategy Unit 2003).

Other costs associated with excessive alcohol consumption take the form of social response cost such as expenditure by national alcohol bodies and research, cost of material damage such as road traffic accidents, home accidents, industrial accidents and fire damage.

Benefits Associated with Alcohol Consumption

It must be noted that there are benefits associated with the consumption of alcohol. However the benefits to physical and psychological health are all associated with low to moderate consumption. See table 3.

Table 3: Benefits Associated with (Low to Moderate) Alcohol Consumption

Social	Psychological	Physical
Tax revenue	Sense of well being	Protection against heart disease (<i>low/moderate consumption in middle aged men/post menopausal women</i>)
Employment	Increased relaxation	Possible protection against ischaemic stroke
Tourism	Increased confidence	Possible protection against cholesterol gallstones (<i>moderate consumption</i>)
	Mild disinhibition	Possible reduced risk of dementia (<i>low/moderate consumption in persons aged 55 years or older</i>)
	Sociability	Possible protection against chronic obstructive pulmonary disease (<i>red wine only</i>)

(Royal College of Physicians 1987)(Anderson *et al* 1993)(Royal College of Physicians *et al* 1995)(Department of Health 1995) (Strategy Unit 2003)(Office for National Statistics 2001) (Ruitenberg *et al* 2002) (Culpitt *et al.* 2003)

SCREENING AND BRIEF INTERVENTION

Definition

Screening and brief intervention are those practices that aim to identify a real or potential alcohol problem and motivate an individual to do something about it (Babor and Higgins-Biddle 2001). Brief intervention is the term given to a variety of techniques described in the literature which are short in duration (usually 5 to 10 minutes) and which have common core features including: assessment of alcohol intake; information on hazardous and harmful drinking; clear advice for individuals on reducing consumption and more often than not an information booklet or leaflet on sensible drinking and local resources. There tend to be two types of brief intervention activity. One where interventions are delivered at the primary care level among people who do not seek help for a problem with alcohol and who are identified by screening in settings where they have not attended or complained of such a problem (opportunistic brief interventions/non-treatment seeking population) and another where interventions are delivered in specialist treatment settings where people have attended or have been referred to seek help for an alcohol problem (specialist brief interventions/treatment seeking population) (Heather 1996).

Evidence for Effectiveness

Although there is substantial literature in the field of screening and brief alcohol intervention its effectiveness and appropriateness is hotly debated.

The Effectiveness Debate: The efficacy of brief alcohol intervention is not really under dispute (Heather 2002). Most trials of brief alcohol intervention have involved research-trained staff recruiting patients and providing brief intervention under the optimal conditions of a research setting, resulting in a significant reduction in alcohol consumption. However there is much greater scepticism about the effectiveness of brief alcohol intervention when it is carried out under more pragmatic conditions. Brief alcohol intervention trials, where screening and brief intervention was incorporated into routine practice, have failed to find an effect of intervention on level

of alcohol consumption (Aalto *et al* 2001) (Aalto *et al* 2000) (Heather *et al* 1987) or reported a lesser effect than typically found in efficacy trials (Richmond *et al* 1995). The evidence for brief alcohol intervention has been summarised in several review articles including a number of systematic reviews, some with meta-analysis. The majority of these reviews conclude that brief intervention is effective in reducing alcohol consumption for patients who drink excessively (see Table 4). However some believe that the case for brief intervention may have been overstated, particularly to the detriment of more intensive interventions (Drummond 1997) (Rollnick *et al.* 1997) (Heather 1995). In addition the methodological quality of many brief alcohol intervention trials is low (Meyer *et al* 2002b). There is also little evidence regarding the long term effects of brief alcohol intervention. One study found the effect of brief intervention had disappeared at 10 years (Wutzke *et al* 2002) while another found a continuing but small effect at four years (Fleming *et al* 2002). Findings are also mixed with respect to sex differences in response to brief alcohol intervention. There is some evidence to suggest that women do not benefit from brief intervention compared with the effects of assessment only. This may be because women reduce consumption merely in response to an assessment of alcohol and related problems.

The Appropriateness Debate: Screening and brief alcohol intervention is one of the government's current recommendations for a reduction in alcohol consumption in the UK. However, due to the complex and sensitive nature of this intervention, GPs have reported that it is difficult to implement (Beich *et al* 2002). While some alcohol researchers dispute this claim on the grounds of inappropriate research methodologies others believe it to be a key issue. Work with GPs to produce an acceptable screening and brief alcohol intervention is appropriate current research. However in a challenging statement the authors of this study concluded that screening and brief alcohol intervention creates more problems than it solves and should therefore be abandoned. One of the same authors later suggested that, due to the large number of patients needed to be screened in order to identify risky drinkers who are also likely to reduce their alcohol consumption, screening is not a cost-effective technique for identifying excessive drinking patients (Beich *et al* 2003). Debate rages over the

appropriateness of the methodologies used and the interpretation of results to reach these conclusions (Whitlock 2003, <http://bmj.bmjournals.com/cgi/eletters/327/7414/536>).

In part the debate regarding the effectiveness and the appropriateness of screening and brief alcohol intervention has been fuelled by conflicting evidence in the field but part is also due to the fact that there are many strong advocates of screening and brief alcohol intervention some of which are currently involved in studies aimed at country wide implementation and emotions run high when long held views are challenged or when the foundations of current research programmes are questioned.

Table 4: Reviews of the Effectiveness of Screening and Brief Alcohol Intervention (by publication date)

Author(s)	Date	N of studies	Type of studies	Location of studies	Type of review	Meta analysis (Effect size)	Main conclusions
Emmen Schippers Bleijenberg Wollersheim	2004	8	RCTs CTs	Hospital Settings	Systematic	No	Evidence for the effectiveness of opportunistic brief interventions in a general hospital setting for problem drinkers is still inconclusive
Foxcroft Ireland Lister-Sharp Lowe Breen	2004	56 (7 BI)	RCTs CTs ITS	Young People (<25)	Systematic	No	20 studies showed evidence of ineffectiveness; none of these were BI studies. The Strengthening Families Programme showed promise as an effective prevention programme but this was not a BI approach.
Beich Thorsen Rollnick	2003	8	RCTs + Screening as precursor	General Practice	Systematic	Yes (10.5% absolute risk reduction)	Brief intervention can reduce excessive drinking, however screening in general practice may not be an effective precursor.
Moyer Finney Swearingen Vergun	2002	34 20	BI v control BI v extended treatment	Non treatment seeking Treatment seeking	Systematic	Yes (Effect size range 0.14 to 0.67) Yes (Effect size range -0.03 to 0.42)	Positive evidence for the effectiveness of brief interventions especially in non-treatment-seeking samples.
Miller Wilbourne	2002	361	CTs	Various	Systematic	No	Methodological analysis showing that higher quality trials were more likely to report treatment effects. Strongest evidence of efficacy was found for brief intervention trials.

Table 4: Reviews of the Effectiveness of Screening and Brief Alcohol Intervention (by publication date) (continued)

Author(s)	Date	N of studies	Type of studies	Location of studies	Type of review	Meta analysis (Effect size)	Main conclusions
D'Onofrio Degutis	2002	30	RCTs	Various	Systematic	No	Demonstrated the efficacy of screening and brief intervention in 32 of these clinical trials.
		9	Cohort studies				
Poikolainen	1999	7	RCTs	Primary Health Care	Systematic	Yes (Effect estimate of change -51g alcohol/week women. -55g alcohol/week for men)	Extended brief interventions were effective among women. Other brief interventions seem to be effective sometimes but not always.
Dinh-Zarr Diguseppi Heitman Roberts	1999	19	RCTs + Injuries outcome measure	Various	Systematic	No	Data suggest that interventions for problem drinking may be effective in reducing injuries and injury deaths
Mullen Simons-Morton Ramirez Frankowski Green Mains	1997	4	RCTs CTs	Clinical Settings	Systematic	Yes (Effect size of 0.61 for smoking & alcohol combined)	Using behavioural techniques, particularly self-monitoring and using several communication channels produces larger effects.
Foxcroft Lister-Sharp Lowe	1997	33 (? BI)	RCTs CTs	Young People (8-25)	Systematic	No	Lack of reliable evidence means that no one type of prevention programme can be recommended

Table 4: Reviews of the Effectiveness of Screening and Brief Alcohol Intervention (by publication date) (continued)

Author(s)	Date	N of studies	Type of studies	Location of studies	Type of review	Meta analysis (Effect size)	Main conclusions
Rollnick Butler Hodgson	1997	7	Various	Various	Literature	No	The statement that brief alcohol intervention is effective is oversimplified and potentially misleading.
Ashenden Silagy Weller	1997	6	RCTs	General Practice	Systematic	No (For smoking only)	Review suggesting that GP advice can be effective in reducing alcohol consumption.
Wilk Jensen Havighurst	1997	12	RCTs	Various	Systematic	Yes (Odds ratio 1.91 in favour of bi)	Heavy drinkers receiving a brief intervention were twice as likely to reduce their drinking over 6-12 months as those who received no intervention.
Finney Monahan	1996	7	Brief motivational counselling	Various	Systematic	No	Brief motivational counselling was not classified as having good evidence of effect. Update of Holder <i>et al.</i>
Higgins-Biddle Babor	1996	14	RCTs	Various	Literature	No	Screening and brief intervention holds the potential to reduce risky drinking significantly.
Agosti	1995	12	RCTs	Various	Systematic	Yes (Effect size 1.17)	Review showing the effectiveness of screening and brief intervention (as one of a number of treatments).
Kahan Wilson Becker	1995	11	RCTs	Various Health Care Facilities	Systematic	No	Trials support the use of brief interventions by physicians for patients with drinking problems.
Richmond Anderson	1994	?	Various	General Practice	Literature	No	Very brief GP advice results in reduction in alcohol consumption of around 25-35% and a reduction in proportion of excessive drinkers of around 45%.

Table 4: Reviews of the Effectiveness of Screening and Brief Alcohol Intervention (by publication date) (continued)

Author(s)	Date	N of studies	Type of studies	Location of studies	Type of review	Meta analysis (Effect size)	Main conclusions
Babor	1994	26	RTs	Various	Literature	No	Studies indicate that dissuasion does make a difference with heavy drinkers who have not developed severe alcohol dependence but it is not clear what type of dissuasion works best.
Mattick Jarvis	1994	3	CTs Intensive v BI for alcoholics	Outpatients	Literature	Yes (Effect size range -0.18 to 0.13)	Evidence that intensive interventions benefit alcoholic patients.
Anderson	1993 b	6	RCTs	Various	Literature	No	Screening and brief intervention leads to a 25-30% reduction in alcohol consumption. Greater evidence for an effect among men than women.
Anderson	1993 c	3	RCTs	General Practice	Literature	No	Review showing the effectiveness of screening and brief intervention.
Anderson	1993 d	6 2	Completed studies Ongoing studies	Primary Health Care	Literature	No	Review indicates that brief interventions by GPs are effective and cost effective
Bien Miller Tonigan	1993	19 13	CTs BI v control CTs BI v extended	Various	Systematic	Yes (Effect size 0.38) Yes (Effect size 0.06)	Brief interventions were more effective than no counselling and often as effective as more extensive treatments.

Table 4: Reviews of the Effectiveness of Screening and Brief Alcohol Intervention (by publication date) (continued)

Author(s)	Date	N of studies	Type of studies	Location of studies	Type of review	Meta analysis (Effect size)	Main conclusions
Freemantle Gill Godfrey Long Richards Sheldon Song Webb	1993	7	RCTs BI v control	Various	Systematic	Yes (24% reduction)	Concluded that brief alcohol intervention was effective in reducing alcohol consumption by over 20% in the large group of people with raised consumption and was as effective as more expensive specialist treatments.
		15	BI v intensive treatment			No	
Heather Richmond	1992	2	Completed	Various	Literature	No	There is considerable interest in brief interventions and they have been clearly identified as a main research priority. Brief interventions can significantly reduce the prevalence of alcohol use
		8	Ongoing				
Holder Longabaugh Miller Rubonis	1991	9	Brief motivational counselling	Various	Systematic	No	Brief motivational counselling was classified as having good evidence of effect
Babor Ritson Hodgson	1986	2	RCTs	Various	Literature	No	Modest but reliable effects on drinking behaviour and related problems can follow from brief interventions.

(RCT = randomised controlled trial, CT = controlled trial, RT = randomised trial, ITS = interrupted time series, BI = brief intervention)

Findings are also mixed with respect to sex differences in response to brief interventions. There is some evidence to suggest that women do not benefit from brief intervention compared with the effects of assessment only. This may be because women reduce alcohol consumption in response merely to an assessment of alcohol consumption and related problems.

Location for Delivery

Screening and brief alcohol interventions have been successfully delivered in primary health care (Poikolainen 1999) (Ashenden *et al.* 1997) (Kahan *et al.* 1995) (Richmond & Anderson 1994) (Anderson 1993b) (Freemantle *et al.* 1993) (Babor *et al.* 1986), general hospitals (Chick *et al.* 1985), accident and emergency departments (Wright *et al.* 1998) (Huntley *et al.* 2001) (D'Onofrio & Degutis 2002) and outpatient clinics (Smith *et al.* 1998) (Wilk *et al.* 1997) or in non-medical settings such as schools (Werch *et al.* 1996) (Werch *et al.* 1999) (Werch *et al.* 2003), the workplace (Richmond *et al.* 2000) (Lapham *et al.* 2003, 2003b) and drinking establishments (Reilly *et al.* 1998) (Van Beurden *et al.* 2000). To date however the majority of trials have focussed on implementing screening and brief intervention in primary health care settings.

Primary health care is an ideal setting for screening and brief alcohol intervention because of the large proportion of the population who access them (98% of the population is registered with a named general medical practitioner (Fry 1980)). Two-thirds of the population visit their GP one or more times each year and 90% at least once in five years (Fraser 1992). In addition, excessive drinkers present to primary health care twice as often as other patients and constitute approximately 20% of a practice list (Anderson 1985). This allows primary health care professionals to opportunistically target those more in need. Primary health care affords the opportunity of using the “*teachable moment*”, relating the reason why the individual patient is consulting to their alcohol consumption. Primary health care also offers continuity of care as two thirds of consultations are repeat visits which are an ideal setting for implementing the stages of change model.

GPs are well placed for screening and brief intervention work since they develop long-term relationships with patients, command a high level of respect and have a high level of access to the population. However nurses are arguably in the best position to do most health promotion because they form the largest group of health care professionals and have repeated patient contact (Rowland and Maynard 1989) (Rassool 1993). GPs have also delegated an increasing amount of work, particularly health promotion work, to primary care nurses (Calnan and Williams 1993) (Broadbent 1998).

Failure of Health Professionals to Implement

According to calculations by Freemantle et al. (1993) if all GPs in the UK were to use screening and brief alcohol intervention this would be an effective and cost effective way of reaching the Health of the Nation targets for reducing percentages in the population who drink excessively. In addition the Alcohol Harm Reduction Strategy for England aims to emphasise screening and brief alcohol intervention in primary and secondary health care settings (Strategy Unit 2004). However, it is well recognised that the potential of primary health care professionals to reduce the prevalence of alcohol related problems contrasts sharply with practice (Boulton and Williams 1983) (Reid *et al.* 1986) (Rowland & Maynard 1989) (Rydon *et al.* 1992) (Weller *et al.* 1992) (Rush *et al.* 1994) (Gerace *et al.* 1995) (Heather 1996) (Arthur 1997) (Deehan *et al.* 1998) (Spandorfer *et al.* 1999). According to May (2001) Health Professionals' reluctance to treat patients with addictions stems from the problem that the addictions have not become fully medicalised. Although a recent World Health Organisation (2004) report reiterates that addictions are neurological or psychiatric disorders, which can be treated effectively, health professionals continue to find addiction difficult to understand as a disease process as it lacks any obvious pathology. In addition only the patient is able to affect a recovery, a fact which can be demoralising for the health professional. The following publications explore and develop this area further.

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SUPPORTING CONFERENCE ABSTRACTS

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N.B. Haighton is my maiden name

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12. **Lock, C.A.** 2004. Brief alcohol interventions; what, why, who, where and when? A review of the literature. *Journal of Substance Use*, 9(2), 91-101

INTERVENTION FOR EXCESSIVE ALCOHOL CONSUMPTION IN PRIMARY HEALTH CARE: ATTITUDES AND PRACTICES OF ENGLISH GENERAL PRACTITIONERS

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Abstract — General practitioners' (GPs') recognition of, attitudes towards, and intervention for, excessive drinking and alcohol problems among their patients were assessed in a postal questionnaire survey. Levels of recognition of, and intervention for, excessive drinking by GPs were low. GPs did not routinely enquire about alcohol and had managed only small numbers of patients specifically for excessive drinking or alcohol problems in the previous year. Enquiry about alcohol issues was elicited mainly by physical symptoms or by new patient registrations. Although 83% of GPs felt prepared to counsel excessive drinkers, only 21% felt effective in helping patients reduce consumption. Over the past 10 years, there appears to have been an increase in numbers of GPs who feel that they should be working with alcohol issues, but fewer GPs perceive themselves as being effective in this work. The main barriers to brief alcohol intervention were given as insufficient time and training, and lack of help from government policy; the main incentives related to availability of appropriate support services and proven efficacy of brief interventions.

INTRODUCTION

A number of controlled trials of brief interventions in primary health care settings (Wallace *et al.*, 1988; Anderson and Scott, 1992; Babor and Grant, 1992; Richmond *et al.*, 1995; Israel *et al.*, 1996; Fleming *et al.*, 1997) have shown that, in comparison with controls, excessive drinkers (i.e. hazardous and harmful drinkers) will reduce alcohol consumption by >20% (Freemantle *et al.*, 1993). These brief interventions include a variety of activities directed at patients identified by screening as drinking above medically recommended levels but with mild or no dependence on alcohol. Interventions typically consist of between 5 and 60 min of motivational counselling and alcohol education and between one and four scheduled sessions. If widely and consistently implemented by GPs, screening and brief intervention would help large numbers of excessive drinkers to cut down consumption to safer levels (Wallace *et al.*, 1988). Thus brief interventions potentially offer a cost-effective way of decreasing

the burden from excessive alcohol consumption on health and social services and of reducing the level of alcohol-related harm in the population.

Beginning with the first development of the community response to alcohol problems during the 1970s (Shaw *et al.*, 1978), there has been a concerted attempt in Britain to persuade GPs, among other 'frontline' professionals, to become involved in identifying and intervening briefly with excessive drinkers. Research during the 1980s suggested that this effort had been largely unsuccessful at that time; studies by Anderson (1985) and by Clement (1986) reported low levels of activity among GPs in screening and intervention with heavy drinkers encountered in their practices. More recently, a household survey in England by the Office of Population Censuses and Surveys (Malbon *et al.*, 1996) found that, of current and former drinkers who had spoken to a medical practitioner or other health professional in the last year, only 12% of men and 5% of women reported having discussed alcohol consumption with their GP at the surgery.

The study reported here was a survey of GPs in the English midlands which aimed to investigate their recognition of and intervention for excessive

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drinking and alcohol problems among their patients. It also aimed to assess GPs' attitudes to this work and to determine whether any changes in these attitudes had occurred in the last decade. Factors related to screening and intervention and to attitudes to working with excessive drinkers, such as GPs' levels of training and perceived levels of support for this work, were also studied. Finally, GPs' views were obtained on barriers and incentives relating to brief alcohol intervention in primary health care settings. The study represented the British arm of Phase III (Strand 1) of the WHO Collaborative Project on Implementing and Supporting Early Alcohol Intervention Strategies in Primary Health Care.

METHOD

The study took the form of a postal survey, carried out in three stages from May 1995 to May 1996, of a sample of 430 GPs. One GP principal was randomly sampled from all practices in Leicestershire ($n = 152$), Derbyshire ($n = 158$) and Nottinghamshire ($n = 120$) using a random number table. Each GP was sent a questionnaire with a personalized covering letter, signed by one of the study chief investigators (B.Mc.), and a pre-paid addressed envelope. The covering letter explained the background to the survey and confirmed that ethical approval from the Local Research Ethics Committee had been granted. Two weeks after the original questionnaire had been sent, a telephone call was made to all non-responding GPs to encourage them to return the questionnaire. Two further questionnaires, accompanied by revised covering letters and pre-paid envelopes, were sent out to all non-responding GPs at monthly intervals beginning 1 month after the telephone call.

Questionnaire

The 132-item questionnaire was developed as part of the WHO Collaborative Project and was pre-tested and piloted on 160 GPs from 11 countries. A copy of the study questionnaire is available from the first author (E.K.) on request. GPs' attitudes to alcohol issues were assessed via responses to a number of scales:

(1) GPs rated reduction of excessive drinking according to: its importance in promoting patients'

health, their preparedness to counsel patients, their current effectiveness in helping patients change this behaviour, and their potential effectiveness in helping patients change once adequate training and support had been provided. Ratings were on a 4-point scale ranging from: 'unimportant' to 'very important', 'very unprepared' to 'very prepared'; and 'very ineffective' to 'very effective'.

(2) GPs' diagnostic and management skills were assessed by means of responses to vignettes of two case histories. Case A (see Appendix 1) was a patient who was drinking excessively with some evidence of health problems, but no physical dependence. Case B (see Appendix 2) was a patient whose level of alcohol consumption and associated physical symptoms were suggestive of alcohol dependence. Mean differences in scores between the two cases were calculated for measures of problem severity, importance of abstaining from alcohol and confidence in helping to alleviate the problem. GPs also reported what further action they might take in each case.

(3) GPs were also asked about the extent to which they felt they should be involved, given appropriate support, in helping their patients change various health-related behaviours, including providing alcohol information, promoting non-hazardous alcohol consumption and treating dependent drinkers. Rating was on a 4-point scale ranging from 'definitely not involved' to 'definitely involved'.

(4) GPs' attitudes to working with excessive drinkers were assessed by the Shortened Alcohol and Alcohol Problems Perception Questionnaire (SAAPPQ; Anderson and Clement, 1987). Role legitimacy, adequacy, motivation, self-esteem and work satisfaction scores were calculated by summing the two statements in the SAAPPQ related to each of these variables (ratings on a 7-point scale ranging from 'strongly disagree' to 'strongly agree').

(5) Finally, incentives and disincentives for brief alcohol intervention work were examined by measuring GPs' level of agreement with a range of suggested barriers and facilitating factors relating to this work. Agreement was rated on a 4-point scale ranging from 'not at all' to 'very much'.

Statistics

All data were analysed using the SPSS for Windows computing program.

RESULTS

Response rates

Telephone calling revealed that 19 GPs had either retired, left the practice or were no longer practising medicine. Thus the eligible sample size for the survey was 411 GPs. Two hundred and seventy-nine GPs returned questionnaires to the research centre, a response rate of 68%. There were no significant differences between response rates among the three health districts surveyed (66%, 68% and 70% in Leicestershire, Derbyshire and Nottinghamshire respectively).

Sample characteristics

Average age of GPs was 43.7 (SD = 8.5) years and 76% were male. Respondents had been in general practice for an average of 13 years (SD = 8.3) and spent an average of 5.4 (SD = 1.0) days per week in practice. The largest proportion (48%) said they saw more than 150 patients per week and 39% saw between 101 and 150 per week. Half (50%) worked in urban practices, 16% in rural practices and 34% described theirs as a mix between urban and rural practices. The majority of GPs (77%) worked in group practices, with an average of 3 (SD = 1.9) partners per practice.

Extent of medical education and training on alcohol

The largest proportion of respondents (34%) indicated that they had received between 4 and 10 h of post-graduate training, continuing medical education or clinical supervision on alcohol and alcohol-related problems, whereas 31% indicated less than 4 h. A further 10% said they had received no post-graduate training on alcohol at all. Amount of training did not differ significantly by gender, age, solo versus group status of GPs or practice rurality.

Current management of excessive drinkers

Two-thirds of GPs (65%) reported that they had managed between one and six patients specifically for hazardous drinking or alcohol-related problems in the previous year and 4% indicated that they managed none. Male GPs reported having managed significantly more patients for alcohol problems than female GPs ($\chi^2 = 5.3$, $df = 1$, $P < 0.05$). The largest proportion of GPs (34%) indicated that they had taken or requested a blood test because of a

concern about alcohol consumption 3–5 times in the previous year, with 23% having taken or requested a blood test 6–12 times. There were no significant differences by gender, age, solo versus group status of GPs or practice rurality in requests for blood tests.

Sensible drinking limits

GPs reported the upper limit for alcohol consumption for healthy adult males and non-pregnant females before they would give advice to cut down. Most (94%) answered this question in terms of units (standard drinks) per week rather than grammes of alcohol (one unit was described as ~10 g of alcohol). For men, the mean upper limit was 23 units per week (SD = 5.8); both median and modal values were 21, with 41% of GPs recording this value. For non-pregnant women, the mean upper limit was 16 units per week (SD = 4.5); median and modal values were 14, with 50% of GPs recording this limit. These data are reported in more detail elsewhere (Kaner *et al.*, 1997).

Recognition of alcohol-related problems

The majority of GPs (67%) indicated that they asked their patients about alcohol consumption 'some of the time'. A further 23% asked 'most of the time' and only 4% asked 'all the time'. These responses did not differ by age, gender or practice rurality. GPs from solo practices reported asking patients about alcohol consumption more often than GPs from group practices ($\chi^2 = 10.4$, $df = 1$, $P < 0.01$). In an open-ended question, GPs were asked about typical conditions that would elicit an enquiry about alcohol consumption, and the categorized responses to this question are shown in Table 1. Thirty-one per cent of GPs listed both

Table 1. Typical conditions that would elicit enquiry by GPs about excessive drinking

Conditions	Mean percentage
Physical symptoms	11
Psychological symptoms	1
Social symptoms	0
Physical and psychological symptoms	31
Physical and social symptoms	3
Social and psychological symptoms	0
Physical, psychological and social symptoms	12
Physical, psychological, social symptoms and other conditions	36
Other conditions only	6

physical and psychological symptoms and 36% listed a combination of physical, psychological, social and other conditions. 'Other conditions' referred mostly to new patient registrations. Only 1% of GPs listed psychological symptoms alone and none listed social problems alone. Responses did not differ significantly by either gender, age, solo versus group status of GPs, or practice rurality.

Attitudes to intervening for excessive alcohol consumption

Over three-quarters of the GPs (77%) believed that drinking alcohol moderately was 'important' (51%) or 'very important' (26%) in promoting patients' health; 83% were 'prepared' (57%) or 'very prepared' (26%) for counselling. Just 21% of GPs currently felt either 'effective' (20%) or 'very effective' (1%) at helping patients reduce excessive alcohol consumption. However, 58% felt that they could be: 'effective' (44%) or 'very effective' (14%) given adequate information and training. Ninety per cent (90%) of GPs reported that they either 'always' (32%) or 'as indicated' (58%) obtained information on patients' alcohol consumption.

Diagnostic and management skills

GPs indicated that the drinking problem was significantly more severe ($z = 12.4$, $P < 0.001$) in Case B (the dependent drinker) than in Case A (the excessive drinker) and they were more concerned that Case B should stop drinking alcohol altogether ($z = -11.9$, $P < 0.001$). However, GPs were significantly less confident ($z = -4.10$, $P < 0.001$) about being able to help Case B alleviate his drinking problem compared to Case A. Ratings were not significantly related to gender, age, solo versus group status of GPs, or practice rurality. The most frequent action recorded for Case A was to advise the patient to cut back on drinking (89% of respondents), whereas for Case B it was to advise abstinence (74% of respondents). A similar proportion of GPs (96% and 95%) indicated that they would ask some further questions about drinking for Case A and Case B, and 99% indicated that alcohol was probably related to some of the associated problems for both cases. Significantly more GPs (99%) indicated that they would order a complete blood count for Case B compared to Case A (85%) ($\chi^2 = 27.3$, $df = 1$, $P < 0.001$). Significantly fewer GPs ($\chi^2 = 113$, $df = 1$, $P < 0.001$) said they would refer Case A to a specialist agency (15%)

Table 2. Proportions of GPs agreeing with statements related to role acceptance for working with excessive drinkers and dependent drinkers

Item of role acceptance	Problem drinkers	Dependent drinkers
Role legitimacy	87	86
Role adequacy	71	60
Motivation	23	23
Task-specific self-esteem	19	28
Role satisfaction	13	8

compared to case B (71%). These responses did not differ by gender, age, solo versus group status of GPs, or practice rurality.

Attitudes to working with excessive drinkers

Most respondents (88%) felt that GPs should be: 'involved' (40%) or 'definitely involved' (48%) in promoting non-hazardous alcohol consumption, and a similar number (86%) felt that GPs should be: 'involved' (36%) or 'definitely involved' (50%) in providing alcohol information. GPs were less accepting of a role in treating alcohol-dependent patients, with 60% endorsing the responses: 'involved' (41%) or 'definitely involved' (19%).

Table 2 shows the proportions of GPs agreeing with statements relating to the five variables of the SAAPPQ when working either with excessive drinkers or dependent drinkers. Mean role adequacy and work satisfaction scores were significantly higher for working with excessive drinkers than for working with dependent patients ($z = -6.00$, $P < 0.001$ and $z = -4.89$, $P < 0.001$ respectively). Role motivation and role legitimacy scores did not differ significantly between excessive drinkers and dependent patients. In contrast, mean self-esteem scores were significantly higher for working with dependent patients than for working with excessive drinkers ($z = -5.22$, $P < 0.001$).

Disincentives and incentives for brief alcohol intervention in primary health care

The most strongly endorsed disincentives for brief alcohol intervention work were: that doctors were too busy dealing with the presenting problems of patients (72% agreement); that doctors were not trained in counselling for reducing alcohol consumption (62% agreement); and that government policies did not support preventive medicine (56%

Table 3. GPs' agreement with suggested barriers to brief alcohol intervention

Statement	Agreement (%)
Doctors are just too busy dealing with the problems people present with	72
Doctors are not trained in counselling for reducing alcohol consumption	62
Government health policies in general do not support doctors who want to practise preventive medicine	56
Doctors do not believe that patients would take their advice and change their behaviour	53
Doctors believe that alcohol counselling involves family and wider social effects and is therefore too difficult	52
Doctors do not have suitable counselling materials available	51
The government health scheme does not reimburse doctors for time spent on preventive medicine	51
Doctors have a disease model training and they don't think about prevention	42
Doctors do not have suitable screening devices to identify alcohol problems	41
Doctors themselves may have alcohol problems	41
Doctors think that preventive health should be the patient's responsibility not theirs	40
General practices are not organized to do preventive counselling	40
Doctors do not know how to identify problem drinkers who have no obvious symptoms of excess consumption	31
Private health insurance does not reimburse patients for alcohol counselling by doctors in general practice	31
Alcohol is not an important issue in general practice	30
Doctors feel awkward about asking questions about alcohol consumption because saying someone has an alcohol problem could be seen as accusing them of being an alcoholic	25
Doctors believe that patients resent being asked about their alcohol consumption	21

Table 4. GPs' agreement with suggested incentives for brief alcohol intervention

Statement	Agreement (%)
Support services were readily available to refer patients to	85
Early intervention for alcohol was proven to be successful	80
Patients requested health advice about alcohol consumption	77
Public health education campaigns in general make society more concerned about alcohol	65
Quick and easy counselling materials were available	60
Salary and working conditions were improved	60
Training programmes for early intervention for alcohol were available	57
Training in early intervention for alcohol was recognized for continuing medical education	52
Quick and easy screening questionnaires were available	51
Providing early intervention for alcohol was recognized for quality assurance credits	35
Patients were willing to pay a fee for alcohol counselling	24

agreement). The lowest rated disincentive was that patients would resent enquiry about alcohol issues (21% agreement). These data are shown in Table 3.

The most strongly endorsed incentives for brief alcohol intervention work were: more readily available support services to refer patients to (85% agreement); if early intervention was proven to be successful (80% agreement); and if patients requested advice about alcohol (77%). The lowest rated incentive concerned patients' willingness to

pay for alcohol counselling (24% agreement). These data are shown in Table 4.

DISCUSSION

This postal survey achieved a good response rate as over two-thirds of the GPs returned their questionnaire. Moreover, survey respondents were relatively representative of GPs nationally in

relation to several characteristics including (survey versus national figures): age (73% versus 72% aged under 50] and gender (24% versus 30% females) (Royal College of General Practitioners, 1996a); practice type (77% versus 70% group practices) and average number of partners per practice (3.4 versus 3.3 partners) (Royal College of General Practitioners, 1996b). In addition, 48% of GPs in this survey had over 150 consultations per week which relates well to the national average of 152 consultations per week (Royal College of General Practitioners, 1996c). Nonetheless, it is well known that non-responders to surveys may be different in characteristics to those who respond. Non-responders in GP surveys are likely to be older, more experienced, less well qualified and often single-handed practitioners and possibly those who feel under more stress (McAvoy and Kaner, 1996). Thus it is possible that alcohol-related attitudes and practices of non-responding GPs may be even more negative than those reported in this survey.

There was little effect of age, gender, solo versus group status of GPs, or practice rurality on experience of alcohol education and training or attitudes and practices relating to alcohol. The only differences were that male GPs reported managing more patients for alcohol problems during the last year than female GPs and solo GPs reported asking about alcohol consumption more often than GPs from group practices.

Most GPs did not routinely enquire about alcohol and relatively few blood tests were requested in the last year because of concerns about alcohol. The fact that 65% of GPs had managed one to six patients in the last year for excessive alcohol consumption was striking in view of evidence suggesting that ~20% of patients presenting to primary health care are likely to be excessive drinkers (Anderson, 1993). Given that the average list size per GP is 1820 patients (Royal College of General Practitioners, 1996b), it is likely that the mean number of excessive drinkers seen by GPs each year is ~364. Thus the majority of GPs may be missing as many as 98% of the excessive drinkers presenting in primary health care. GPs' failure in identifying excessive drinkers may be due to a reliance on physical symptoms to elicit enquiry about alcohol which suggests that they are focusing on a 'medical' model of alcohol problems.

Most GPs felt that moderate alcohol consumption was important for health promotion. However,

only a third of GPs always enquired about patients' alcohol consumption and a further 58% enquired only if symptoms indicated that this was necessary. These figures may be over-estimates, given the data reported for actual practice during the last year. Most GPs felt prepared to counsel patients about alcohol consumption, although only a fifth of the sample felt effective in helping patients reduce consumption.

Whilst it is difficult to draw firm conclusions from comparisons with previous GP surveys, due to differences in context and methodology, such comparison is useful in highlighting trends over recent years. The scale of perceived ineffectiveness in helping to reduce alcohol consumption is disappointing since a study more than 10 years ago reported that, although only 29% of GPs regularly gave advice to patients to reduce alcohol consumption, 56% believed their advice was effective (Anderson, 1985). Experience of training and education about alcohol issues may have improved in recent years, since 42% of GPs in this study reported receiving <4 h post-graduate training on alcohol-related issues compared to 66% reported in the Anderson (1985) study. GPs' estimates of how much they would benefit from more training and support suggest that efforts to increase training in this area would on the whole be welcome by GPs.

In comparison with earlier work (Anderson, 1985; Clement, 1986) more GPs felt that they should work with problem drinkers (role legitimacy) and that they possessed adequate knowledge and skills to do so (role adequacy). However, there appears to have been a deterioration in GPs' motivation to work with problem drinkers and in the satisfaction they expect to gain from doing so. Our findings fit with those reported in a recent national GP survey (Deehan *et al.*, 1995). This apparent increase in GPs' 'role legitimacy' in recent years may be due to the increased emphasis on preventive medicine and health promotion in medical training and practice.

However, despite increased 'role legitimacy', many GPs do not feel confident about their abilities to intervene with alcohol problems. Accepting that it may be difficult to generalize from responses to case vignettes to actual practice, GPs in this survey were able to discriminate between cases of 'excessive drinking' and 'alcohol dependence' and indicate appropriate action in each case. Nevertheless, GPs lacked confidence in their ability to help alleviate

drinking problems, particularly in the case of alcohol dependence. On the other hand, 60% of the GP respondents reported that they should be involved in treating alcohol dependent drinkers if appropriate support was provided.

The main disincentives for brief intervention for excessive alcohol consumption were insufficient time and training and lack of help from government policy. Lack of time may relate to the high workloads reported by GPs in this survey and more generally in the UK (Royal College of General Practitioners, 1996c). Among the 14 countries involved in the WHO International Collaborative Project, UK GPs were second only to those in Hungary in numbers of patients seen each week. It is interesting that patient resentment and GP awkwardness were not considered important barriers to brief intervention work. This might be seen as an improvement, given the earlier literature on the role of these interpersonal factors in discouraging enquiries about alcohol consumption (Cartwright, 1980; Thom and Tellez, 1986) and also suggests that interpersonal factors are now less important than the obvious structural and professional factors of workload and training. GPs regarded support services as essential if they were to become involved in brief alcohol intervention work. It may be that GPs are reluctant to screen for alcohol problems because they suspect that this will reveal too many serious problems for which they feel unskilled and unsupported in responding to (Durand, 1994). Finally, GPs reported that evidence of the effectiveness of brief intervention was an important incentive for being more active in the alcohol area. This finding suggests a need for more proficiency in disseminating the strong evidence for the effectiveness of brief alcohol intervention that already exists (Bien *et al.*, 1993; Freemantle *et al.*, 1993; Heather, 1995; Kahan *et al.*, 1995).

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APPENDIX 1. CASE HISTORY A: THE EXCESSIVE DRINKER

Mr A. is a 48-year-old man who presents for a physical examination. The patient lives alone and has been a member of your practice for about 3 years. He has attended intermittently during this time. He provides a history of sleep disturbances, which consist of waking some 3–4 h after falling asleep and then experiencing difficulty getting back to sleep. He also reports occasional dyspepsia relieved by ingestion of alkali preparations from the chemist. Upon your inquiry, he reports giving up smoking about 4 years ago. He does, however, report drinking alcohol and states that his average weekly consumption is about 20 pints of beer and about 5–6 glasses of table wine. History and functional inquiry are unremarkable in all other respects. On physical examination, the patient is noted to be moderately obese, of neat appearance and otherwise unremarkable. Pulse was 88 beats per minute and regular. Blood pressure was 144/94. Respiratory rate was 20 per min. The remainder of the physical examination was completely normal.

APPENDIX 2. CASE HISTORY B: THE DEPENDENT DRINKER

Mr B. is a 54-year-old man presenting with a chest infection involving the lower respiratory tract. The patient lives on his own and first attended your practice about 3½ years ago. He has attended intermittently during this time. His chest infection has been recurring and this is the third presentation in the past 12 months. The patient was a heavy smoker, but reports giving it up about 5 years ago. He does, however, report drinking alcohol and states that his weekly consumption averages about 20 pints of beer and one bottle of vodka. Investigation reveals evidence of early pneumonia. On examination of his abdomen, his liver is significantly enlarged with a firm, tender lower border. He has a fine tremor in his hands and his blood pressure was noted to be 180/110.

Our Healthier Nation: are general practitioners willing and able to deliver? A survey of attitudes to and involvement in health promotion and lifestyle counselling

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SUMMARY

Background. The recent Green Paper, *Our Healthier Nation*, identifies professional advice on healthier living as a key component of its national contract for health. General practitioners (GPs) are ideally placed for this work. However, previous research has reported a discrepancy between patients' expectations of lifestyle advice from GPs and their receipt of such advice.

Aims. To describe GPs' current attitudes to and involvement in health promotion and lifestyle counselling, and to track changes in these areas over recent years.

Method. A postal questionnaire survey of a random sample of 430 GPs, one per practice, from all general practices in Leicestershire, Derbyshire, and Nottinghamshire. GPs who had not responded after two weeks received a reminder telephone call plus two follow-up questionnaires.

Results. Four hundred and eleven GPs were eligible for the survey, which yielded a response rate of 68% ($n = 279$). GPs reported spending an average 16% of practice time on prevention and 79% reported educating patients about lifestyle risk 'most' or 'all of the time'. Solo GPs spent more time on prevention than GPs from group practices. Most enquiries and interventions related to smoking behaviour. GPs felt most effective in changing patients' use of prescription drugs, and the largest reported difference between current and potential effectiveness in helping patients change lifestyle behaviour, after information and training, related to reducing alcohol consumption.

Conclusions. Despite an increasing workload, GPs remain positive about health promotion and lifestyle counselling. Over the past 10 years, there has been an increase in routine enquiries about lifestyle behaviour, but confidence about effectiveness in helping patients change lifestyle behaviour remains low. More training and support concerning lifestyle intervention is required by GPs in order for

them to contribute effectively to the Government's health promotion programme.

Keywords: general practice; health promotion; lifestyle counselling.

Introduction

THE UK Government's recent Green Paper, *Our Healthier Nation*,¹ targets heart disease, strokes, cancers, suicides, and accidents, and identifies professional advice on healthier living as a key component of its national contract for health. General practitioners (GPs) are ideally placed for preventive medicine and health promotion in the form of early enquiry about patients' lifestyles and provision of information and counselling concerning risk factors. Two-thirds of the population visit their GP one or more times each year and 90% at least once in five years.² Moreover, patient attitudes towards lifestyle enquiry and intervention by GPs are positive.³⁻⁵ Lauritzen⁶ reported considerable patient interest in participating in such programmes. However, there appears to be a discrepancy between patients' expectations of lifestyle advice from GPs and the receipt of such advice.^{3-5, 7} There also appears to be a discrepancy between patients' reported interest in lifestyle issues and their perception of GP interest.⁵

Previous research has reported that, although GPs have endorsed lifestyle counselling as part of their role,⁸⁻¹¹ they are also cautious about its effectiveness in achieving change in patient behaviour,⁹ and have encountered difficulties in developing this approach in practice.¹⁰ These findings may explain the apparently low levels of lifestyle intervention by GPs in the UK⁷ despite the introduction of contractual strategies for this work by the Government.^{12,13} This study describes GPs' attitudes to and involvement in health promotion and lifestyle counselling as reported in 1995-1996, and assesses if there have been any changes in these over recent years. It is the first strand of a World Health Organization (WHO) Collaborative Project on implementing and supporting early and brief alcohol intervention in primary health care.¹⁴

Methods

The study was a postal survey of a random sample of 430 GPs from the Midlands who were listed as principals in 1995. One GP was randomly sampled from each practice in Leicestershire ($n = 152$), Derbyshire ($n = 158$), and Nottinghamshire ($n = 120$). Each GP was sent a questionnaire with a personalized covering letter and a pre-paid addressed envelope. The covering letter explained the background to the survey and confirmed that local research ethics committee approval had been granted. Two weeks after the original questionnaire was sent, a telephone call was made to all non-responding GPs to encourage them to return their questionnaires. Two further questionnaires accompanied by revised covering letters and pre-paid envelopes were sent out to all non-responding GPs at monthly intervals thereafter.

The 132-item self-administered questionnaire was developed

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as part of the WHO Collaborative Study and was pre-tested and piloted on 160 GPs from 11 countries. The first part of the questionnaire examined attitudes, perceived skills, and current practices relating to preventive medicine, including several areas of lifestyle intervention. The remainder of the questionnaire focused on GPs' involvement in alcohol intervention work; these data are reported in detail elsewhere.¹⁴ All data were coded and entered onto a database (SPSS for Windows).

Results

Telephone enquiries revealed that 19 GPs had either retired or left general practice and so the eligible sample size for the survey was 411 GPs. Two hundred and seventy-nine GPs returned their questionnaire to the study centre; an overall response rate of 68%. There were no significant differences between the three health districts in response rates, which were 66%, 68%, and 70% in Leicestershire, Derbyshire, and Nottinghamshire respectively.

The average age of GP responders was 43.7 years (standard deviation [SD] = 8.5) and 24% were female. Over three-quarters (77%) worked in group practices, with an average of three partners per practice (SD = 1.9). Half of the sample described their practices as urban, 16% as rural, and 34% as mixed urban/rural. The average time spent practising as a GP was 13 years (SD = 8.3), and responders spent an average of 5.4 days (SD = 1.0) per week in practice. Forty-eight per cent of the sample reported seeing more than 150 patients per week in practice and 39% between 101 and 150 patients per week.

Current practices in preventive medicine

GPs reported that, on average, 16% (SD = 10.8) of their total clinical time was spent on preventive medicine. There were no significant differences in the reported proportion of time spent on prevention between male and female GPs or those from urban, rural, and mixed practices. There was also no relationship between GP age and reported proportion of time spent on preventive medicine. Solo practitioners reported spending significantly more time on prevention than GPs from group practices ($\chi^2 = 5.1$; $df = 1$; $P = 0.02$). However, among group practices there was no significant difference in reported time spent on prevention between GPs with different numbers of partners.

The majority of GPs estimated that, during preventive check-ups, they educated or advised their patients about lifestyle or health risks 'most of the time' (55%) or 'all the time' (24%), with none indicating that they would 'rarely' or 'never' do so. During an illness visit (that is, one with specific symptoms), 61% of GPs indicated that they would educate or advise their patients about lifestyles 'some of the time' and 33% 'most of the time'.

Just over half of the GPs (54%) indicated that they placed a 'somewhat high' priority on disease prevention, with a further 21% placing it 'very high' and only 1% placing it 'very low'. When asked how their emphasis on disease prevention compared with other medical practitioners, 69% felt the emphasis was 'somewhat more' and 13% felt it was 'much more'.

Relative importance of different lifestyle behaviours in health promotion

Two hundred and thirty (82%) GPs rated seven lifestyle behaviour patterns in terms of importance in promoting good health in patients. Rating was on a four-point scale (very important [4 points] to unimportant [1 point]). Table 1 illustrates GPs' perceptions of the relative importance of different lifestyle behaviours in promoting patients' health. Not smoking was reported as being most important in health promotion and stress reduction reported as least important.

Involvement in lifestyle counselling

Table 2 shows the extent to which GPs obtained information from patients about lifestyle behaviour. Information was obtained most frequently about smoking and alcohol consumption and least frequently about stress and illicit drug use. Figure 1 shows the proportions of GPs who reported being 'prepared' or 'very prepared' to counsel patients on the seven lifestyle issues. Rating was on a four-point scale (very prepared [4 points] to very unprepared [1 point]). GPs were most prepared to counsel on smoking issues and exercise and least prepared to counsel concerning stress and illicit drug use.

Effectiveness in helping patients change lifestyle behaviour

Finally, GPs indicated on a four-point scale (very effective [4 points] to very ineffective [1 point]) their current perception of their effectiveness in helping patients change lifestyle behaviour and their potential effectiveness if provided with adequate information and training. Figure 2 shows the proportions of GPs who currently felt 'effective' or 'very effective' in changing patient behaviour and those who felt that they could be so after adequate information and training. For all categories of lifestyle behaviour, potential effectiveness was perceived as being greater than current effectiveness. The greatest difference between current and potential effectiveness was reported for reducing alcohol consumption.

Table 1. Relative importance of lifestyle behaviour in promoting good health: numbers and percentages of GPs ($n = 230$) rating lifestyle behaviour as 'important' or 'very important'.

Lifestyle behaviours	Number of GPs	Percentage
Not smoking	230	100
Exercising regularly	212	92
Not using illicit drugs	209	91
Drinking alcohol moderately	177	77
Responsible use of prescription drugs	175	76
Avoiding excess calories	173	75
Reducing stress	166	73

Table 2. Percentages of GPs collecting information about lifestyle behaviours ($n = 230$).

Behaviours	Always	As indicated	Occasionally	Rarely/never
Smoking	53	44	3	0
Alcohol consumption	32	58	9	1
Use of prescription drugs	28	50	20	2
Exercise	16	63	20	1
Diet/nutrition	9	61	28	2
Stress	3	66	29	3
Illicit drug use	8	45	35	12

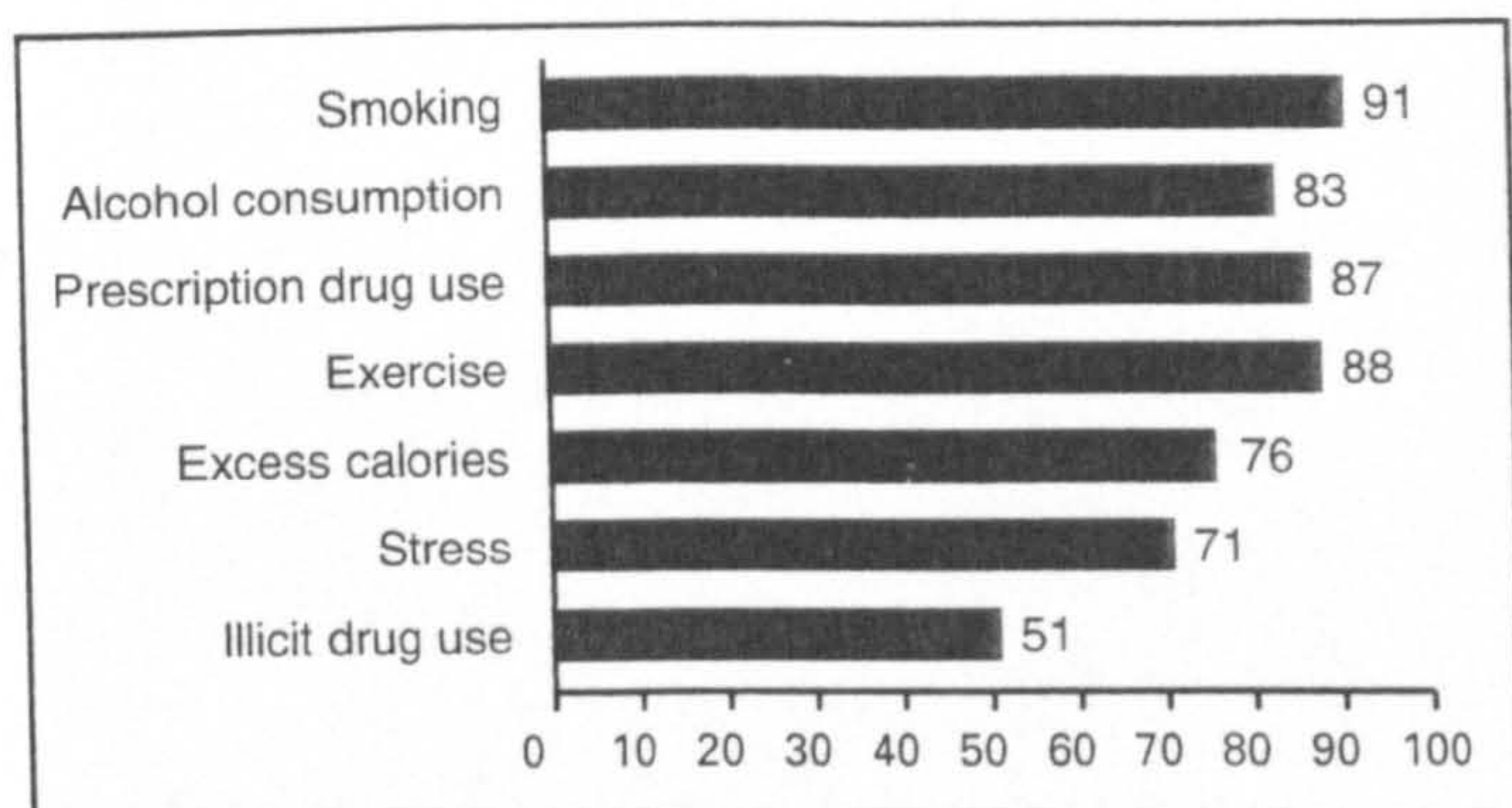


Figure 1. Percentages of GPs ($n = 230$) who were prepared or very prepared to counsel patients on lifestyles issues.

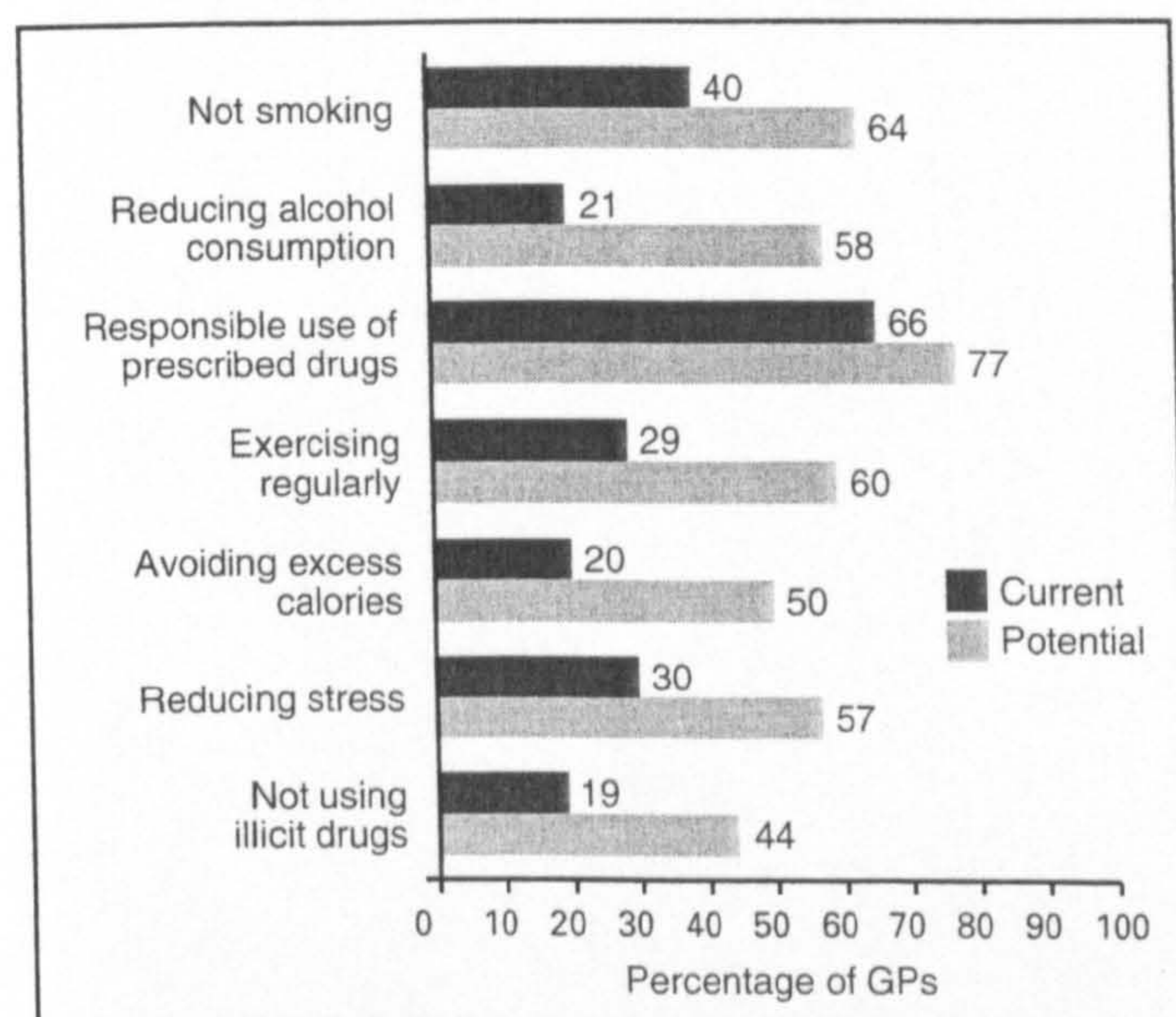


Figure 2. Percentages of GPs ($n = 230$) who reported feeling effective or very effective at helping patients change lifestyle behaviour both currently and potentially (after adequate training and support).

Discussion

Responders in this survey appeared to be representative of United Kingdom (UK) GPs with regard to age, sex, years in practice, practice type, and numbers of patient consultations per week.¹⁵ Previous UK research has suggested that younger doctors may be more amenable to preventive medicine^{16,17} and that female doctors may be more involved in preventive general practice.¹⁸ No such trends were shown by our responders. However, solo GPs reported spending a greater proportion of practice time engaged in preventive medicine than those in partnerships.

General practitioners in this survey estimated that preventive medicine took up approximately 16% of total general practice clinical time. This proportion is similar to figures reported for the United States¹⁹ and Sweden,²⁰ and slightly less than in New Zealand.⁸ GPs were positive about their involvement in disease prevention and lifestyle counselling, as 75% placed disease prevention 'somewhat' or 'very' high in their overall clinical priorities, while 79% reported that they educated patients about lifestyle risk 'most' or 'all' of the time. This level of support and enthusiasm seems to have been sustained from the studies of the 1980s.⁹⁻¹¹

Fry²¹ reported that the 1990 UK General Practice Contract increased GPs' involvement with preventive medicine from 5% to 25%, and he predicted that this increase might add an extra

10% or more to the numbers of patients attending per year. This extra attendance may explain part of the increase in GP workload reported in the UK in recent years.^{22,23} Despite the fact that UK GPs have experienced more stress, less job satisfaction, and poorer mental health since the new contract was introduced,²⁴ it is encouraging to see that attitudes towards health promotion and lifestyle counselling have remained high.

Another positive finding was that GPs appeared to be more active in enquiring about smoking, alcohol consumption, and exercise than in earlier studies. Information about smoking, alcohol consumption, and exercise was collected routinely by 97%, 90%, and 79% of GPs respectively. Similar figures for enquiring about smoking and alcohol consumption were found in a 1993 survey of London GPs.²⁵ By contrast, corresponding figures for routine enquiry about these issues in 1987¹⁰ were 64%, 26%, and 11%.

In all seven lifestyle areas included in this survey, there was a large difference between proportions of GPs who reported being prepared to counsel patients on lifestyle issues and proportions of GPs who felt effective at helping patients change these behaviours. For instance, although 83% of responders felt 'prepared' or 'very prepared' to counsel about alcohol consumption, only 21% felt they were 'effective' or 'very effective' in helping patients reduce alcohol consumption. These figures are lower than in earlier studies.²⁶⁻²⁹ The fact that the largest increase in current to potential effectiveness in helping patients change behaviour, after provision of adequate information and training, was reported for reducing alcohol consumption, suggests that particular efforts should be directed towards this area of continuing professional development. Indeed, only 13% of GPs in this survey had received more than 10 hours of postgraduate education or training on alcohol-related issues¹⁴

In conclusion, this survey shows that, despite an increasing workload, GPs in the UK remain positive about health promotion and lifestyle counselling. Over the past 10 years, routine enquiry about smoking, alcohol consumption, and exercise has increased but GPs' confidence in their ability help patients change lifestyle behaviour has remained low. Further information, training, and support is required by GPs to help them work more effectively in health promotion and lifestyle counselling and thus contribute fully to the UK Government's ambitious national contract for health.

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A randomized trial of three marketing strategies to disseminate a screening and brief alcohol intervention programme to general practitioners

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SUMMARY

Background. Research findings are of little benefit to patients or society if they do not reach the audience they are intended to influence. A dissemination strategy is needed to target new findings at its user group and encourage a process of consideration and adoption or rejection.

Aim. To evaluate the effectiveness and cost-effectiveness of different marketing strategies for the dissemination of a screening and brief alcohol intervention (SBI) programme to general practitioners (GPs).

Method. Seven hundred and twenty-nine GPs, one per practice, from the former Northern and Yorkshire Regional Health Authority were randomly assigned to one of three marketing strategies: postal marketing (mailing a promotional brochure to GPs), telemarketing (following a script to market the programme over the telephone), and personal marketing (following the same script during face-to-face marketing at GPs' practices). GPs who took up the programme were asked if they would agree to use it. Outcome measures included the proportions of GPs who took up the programme and agreement to use it.

Results. Of the 614 GPs eligible for the study, 321 (52%) took the programme. There was a significant difference in the proportions of GPs from the three marketing strategies who took the programme (82% telemarketing, 68% personal marketing, and 22% postal marketing). Of the 315 GPs who took the programme and were eligible to use it, 128 (41%) agreed to use the programme for three months. GPs in the postal marketing group were more likely to agree to use the programme (55% postal marketing, 44% personal marketing, and 34% telemarketing). Personal marketing was the most effective overall dissemination strategy; however, economic analysis revealed that telemarketing was the most cost-effective strategy. Costs for dissemination per GP were: £13 telemarketing, £15 postal marketing, and £88 personal marketing.

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Conclusion. Telemarketing appeared to be the most cost-effective strategy for dissemination of SBI to GPs.

Keywords: dissemination; marketing; brief alcohol intervention; economic evaluation.

Introduction

Health research findings are of little benefit to patients, or to society, if they do not reach the audience they are intended to influence – usually practitioners. Dissemination is the process of sending out information or making it widely available to others in the scientific and/or larger community. Dissemination is a complex and dynamic process whereby individuals become aware of new information, have the opportunity to assess its value, and then decide to either accept or reject it.¹ If adoption is chosen, then the process of implementation can begin in which new information is incorporated into practice either via individual or organizational behaviour change.

Screening and brief alcohol intervention (SBI) involves routine screening of the general practice population to identify 'at risk' drinkers and the subsequent delivery of brief structured advice on reducing excessive consumption. There is a strong evidence base for SBI by GPs; randomized controlled trials over 10 years have demonstrated that excessive drinkers receiving SBI reduce their consumption by approximately 25% compared with controls receiving assessment only.²⁻⁵ However, uptake of SBI by GPs has been negligible.⁶ Consequently, there is a need to investigate effective and cost-effective methods of conveying research findings to those who can act on them.

In a market economy, where supply continues to exceed demand, commerce and industry have been quick to adopt the concept of marketing to ensure their goods are sold. Despite extensive use in the commercial world, most health professionals have been slow to use marketing techniques to promote health products. Of the few published marketing studies available, postal marketing of health intervention programmes appears to be relatively ineffective.^{7,8} However, while personal marketing appears to be more effective,^{9,10} it may not be a cost-effective method.¹¹

The aim of this randomized trial was to investigate the most effective and cost-effective of three marketing strategies to encourage uptake and consideration of an SBI programme by GPs in the UK. This study was the first part of the UK arm of Phase III (Strand 3) of the World Health Organization (WHO) Collaborative Study on Disseminating and Implementing Brief Alcohol Intervention in Primary Health Care. The WHO study is the first trial in health research to evaluate the use of telemarketing to disseminate research findings.¹² An economic evaluation was carried out from the perspective of health authorities that may wish to disseminate SBI in general practice in the future. A companion paper investigates the process of encouraging implementation of SBI by GPs who have made the decision to adopt this approach¹³.

Method

Sample

The sampling frame consisted of 1236 general practices comprising 3816 GPs in the former Northern and Yorkshire Regional Health Authority. Seven hundred and twenty-nine general practices were randomly sampled using a computer programme, and one GP from each practice was selected using a random number table. GPs were randomly allocated to one of three marketing strategies in a ratio of approximately 2:1:1 (320 postal marketing, 213 telemarketing, and 196 personal marketing). Sample sizes and allocation ratios were based on the results of an earlier Australian arm of the study and checked in a pilot study. The marketing was carried out in three waves by two trained research associates with social sciences backgrounds between February and December 1996. Only those GPs who were randomly sampled into the study were eligible for participation. Thus, if another GP from the practice requested the programme, they were sent specimen materials but were not included in the study because they may have been disproportionately motivated towards health promotion or alcohol intervention work.

SBI programme

The SBI programme used in this study was called 'Drink-Less', and was developed by and tested with GPs in Australia.¹⁴

Marketing strategies

Each marketing strategy provided standardized information including endorsements, incentives, benefits of the programme, and possible barriers. Both research associates were fully conversant with the scripts but were also trained to anticipate and address any problems, barriers, or reservations expressed by the GP.

Postal marketing. GPs were mailed a promotional brochure (with reply slip) that described the programme in written and pictorial form and offered GPs free materials. GPs agreed to take the programme either by returning the reply slip or by telephoning the study centre.

Telemarketing. GPs were telephoned at their practice and the marketing script was used to promote the programme. Up to 10 attempts were made to speak to the GP. GPs agreed to take the programme verbally during the telephone conversation.

Personal marketing. GPs were telephoned to make an appointment but the specific reason for the visit was not explained. Researchers used the rehearsed marketing script to promote the programme and sample materials were shown. Up to 10 attempts were made to arrange an appointment. GPs agreed to take the programme verbally during the visit.

Once GPs had agreed to take the programme they were asked if they would try to run it in their practice for a three-month period. This allowed us to establish which GPs had considered the programme with a view to usage rather than agreeing to take it merely as a way of ending the marketing process.

Outcome measures

Uptake rate. The number of contactable GPs who took the programme was expressed as a percentage of those GPs from the original random sample who were offered the programme. Uncontactable GPs were sampled practitioners who had died, moved practice, or retired.

Consideration rate. The number of GPs who agreed to use the programme was expressed as a percentage of those GPs who

were eligible to use the programme. Ineligible GPs were those who worked less than two sessions per week, were retiring, going on maternity leave, or about to take a prolonged break from general practice.

Overall dissemination rate. The number of GPs who considered and agreed to use the programme were expressed as a percentage of those GPs from the original random sample who were offered the programme.

Economic evaluation

Costs associated with programme development, production, and marketing were recorded at all stages of the study to permit economic evaluation of the three strategies. Cost-effectiveness analysis was carried out using overall dissemination rate as the common outcome measure of effectiveness.

Ethical approval

The project received ethics committee approval from the lead ethics committee for the Northern part of the region and the 10 ethics committees covering the seven health districts in the Yorkshire part of the region. GPs in the study were not consulted prior to random allocation into marketing conditions.

Statistical analysis

Data were entered onto SPSS for Windows,¹⁵ and differences in proportions among treatment groups for programme uptake, consideration, and overall dissemination rates were assessed using chi-squared tests ($df = 2$).

Results

Of the 729 GPs randomly sampled into the study, 59 practitioners in the telemarketing and personal marketing groups were uncontactable because they had died, moved practice, or retired. It was not possible to obtain directly the equivalent figure for postal marketing. However, an average proportion of uncontactable GPs (15%) was calculated from the other two marketing groups and applied to the postal marketing group. This proportion of uncontactable GPs represented the inaccuracy inherent in the sampling frame (district health authority records) and is similar to other reports.¹⁵ It was not possible to establish how many GPs actually received the promotional brochure through the mail, but we assumed that all GPs working in practice who were posted the brochure received it. A further eight practices from the postal marketing group had to be excluded from the study because partners of the sampled practitioners responded instead of the practitioners themselves (presumably because of a personal interest in health promotion or alcohol-related issues).

Of 614 GPs who were eligible for marketing, 321 (52%) took the programme. Table 1 shows the uptake, consideration, and overall dissemination rates in the three marketing groups. There was a significant difference between the proportions of GPs from the three marketing groups who took the brief intervention programme ($\chi^2 = 181.4$; $df = 2$; $P < 0.0001$). A lower proportion of GPs in the postal marketing group (22%; $n = 57$) took the programme than GPs in the telemarketing (82%; $n = 153$) or personal marketing groups (68%; $n = 111$).

Of the 315 GPs eligible to use the programme in their practice, 128 (41%) agreed to use the programme for a three-month period. There was a significant difference between proportions of GPs from the three marketing groups who agreed to use the programme ($\chi^2 = 7.9$; $df = 2$; $P < 0.01$). GPs in the postal marketing group were most likely to agree to use the programme (55%; $n = 29$) followed by GPs in the personal marketing condition (44%; n

= 48), and GPs in the telemarketing condition (34%; $n = 51$).

There was also a significant difference between proportions of GPs from the three marketing groups in overall dissemination rate ($\chi^2 = 27.5$; $df = 2$; $P < 0.0001$). Overall dissemination was less effective in the postal marketing group (11%; $n = 29$) compared with the telemarketing group (27%; $n = 51$) and the personal marketing group (29%; $n = 48$).

Economic evaluation

Costs for the development and production of the 'Drink-Less' programme for the UK study totalled £6743.78. This cost was common across all three marketing strategies and was therefore excluded from the economic analysis. The total cost for marketing the programme to GPs was £6328.14. The breakdown of the costs for the three marketing strategies is shown in Table 2. Overall, telemarketing appeared to be the most cost-effective dissemination strategy.

Discussion

This study has shown that, although personal marketing was the most effective marketing strategy to persuade UK GPs to take up and consider using a brief alcohol intervention programme, the high travel and labour costs associated with this strategy resulted in telemarketing being a much more cost-effective option. Cost

per GP for dissemination of the programme was almost seven times cheaper in the telemarketing group compared with the personal marketing group.

This finding is consistent with previous studies showing that personal marketing is significantly more effective but more costly than postal marketing of health intervention programmes in primary health care.⁷⁻¹¹ We have also demonstrated that, in the UK, telemarketing is almost as effective as personal marketing but more cost-effective than either postal or personal marketing. However, while telemarketing was more cost-effective than the other strategies for overall programme dissemination, it was postal marketing that was the most successful method of persuading GPs to agree to use the programme, perhaps because those who responded by mail were more motivated to do so. The relative value placed on the most cost-effective strategy can therefore be debated depending on the importance the decision-maker attributes to variables such as budget constraints and perceived value of extra benefits.

Some caution is needed in generalizing the results of this study, particularly when a different intervention or subject matter is used, or when strategies are implemented in other countries. First, uptake and agreement to use an intervention will depend on the interest of the GP in the subject matter and the complexity of the intervention that is being disseminated. Secondly, the costs of

Table 1. Uptake, consideration, and dissemination rates in the three marketing strategies.

	Postal marketing	Telemarketing	Personal marketing	Total
Random sample	320	213	196	729
Uncontactable GPs	48 (15%) ^a	26 (12%)	33 (17%)	107 (15%)
Excluded GPs	8 (2%)	0 (0%)	0 (0%)	8 (1%)
Eligible uptake sample	264	187	163	614
Uptake rate	57 (22%)	153 (82%)	111 (68%)	321 (52%)
Ineligible to use GPs	4 (7%)	1 (1%)	1 (1%)	6 (2%)
Eligible to use sample	53	152	110	315
Consideration rate	29 (55%)	51 (34%)	48 (44%)	128 (41%)
Overall dissemination rate	29 (11%)	51 (27%)	48 (29%)	128 (21%)

^aEstimated value.

Table 2. Total costs in the three marketing strategies.

Costed item	Postal marketing ($n = 320$)	Telemarketing ($n = 213$)	Personal marketing ($n = 196$)
Promotional brochures	£124.80	-	-
Staff time to organize mail shot @ £5.00 per hour	£75.00	-	-
Postage of promotional brochures	£61.80	-	-
Non-utilization programmes posted to GPs	£170.81	£448.58	£62.76
Non-utilization programmes handed to GPs @ £3.81	-	-	£233.02
Postage of non-utilization programmes	£39.25	£92.10	£12.00
Staff time to prepare mailing @ £5 per hour	£21.67	£53.75	£2.50
Phone calls @ £0.05 per minute	£18.55	£66.35	£52.30
Staff time calling @ £5.00 per hour	£30.91	£110.58	£87.17
Mileage (up to 80 miles) @ £0.36 per mile	-	-	£2344.32
Mileage (over 80 miles) @ £0.18 per mile	-	-	£792.00
Travel time by staff @ £5.00 per hour	-	-	£1086.75
Contact and waiting time by staff @ £5.00 per hour	-	-	£341.17
Total marketing cost	£542.79	£771.36	£5013.99
Cost of marketing per GP	£1.70	£3.62	£25.58
Overall dissemination rate (effectiveness)	11%	27%	29%
Cost-effectiveness of dissemination (per GP)	£15.42	£13.41	£88.21

Cost-effectiveness = $\frac{\text{costs of marketing}}{\text{effectiveness of dissemination strategy}}$

strategies are likely to vary considerably depending on the country in which they are applied, owing to the different costs associated with labour, transport, postage, and material production.

Effective dissemination is an essential part of the process of getting research findings out into the community that can then benefit from them. Previous reliance on passive diffusion of information to keep health professionals' knowledge and skills up to date has failed,¹⁷ and more active dissemination strategies need to be explored. It took over 20 years for screening for hypertension, cervical cancer, and breast malignancy to be translated into routine clinical practice.¹⁸ Given the resource constraints that exist in the field of healthcare, consideration of the cost-effectiveness of dissemination strategies should also be a priority.

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A RCT of three training and support strategies to encourage implementation of screening and brief alcohol intervention by general practitioners

EILEEN F S KANER

CATHERINE A LOCK

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SUMMARY

Background. Providing doctors with new research findings or clinical guidelines is rarely sufficient to promote changes in clinical practice. An implementation strategy is required to provide clinicians with the skills and encouragement needed to alter established routines.

Aim. To evaluate the effectiveness and cost-effectiveness of different training and support strategies in promoting implementation of screening and brief alcohol intervention (SBI) by general practitioners (GPs).

Method. Subjects were 128 GPs, one per practice, from the former Northern and Yorkshire Regional Health Authority, who agreed to use the 'Drink-Less' SBI programme in an earlier dissemination trial. GPs were stratified by previous marketing conditions and randomly allocated to three intensities of training and support: controls ($n = 43$) received the programme with written guidelines only, trained GPs ($n = 43$) received the programme plus practice-based training in programme usage, trained and supported GPs ($n = 42$) received the programme plus practice-based training and a support telephone call every two weeks. GPs were requested to use the programme for three months. Outcome measures included proportions of GPs implementing the programme and numbers of patients screened and intervened with.

Results: Seventy-three (57%) GPs implemented the programme and screened 11 007 patients for risk drinking. Trained and supported GPs were significantly more likely to implement the programme (71%) than controls (44%) or trained GPs (56%); they also screened, and intervened with, significantly more patients. Costs per patient screened were: trained and supported GPs, £1.05; trained GPs, £1.08; and controls, £1.47. Costs per patient intervened with were: trained and supported GPs, £5.43; trained GPs, £6.02; and controls, £8.19.

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Conclusion. Practice-based training plus support telephone calls was the most effective and cost-effective strategy to encourage implementation of SBI by GPs.

Keywords: research implementation, training and support strategies, brief alcohol intervention, economic evaluation.

Introduction

Research dissemination, involving the transfer of new information to a target audience, is an essential first step in getting health professionals to incorporate new research findings into clinical practice. However, the receipt of new knowledge is not sufficient to change clinical practices.¹ An implementation strategy is often required to provide health professionals with the skills and encouragement needed to alter established routines, particularly since new research findings may conflict with community norms, which may have been built up over long periods of time or by day-to-day contacts with colleagues.² The term 'implementation strategy' describes interventions that aim to translate knowledge into changes in practice.³

Despite a long-standing and strong evidence-base for the effectiveness of screening and brief intervention (SBI) by general practitioners (GPs) in reducing excessive alcohol consumption,⁴⁻⁷ there is currently no evidence that this approach has been incorporated into routine practice. The provision of alcohol intervention materials^{8,9} or checklists of risk factors for disease including alcohol¹⁰ have not been sufficient to promote alcohol intervention in primary health care, although the receipt of diagnostic information and counselling directives about alcohol has been successful in increasing counselling by general medical interns.¹¹ Alcohol facilitators in general practice have produced equivocal results,^{12,13} and intensive training and education sessions alone have produced either modest¹⁴ or variable success rates.¹⁵

In a recent postal survey, GPs rated lack of support and a lack of training for doctors as the greatest barriers against incorporating SBI in primary health care.¹⁶ Thus the current pragmatic controlled trial aimed to evaluate the effectiveness of three intensities of training and support in promoting implementation of SBI by GPs. This study was the second part of the UK arm of Phase III (Strand 3) of the World Health Organization (WHO) Collaborative Study on Disseminating and Implementing Brief Alcohol Intervention in Primary Health Care.¹⁹ A cost-effectiveness analysis was carried out from the perspective of health researchers wishing to find an efficient means of implementing evidence-based health promotion in general practice.

Method

The sample consisted of 128 GPs, one per practice, who had taken up and agreed to use the 'Drink-Less' SBI programme¹⁷ in an earlier dissemination trial.¹⁸ GPs were stratified by previous marketing conditions (29 postal marketing, 51 telemarketing, 48 personal marketing) and then GPs in each stratum were random-

ly allocated, using a random number table, to three training/support conditions as follows: 43 controls, 43 training/no support GPs, and 42 training plus support GPs. Sample size calculations had been based on findings from an earlier Australian arm of the WHO study¹⁹ and checked in a UK pilot study.

Training and support interventions were delivered by two researchers with a social sciences background. Since receptionists helped administer the programme, they received similar training and support interventions to GPs, but these data are reported elsewhere.²⁰ GPs and receptionists were requested to screen all eligible patients (adults aged 16 and over who were not repeat attenders and who understood the English language), using the Alcohol Use Disorders Identification Test (AUDIT),²¹ for a period of three months. Receptionists handed out screening questionnaires to eligible patients while they waited to see the GP and then placed a sticker on patient files to prevent repeat screening; a tally-sheet was used to denote patients that were not screened. GPs scored questionnaires (using a template) and, if patients were identified as drinking at 'risk' levels (AUDIT score six or more for women and seven or more for men), GPs were directed to give five minutes of structured advice about alcohol, using a prompt card plus a follow-up booklet. All 128 GPs were offered a £50 voucher to compensate their practices for the extra administration work carried out by receptionists in this study.

The intensities of training and support

Control condition (n = 43). For the control group, the programme, containing written guidelines, was dropped-off at reception without demonstration. No training or support in programme usage was offered to GPs.

Training alone (n = 43). For GPs receiving training alone, they received the programme plus face-to-face training at their practices including having the programme set-up and demonstrated to them. GPs received no further advice or support on how to deliver the intervention.

Training plus support (n = 42). Those GPs receiving training and support received the programme plus the same face-to-face training, programme set-up, and demonstration as above. In addition, they received ongoing support and advice on how to deliver the intervention via fortnightly telephone calls throughout the three-month study.

Training and support issues

In addition to ensuring that GPs were familiar with programme materials and procedures, training dealt with a range of practical problems likely to be encountered during programme implementation, including difficulties with raising the topic of alcohol, dealing with negative patient reactions, and poor patient compliance.

Data collection and follow-up

In all three conditions, receptionists were telephoned two days after programme delivery to ensure that tallies were being used and that carbon copies of completed screening questionnaires were being collected.

Three months after programme delivery, all 128 GPs received a follow-up practice visit, which allowed researchers to debrief GPs and receptionists and to count any remaining programme materials. Researchers collected receptionists' tallies and carbon copies of screening questionnaires that were later scored to identify 'risk' drinkers and numbers of patients who were advised and/or given a booklet (GPs ticked two boxes on the questionnaire if they had carried out these activities).

Outcome measures

The outcome measures for the study were:

- **Implementation rate.** The number of GPs who screened at least one patient using the programme as a proportion of those GPs who agreed to implement it.
- **Screening rate.** The number of eligible patients who received a screening questionnaire divided by the total number of eligible patients who consulted the GP during the study.
- **Advice-giving rate.** The number of 'at risk' patients who were advised by the GP.
- **Booklet-giving rate.** The number of 'at risk' patients who were given booklets by the GP.
- **Overall intervention rate.** A product of screening and advising rates (advice-giving was the primary focus of intervention and a trigger for booklet-giving). Maximal intervention rate was achieved if GPs screened all eligible patients and advised all 'risk' drinkers.

Cost-effectiveness analysis

Costs of programme development and production were common across intervention conditions and were excluded from analysis. Costs of programme delivery, training, support, and follow-up were used to produce a cost per GP of each condition. Effectiveness measures, based on numbers of patients screened and intervened with in each condition, were used to calculate cost-effectiveness ratios.

Ethical approval

Ethical approval for this trial had been granted by 11 research ethics committees that covered the study area.

Statistical analysis

Data were analysed using the SPSS for Windows software package.²² Data distributions were negatively skewed and so non-parametric statistics were reported. Differences between groups in outcome measures were determined using chi-squared and Fisher exact tests for proportions, Kruskal-Wallis tests for median rates, and Spearman's rank correlation coefficients.

Results

Programme implementation

Seventy-three GPs (57%) implemented the 'Drink-Less' programme and screened 11 007 patients, of whom 3531 (32%) were 'risk' drinkers, 2048 (58%) were given alcohol-related advice, and 1020 (29%) were given a booklet. There was a significant difference in implementation rates between the three training/support conditions ($\chi^2 = 6.47$, $df = 2$, $P = 0.03$), which were 44% (19) for controls, 56% (24) for trained GPs, and 71% (30) for trained and supported GPs. There were no significant differences between GPs from the three previous marketing conditions in implementation rates.

Assistance and incentives

Twenty-nine GPs, 40% of those who implemented the programme, obtained assistance from practice members other than receptionists, usually a practice nurse (90%). There was no significant difference between the three training/support conditions in proportions of GPs who received assistance with the programme, which were 47% (9) of controls, 46% (11) of trained GPs, and 30% (9) of trained and supported GPs. However, GPs with assistance in running the programme were significantly more likely to implement it (Fisher exact; $P = 0.011$). Fifty-four GPs, 74% of those who implemented the programme, claimed the £50 voucher that was offered to all practices. There was sig-

nificant difference in proportions of GPs from the three training/support conditions who claimed the voucher ($\chi^2 = 7.4$, $df = 2$, $P = 0.02$): 30% (12) of controls, 42% (18) of trained GPs, and 57% (24) of trained and supported GPs.

Extent of programme implementation

The extent of programme implementation in the three training/support conditions is shown in Table 1. There was a significant difference between GPs in the three training/support groups in the median number of patients screened (Kruskal-Wallis $\chi^2 = 10.9$, $df = 2$, $P = 0.004$) and the median number of 'risk' drinkers identified (Kruskal-Wallis $\chi^2 = 8.8$, $df = 2$, $P = 0.012$). Screening and identification of 'risk' drinking were positively correlated (Spearman's $r = 0.97$, $P < 0.001$). There was also a significant difference between GPs in the three training/support groups in the median number of patients given alcohol-related advice (Kruskal-Wallis $\chi^2 = 12.2$, $df = 2$, $P = 0.002$), and a follow-up booklet (Kruskal-Wallis $\chi^2 = 10.6$, $df = 2$, $P = 0.005$). Advice and booklet giving were positively correlated (Spearman's $r = 0.97$, $P = 0.01$). On each measure, trained and supported GPs used the programme most extensively.

General practitioners' indications of intervention activity were corroborated by counts of materials at follow-up: the number of patients that GPs reported screening negatively correlated with numbers of remaining questionnaires (Spearman's $r = -0.99$, $P = 0.01$), and the number of booklets they reported giving to patients negatively correlated with numbers of remaining booklets (Spearman's $r = -0.93$, $P = 0.01$).

Accuracy of programme implementation

Table 2 reports accuracy measures of programme implementation. There was a significant difference between the three training/support conditions in median screening rates (Kruskal-Wallis $\chi^2 = 9.53$, $df = 2$, $P = 0.008$), with trained and supported GPs producing the highest median screening rate. However, there was no significant difference between the three training/support conditions in advice or booklet-giving rates. There was a significant difference between GPs from the three training/support conditions in overall intervention rate (Kruskal-Wallis $\chi^2 = 10.76$, $df = 2$, $P = 0.005$), with trained and supported GPs showing the highest rate.

Economic evaluation

The total cost of delivering training and support in this trial was £12 600.67. The breakdown of costs per training/support condition is shown in Table 3. Cost-effectiveness ratios were produced for measures of screening and overall intervention rate. Costs per patient screened were: trained and supported GPs, £1.05; trained GPs, £1.08; and controls, £1.47. Costs per patient intervened with were: trained and supported GPs, £5.43; trained GPs, £6.02; and controls, £8.19.

Discussion

All GPs in the study received brief intervention materials with written guidelines on how to implement the programme. The incremental effects of training alone and training plus telephone support on programme implementation were then evaluated. The potential of primary health care as a setting for prevention of alcohol problems was underscored by the fact that just 73 GPs screened over 11 000 patients and identified 3500 'at risk' drinkers during a three-month period.

Supported GPs were most likely to implement the programme and screened patients more extensively; however, they were no more likely than other GPs to deliver advice and booklets to 'at

risk' patients. Only 58% of 'risk' drinkers received alcohol-related advice and 29% received the follow-up booklet. It is not clear whether the short-fall in advice and booklet-giving was owing to the GPs' lack of confidence in the acceptability of the programme to some patients or the GPs' lack of comfort when advising particular patients. Future work should investigate these issues, particularly since GPs in this study were highly motivated doctors who had previously agreed to use the brief intervention programme and were not representative of GPs in general.

Given the relatively low costs of providing telephone support, training plus support was the most cost-effective strategy for encouraging GPs to implement SBI once agreement to do so had been obtained.¹⁸ However, it should be noted that only 10% of the original random sample of 729 GPs in the WHO study actually implemented the programme.²⁰ Also, 40% of GPs who implemented the programme enlisted help from other health professionals, usually practice nurses. Different practices used the programme to varying extents (the number of patients screened in this study ranged from nine to 590), and most practices ceased using the programme once the study was completed. Thus, although appropriate training and support strategies can influence more motivated primary health care professionals to become involved in brief alcohol intervention, there are currently significant structural and organizational barriers to longer term, systematic implementation.²³

Facilitating professional behaviour change towards an innovation is a complex issue with clearly defined stages that have been outlined in health literature,² social policy,²⁴ and the business and human resources literature.²⁵ An effective change strategy requires a strong and robust evidence base; identification of environmental, organizational, and individual barriers to change; and appropriately targeted interventions that maximize facilitating factors for the innovation while minimizing any barriers. Given the strong evidence-base for brief alcohol intervention, the prospects for implementing this approach in primary health care are good. However, researchers must be aware that different groups of people within a system may have different barriers to the innovation and different speeds of acceptance of change. Most GPs and nurses in this study reported positive views about their involvement with the programme, but receptionists reported less positive views.²⁰ This trial primarily met the training and support needs of GPs and, to a lesser extent, those of their receptionists. Less focus was given to the primary health care nurses who were often brought in to administer the programme. Future studies should strive to identify all the players in the system and adjust dissemination and implementation interventions to meet the needs of each. We are currently conducting a study of nurse-led brief alcohol interventions to address this issue.

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Table 1. Extent of implementation: total and median number (interquartile range) of patients screened and intervened with by GPs (n = 128) in the three training/support conditions.

Intervention item	Control (n = 43)	Training (n = 43)	Training and support (n = 42)	Total
Patients screened (n) median (interquartile range)	2160 0 (0-94)	3691 13.0 (0-163)	5156 99.5 (0-190)	11007 38 (0-158)
Patients at risk (n) median (interquartile range)	750 0 (0-40)	1127 7.0 (0-41)	1654 28.0 (0-64)	3531 11 (0-44)
Patients advised (n) median (interquartile range)	390 0 (0-5)	662 0 (0-22)	996 10.5 (0-39)	2048 0 (0-26)
Patients given booklets (n) median (interquartile range)	199 0 (0-3)	335 0 (0-8)	486 4.5 (0-14)	1020 0 (0-9)

Table 2. Accuracy of implementation: median (interquartile range) programme activity rates for GPs (n = 128) in the three training/support conditions.

Activity rates	Controls (n = 43)	Training (n = 43)	Training and support (n = 42)
Screening rate	0% (0-10%)	2% (0-12%)	10% (0-23%)
Advice-giving rate	41% (0-72%)	55% (14-72%)	59% (30-90%)
Booklet-giving rate	17% (0-34%)	17% (6-43%)	22% (12-29%)
Overall intervention rate	0% (0-2%)	0% (0-8%)	3% (0-16%)

Table 3. Costs of promoting implementation: training and support costs for GPs (*n* = 128) in the training/support conditions.

Costed item	Controls (<i>n</i> = 43)	Training (<i>n</i> = 43)	Training and support (<i>n</i> = 42)
Staff time mailing extra materials @ £5 per hour	£17.17	£22.33	£28.08
Extra materials and questionnaires	£132.54	£72.45	£175.95
Postage	£33.05	£37.01	£64.16
Telephone calls to practice @ 5p per minute	£20.30	£21.10	£38.05
Staff time calling GP @ £5 per hour	£33.83	£35.17	£63.42
Staff time travelling to practices @ £5 per hour	£261.08	£375.50	£636.25
Mileage1 (80 miles or less) @ 36p per mile	£634.32	£903.24	£1358.64
Mileage2 (over 80 miles) @ 18p per mile	£109.35	£205.92	£436.41
Staff time in contact/waiting at practice @ £5 per hour	£82.17	£147.00	£172.50
Vouchers claimed @ £50	£600.00	£900	£1200.00
Programme of materials @ £29.56	£1271.08	£1271.08	£1241.52
Total training/support cost	£3194.89	£3990.80	£5414.98
Cost per GP trained/supported	£74.29	£92.80	£128.92
Number of patients screened per GP	50.23	85.83	122.76
Cost/effectiveness: screening	1.47	1.08	1.05
Number of patients intervened with per GP	9.06	15.39	23.71
Cost/effectiveness: intervention	8.19	6.02	5.43

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Use of marketing to disseminate brief alcohol intervention to general practitioners: promoting health care interventions to health promoters

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Abstract

Health research findings are of little benefit to patients or society if they do not reach the audience they are intended to influence. Thus, a dissemination strategy is needed to target new findings at its user group and encourage a process of consideration and adoption or rejection. Social marketing techniques can be utilized to aid successful dissemination of research findings and to speed the process by which new information reaches practice. Principles of social marketing include manipulating the marketing mix of product, price, place and promotion. This paper describes the development of a marketing approach and the outcomes from a trial evaluating the effectiveness and cost-effectiveness of manipulating promotional strategies to disseminate actively a screening and brief alcohol intervention (SBI) programme to general practitioners (GPs). The promotional strategies consisted of postal marketing, telemarketing and personal marketing. The study took place in general practices across the Northern and Yorkshire Regional Health Authority. Of the 614 GPs eligible for the study, one per practice, 321 (52%) took the programme and of those available to use it for 3 months (315), 128 (41%) actively considered doing so, 73 (23%) actually went on to use it. Analysis of the specific impact of the three different promotional strategies revealed that while personal marketing was the most effective overall dissemination and implementation strategy, telemarketing was more cost-effective. The findings of our work show that using a marketing approach is promising for conveying research findings to GPs and in particular a focus on promotional strategies can facilitate high levels of uptake and consideration in this target group.

Introduction

Health-related research is of little benefit to patients or to society if its findings do not reach the audience they are intended to influence, usually practitioners. Previous reliance on more passive diffusion mechanisms such as printed publication is now widely accepted as inadequate since it has led to a situation where many evidence-based interventions have taken years before acceptance and widespread use, whilst other interventions of debatable efficacy con-

tinue to be used in practice (Lomas 1994). Increasingly there is a trend toward more active approaches to transmitting health messages to practitioners in order to promote evidence-based practice and cost-efficiency in the NHS (NHS Centre for Reviews and Dissemination 1999).

Dissemination is the process of sending out or making information widely available to others in the scientific and/or larger community. Dissemination is a complex and dynamic process whereby individuals become aware of new information, have the oppor-

tunity to assess its value and then decide to accept or reject it (Jennett 1994). Although it is well known that the receipt of new knowledge alone is usually not sufficient to change clinical practices (Haines & Donald 1998), dissemination is an essential first step in this process. Thereafter, an implementation strategy is required to help translate new knowledge into changes in practice (Davies *et al.* 1994) often by providing new skills and support in order to alter established routines which may have been built up over time (Dunn *et al.* 1994).

In today's economy, typically characterized by excess supply, increased risk, uncertainty and competition, commerce and industry have been quick to adopt the concepts of, and are becoming increasingly sophisticated at, marketing to ensure their products and services are sold. Marketing is a social and managerial process by which individuals and groups obtain what they need and want through creating and exchanging products and value with others. Marketing management involves analysing, planning, implementing, and controlling programmes, mainly through manipulation of product, price, promotion and place, to create exchanges that satisfy individual and organizational objectives (Ling *et al.* 1996; Kotler 1988).

Despite extensive use in the commercial world, most non-profit making organizations have been slow to use marketing techniques to promote their products or services. However, marketing is as equally applicable to the NHS and other non-profit making organizations as it is to commerce and industry and much can be learned from its successful application. Although marketing has traditionally been associated with the exchange of money for products or services it can also be applied to situations which seek to elicit some behavioural response from another party (Kotler 1988).

The use of marketing skills to influence behaviour has been referred to as 'social marketing' (Kotler & Zaltman 1971). Social marketing combines the best elements of traditional approaches to behaviour change (technological, economic, political/legal, educational) in an integrated planning and action framework and utilizes advances in communication technology and marketing skills. Social marketing aims to target one or more groups of target adopters and to tailor and structure social marketing pro-

grammes around the needs of each particular segment of a target population. (Kotler & Roberto 1989). Social marketing is concerned with introducing and disseminating new ideas and issues and increasing the prevalence of specific behaviours among target groups (Lefebvre 1992).

The social marketing process consists of analysing the social marketing environment, researching the target adopter populations, defining the social marketing problem or opportunity, designing social marketing strategies, planning the social marketing mix (product, price, place, promotion), and organizing, implementing, controlling and evaluating the social marketing efforts. Sound research is the basis of social marketing and involves the research techniques of: product development, product testing, research on positioning, testing brand name and packaging, pretesting communication material and test marketing (Ling *et al.* 1996; Lefebvre 1992; Kotler & Roberto 1989).

Alcohol is a significant source of morbidity, mortality and loss of economic productivity in the UK (Anderson *et al.* 1993). However, there is a long-standing and strong evidence base for the effectiveness and cost-effectiveness of screening and brief alcohol intervention (SBI) by general practitioners (GPs) in reducing excessive alcohol consumption (Fleming *et al.* 1997; Israel *et al.* 1996; Richmond *et al.* 1995; Freemantle *et al.* 1993). Despite this evidence base there is currently no evidence to suggest that GPs are either aware of the SBI approach or that they have incorporated it into routine practice (Richmond & Anderson 1994). Therefore, the principles of social marketing were used to develop and disseminate an alcohol SBI programme and procedures to GPs. This was the first step in a larger trial that went on to investigate aspects of SBI implementation (Kaner *et al.* 1999a).

The main techniques of social marketing that can be applied to developing and disseminating SBI to GPs consist of analysing the social marketing environment, researching the target adopter populations, defining the social marketing opportunity, designing social marketing strategies, planning the social marketing mix (product, price, place, promotion), and organizing, implementing, controlling and evaluating the social marketing efforts. However, it is the blend of variables in the marketing mix which is likely to

influence a GP's decision to adopt or reject the programme. For example, dissemination of SBI to GPs is more likely to be successful if GPs perceive the programme to be evidence-based or the materials to be attractive and acceptable (product); the benefits associated with the use of the programme outweighs the associated costs such as time and effort (price); the programme is easily obtainable (place); and the programme is promoted in a way that is acceptable to GPs, maximizes their interests in the programme and has high reach within the target population (promotion).

A limited number of published studies have examined manipulating basic promotional strategies for the dissemination of health interventions. Postal marketing of health intervention programmes has been shown to be relatively ineffective (Fowler *et al.* 1989; Roche & Richard 1994) and, whilst personal marketing appears to be more effective (Kottke *et al.* 1990; Mason & Williams 1990), it may not be a cost-effective method (Cockburn *et al.* 1992). None of these studies has examined either the effectiveness or cost-effectiveness of telemarketing. In addition, these studies failed to report any support for the promotional strategies with an overarching social marketing campaign and lacked research of their target adopters. For example, Cockburn *et al.* (1992) stated that some of the components of the quit-smoking intervention kit may have been unacceptable to GPs, making it unlikely that any promotional strategy would increase their use.

Market research/background

Product development

Early product prototypes were based on materials developed and evaluated in earlier World Health Organisation (WHO) studies (Saunders *et al.* 1993; Babor *et al.* 1994). Product development was initially carried out in Australia and emphasized the social marketing principle of identifying customer needs (GPs and receptionists) to allow the pricing, packaging, promotion and distribution of products that are likely to be acceptable to target adopters. Three GP focus groups and 10 receptionist interviews were carried out to assess (1) perceived need for SBI programme, (2) opinions on the content, format and

presentation, (3) potential barriers to acceptance/programme implementation in general practices, and (4) to pretest/pilot SBI programme in 15 general practices. An advertising agency assisted in the packaging of the intervention (Gomel *et al.* 1993, 1994).

UK development

Customization

The SBI programme was customized for use by GPs in the UK including amendments to details about standard drink units, alcohol consumption recommendations and information about local resources. Where necessary the wording on programme materials was changed to make them more culturally appropriate.

Barriers and facilitating factors

A postal questionnaire survey of a random sample of 430 GPs (target adopters) in the Midlands of England was carried out to assess GP attitudes and practices concerning preventive medicine, early alcohol intervention and the treatment of established alcohol dependence (Kaner *et al.* 1999b; McAvoy *et al.* 1999). The response rate was 68%. GPs reported high workloads, but were positive about the preventive approach, regularly obtained information and were prepared to counsel patients about alcohol, but few felt effective in helping patients reduce consumption. Barriers for SBI were being too busy (72% agreed), not being trained (62% agreed) and that government policies did not support preventive medicine (56% agreed). Facilitating factors for SBI were support services being more available (85% agreed), early alcohol intervention being proven successful (80% agreed) and patients requesting advice about alcohol (77% agreed). These issues were addressed in all the promotional strategies.

Product champions

A qualitative interview study of nine key informants from government and national health and alcohol bodies was carried out to assess and document incentives and disincentives for SBI in the UK (McAvoy *et al.* 2000). All key informants were in favour of GPs doing more early alcohol intervention because of its proven effectiveness and cost-effectiveness. Endorsements were included in all promotional strategies,

for example, WHO, RCGP (Royal College of General Practitioners), NoReN (Northern Primary Care Research Network), Department of Primary Health Care.

Pilot study

Programme and promotional strategies were pretested in actual general practice situations in the UK (Fig. 1).

Product

The 'Drink-Less' intervention programme (Centre for Drug and Alcohol Studies 1993) is designed for use by GPs, with help from their receptionists, to opportunistically identify and briefly intervene for excessive drinking in primary health care. The programme is based on a number of psychological theories and strategies including the provision of

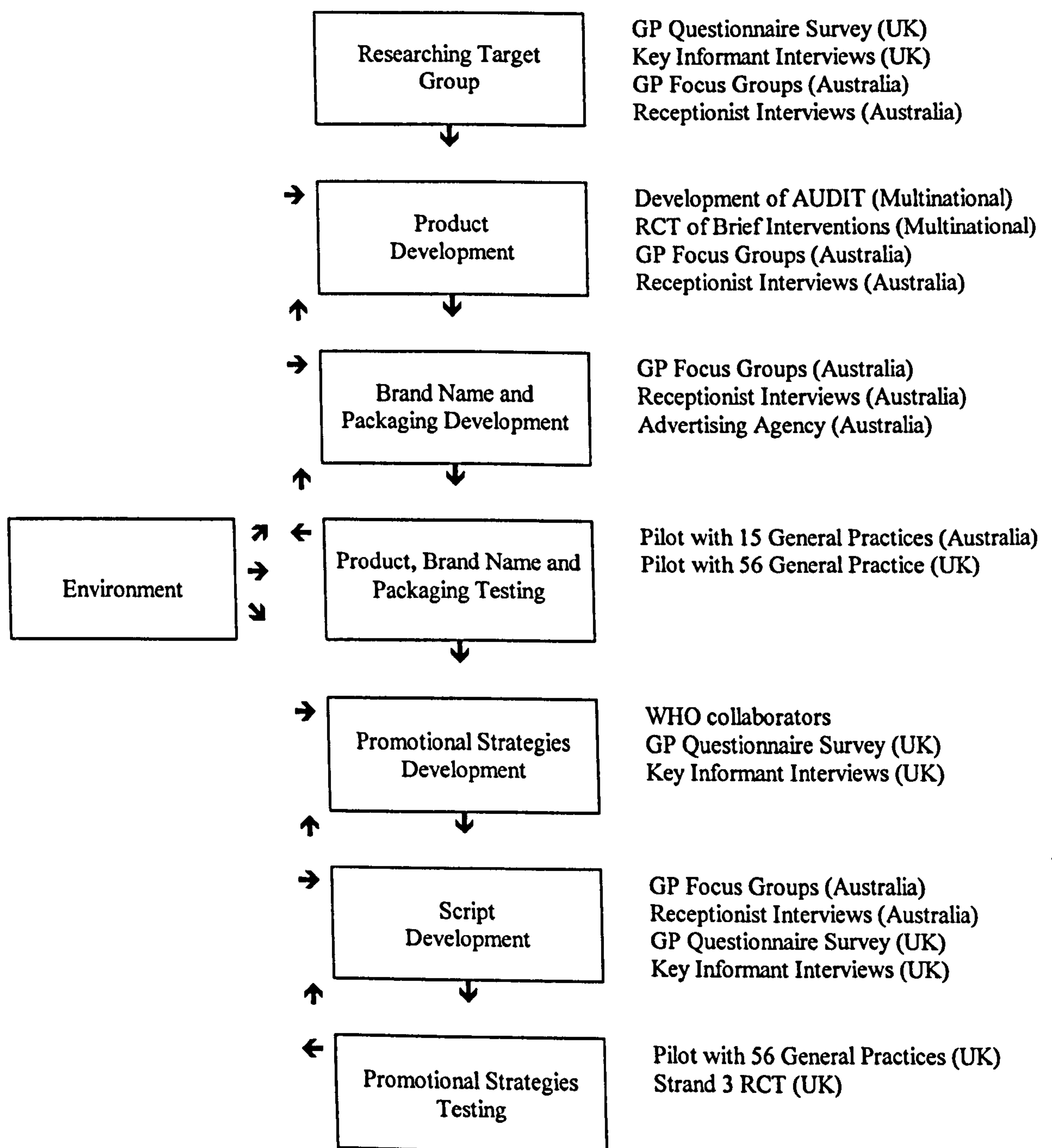


Figure 1 Social marketing strategy.

information, comparison with normative data on alcohol and the exploration of the health consequences of alcohol by an authority figure. The inter-

vention takes into account the stages people go through when attempting to change lifestyle behaviours (Boxes 1 and 2).

Box 1. The Drink-Less Brief Intervention Programme Contents

Promotional pamphlet (double fold pamphlet)	A pamphlet advertising the benefits of intervention, the materials and information on how to use them and details on how to request the programme.
Programme guidelines for GPs (single-fold pamphlet)	A step by step guide for doctors on how to run the programme. The guide explains the aim of the programme, steps on how to implement the programme and tips for difficult situations that they might encounter.
Programme guidelines for receptionists (single fold pamphlet)	A step by step guide for receptionists on how to run the programme. The guide explains the role of the receptionist, what the doctor will do and tips for difficult situations that they might encounter.
AUDIT questionnaire for patients (sheet plus carbon copy with patient name removed)	A 10-item questionnaire covering quantity and frequency of alcohol intake, drinking behaviour and dependence, and alcohol related harm. The concept of a standard drink is illustrated in the questionnaire.
Scoring template for GPs	A template designed for quick and accurate scoring and interpretation of the questionnaire by the GP. Additionally, the template provides guidelines on how to proceed if problems are identified.
Advice card for GPs	A laminated, double-sided card containing clear information on alcohol such as the safe levels, what constitutes a standard drink, the benefits of cutting down and/or abstaining, tips on helping patients change and advice on how to set goals, determine action and review progress.
Self-help booklet for patients	A pocket size, anonymous, self-help booklet for patients that reinforces in more detail advice given by the GP and contains information on the health effects of alcohol and guides on changing habits and self-monitoring intake.
Stickers for patient files	Small dot stickers which are placed on the files of patients who have been screened, or who have refused to be screened, to avoid repeat screening of these patients at a future date.

The intervention programme also contains a promotional poster, zip folders for the programme materials, cardboard folder for returned AUDIT questionnaires, claim form for postgraduate educational accreditation, claim form for £50 payment to practice for receptionist involvement, patient information leaflets and information notices for waiting rooms.

Box 2. The Brief Intervention Process

- (1) The receptionist hands out and explains the screening questionnaire to every patient 16 years of age and over. Patients fill out the questionnaire while they are waiting to see the doctor.
- (2) The receptionist places a sticker on the record card or file of each patient that has been given a questionnaire to fill out to avoid repeat screening.
- (3) The patient takes their completed questionnaire into their consultation with the GP.
- (4) The GP treats the patient for their presenting problem.
- (5) The GP scores the questionnaire using the template provided. If the patient is at risk of harm from alcohol then the GP advises the patient using the advice card provided (for about 5 min) and gives them a self-help booklet.
- (6) The GP may negotiate another consultation for follow-up with the patient.

Method

Details of the methodology have been reported elsewhere (Lock *et al.* 1999; Kaner *et al.* 1999) and so the broad outline of the study will be described here. The sampling frame consisted of 1236 general practices containing 3816 GPs in the Northern and Yorkshire Regional Health Authority. Seven hundred and twenty-nine GPs, one per practice, were randomly sampled into the study in a three-stage process which involved selecting practices using SPSS for Windows (SPSS; Chicago, IL, USA) (Norusis 1997), then GPs using a random number table and then allocating subjects to one of the three promotional strategies postal marketing ($n=320$), telemarketing ($n=213$) and personal marketing ($n=196$).

Promotional strategies

Three promotional strategies were used to facilitate dissemination of the screening and brief alcohol intervention programme. The content was common to all strategies, however, its promotion varied in directness. Each strategy: demonstrated endorsements from major medical authorities; emphasized the benefits of using the programme including the development of new skills for patient management, keeping in touch with the latest trend in preventive medicine, increased patient satisfaction and enhancing professional practice; and addressed barriers to programme implementation, such as the issue of time constraints, by emphasizing the minimal time necessary to screen and advise patients, and the simplicity of programme use. The programme was offered to GPs free of charge so that the 'price' was only associated with their time and effort.

Postal marketing

GPs in this group received a promotional pamphlet with a detachable, addressed reply slip. The pamphlet entitled '*who's got a drinking problem?*' contained information which argued that the GP is the best person to say which of their patients has a drinking problem and explained what the programme involved, the time involved, the success rate, the benefits to the GP and the cost. Also described was the scientific basis for the programme and endorsements

from the major medical organization were listed. In the pamphlet the major items of the programme were represented pictorially. A personalized letter signed by one of the study principal investigators who was a professor of primary health care and practising GP accompanied the pamphlet. The letter listed the endorsements and scientific basis for the programme and encouraged the GP to request a programme by returning the reply slip or by phoning the study centre.

Telemarketing

Telephone contact was made with GPs by calling the practice up to 10 times. Once the GP had been contacted a 'sales' script was used to promote the programme and encourage GPs to request materials. The script described the aims of the brief intervention programme, emphasized that the intervention programme was free of charge and that the materials were scientifically founded with effectiveness demonstrated and detailed endorsements from the major medical organizations. If the GP was hesitant about accepting the programme more details were provided on: what the programme involved, the programme contents, the coordinators of the programme, programme efficacy and likely benefits from their participation. To adequately address barriers to GPs involvement in the programme we had anticipated and formulated responses to likely questions and programme barriers as part of the telemarketing script. Some of the barriers were: not having enough time, beliefs that GPs already counsel their patient or that their patient population did not have problems with alcohol. GPs agreed to take the programme verbally during the telephone conversation.

Personal marketing

A general appointment was made with GPs by telephone, via either receptionists, practice managers or GPs themselves to discuss health promotion; the precise purpose of the visit was not explained. Once face-to-face contact was made with a GP a rehearsed script, adapted from the telemarketing script above, was used to encourage GPs to take the brief intervention programme. Thus, rather than the programme being described over the telephone prac-

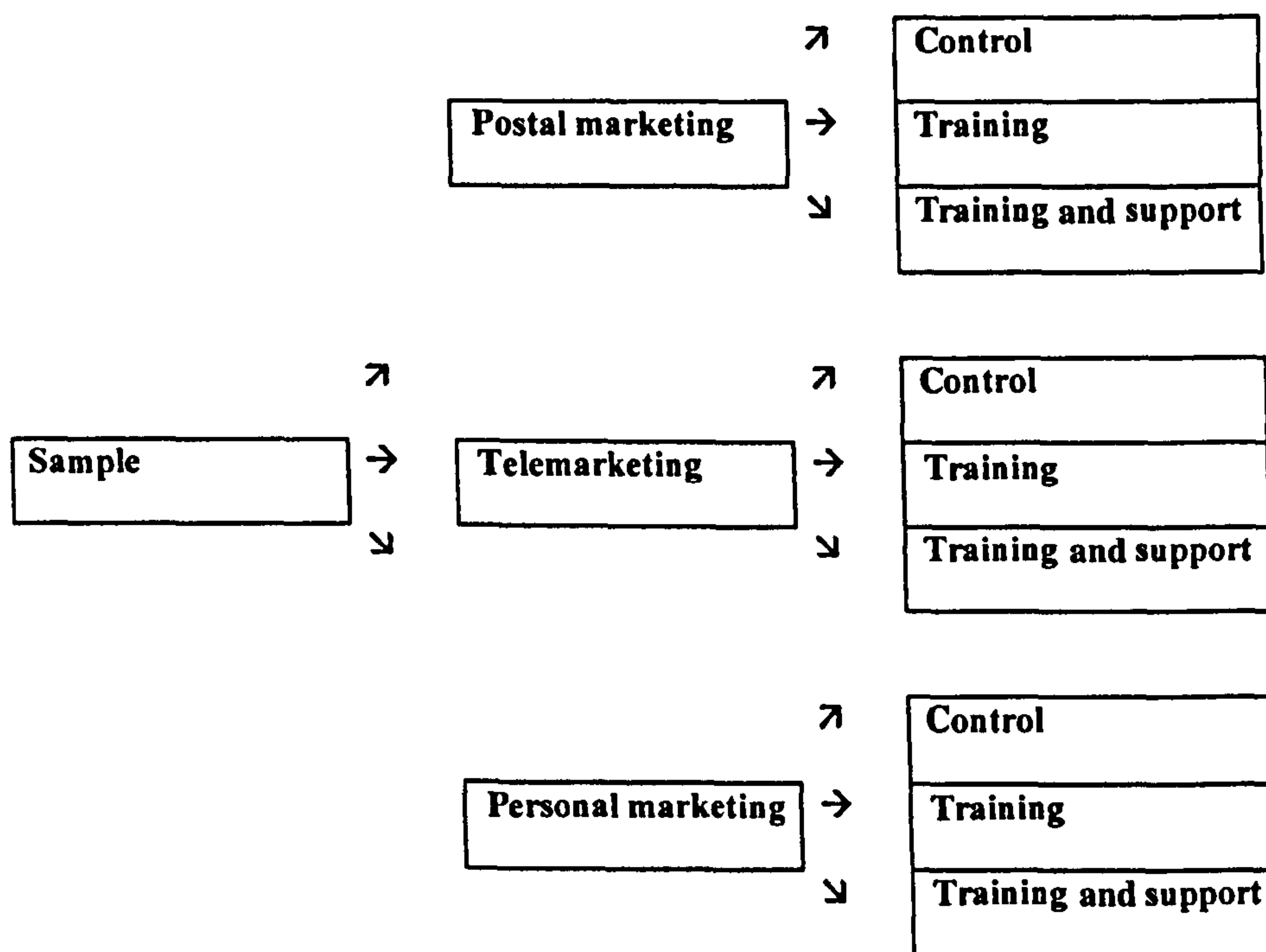


Figure 2 Study design.

titioners had the programme demonstrated to them in their practice. Up to 10 attempts were made to arrange an appointment. GPs agreed to take the programme verbally during the visit.

Once GPs had accepted the programme materials, via promotional pamphlet, telephone or directly they were asked if they would agree to implement it in their practice for 3 months to ensure that they considered what was in the programme. Later all GPs who agreed to implement the SBI programme were entered into the second (implementation) phase of the study and were subsequently allocated into one of three training/support strategies to encourage implementation. Three months after agreement to use the programme, practices were visited to assess whether the programme had been implemented by counting remaining materials and collecting carbon-copies of screening questionnaires used with patients (Fig. 2).

Incentives

All GPs who agreed to implement the programme were offered a £50 voucher to compensate their practices for the extra administration work carried out by receptionists.

Sample size

Sample sizes and allocation ratios were based on the results of an earlier Australian arm of the study (Gomel *et al.* 1998) and checked in a UK pilot study. Sample size calculations provide 80% power at a significance level of 0.05 based on finding a difference between promotional strategies of 20%. Only GPs who were randomly sampled into the study were eligible for participation. Thus, if another GP from the practice requested the programme they were sent specimen materials but were not included in the study because they may have been disproportionately motivated for health promotion or alcohol intervention work.

Outcome measures

Uptake rate

The number of contactable GPs who took the programme expressed as a percentage of GPs from the original random sample who were offered the programme. Uncontactable GPs were sampled practitioners who had died, moved practice or retired.

Consideration rate

The number of GPs who agreed to use the programme expressed as a percentage of GPs who were eligible to use the programme. Ineligible GPs were those who worked less than two sessions per week, were retiring, going on maternity leave or about to take a prolonged break from general practice.

Overall dissemination rate

The number of GPs who considered and agreed to use the programme expressed as a percentage of GPs from the original random sample who were offered the programme.

Overall implementation rate

The number of GPs who screened at least one patient using the programme as a percentage of GPs from the original random sample who were offered the programme.

Economic evaluation

Costs associated with programme development, production and promotion were recorded at all stages of the study to permit economic evaluation of the promotional strategies. Costs of promotion were used to produce a cost per GP of each strategy and overall dissemination rate and implementation rate were used as common outcome measures of effectiveness.

Ethical issues

GPs in the study were blind as to their random allocation into promotional strategies. Ethical committee approval was not required for the dissemination phase of the study but, as the implementation phase involved screening and intervention with patients, ethics committee approval was obtained from the lead ethics committee for the Northern part of the region and the 10 ethics committees covering the seven health districts in the Yorkshire part of the region.

Statistical analysis

Data were entered onto SPSS for Windows (Norusis 1997). Differences in proportions among treatment groups for programme uptake, consideration, overall dissemination and implementation rates were assessed using χ^2 tests on 2 d.f.

Results

Of 729 GPs randomly sampled, 59 practitioners in the telemarketing and personal marketing groups were not contacted because they had died, moved practice or retired. It was not possible to obtain directly the equivalent figure for postal marketing. However, an average proportion of non-contacted GPs (15%) was calculated from the other two promotional strategies and applied to the postal marketing group. This proportion of non-contacted GPs represented the inaccuracy inherent in the sampling frame (district health authority records) and was similar to other reports (Calnan & Williams 1993).

It was not possible to establish how many GPs actually received the promotional brochure through the mail but we assumed that all GPs working in practice who were posted the brochure received it. A further eight practices, from the postal marketing group, had to be excluded from the study because partners of the sampled practitioners responded instead of the target GP (perhaps because of a personal interest in health promotion or alcohol-related issues).

Of 614 GPs who were eligible for the study, 321 (52%) took the programme. Table 1 shows the uptake, consideration, overall dissemination and implementation rates in the three promotional strategies. There was a significant difference between the proportions of GPs from the three promotional strategies who took the brief intervention programme ($\chi^2=181.4$, 2 d.f., $P<0.0001$). A lower proportion of GPs in the postal marketing group (22%, $n=57$) took the programme than GPs in the telemarketing (82%, $n=153$) or personal marketing groups (68%, $n=111$).

Of 315 GPs eligible to use the programme in their practice, 128 (41%) agreed to use the programme for a 3-month period. There was a significant difference between proportions of GPs from the three promo-

Table 1 Uptake, consideration, dissemination and implementation rates in the three promotional strategies

	<i>Postal marketing</i>	<i>Tele-marketing</i>	<i>Personal marketing</i>	<i>Total</i>
Random sample	320	213	196	729
Contacted and eligible GPs	264 (83%)	187 (88%)	163 (83%)	614 (84%)
Uptake (rate)	57 (22%)	153 (82%)	111 (68%)	321 (52%)
GPs eligible to use	53 (93%)	152 (99%)	110 (99%)	315 (98%)
Consideration (rate)	29 (55%)	51 (34%)	48 (44%)	128 (41%)
Overall dissemination (rate)	29 (11%)	51 (27%)	48 (29%)	128 (21%)
Overall implementation (rate)	17 (6%)	24 (13%)	32 (20%)	73 (12%)

Table 2 Total costs in the three promotional strategies

<i>Costed item</i>	<i>Postal marketing (n = 320)</i>	<i>Tele-marketing (n = 196)</i>	<i>Personal marketing (n = 213)</i>
Promotional brochures	£124.80	—	—
Staff time to organize mail shot @ £5 per hour	£75.00	—	—
Postage of promotional brochures	£61.80	—	—
Non-utilization programmes posted to GPs	£170.81	£448.58	£62.76
Non-utilization programmes handed to GPs @ £3.81	—	—	£233.02
Postage of non-utilization programmes	£39.25	£92.10	£12.00
Staff time to prepare mailing @ £5 per hour	£21.67	£53.75	£2.50
Telephone calls @ 5p per minute	£18.55	£66.35	£52.30
Staff time calling @ £5 per hour	£30.91	£110.58	£87.17
Mileage (up to 80 miles) @ 36p per mile	—	—	£2344.32
Mileage (over 80 miles) @ 18p per mile	—	—	£792.00
Travel time by staff @ £5 per hour	—	—	£1086.75
Contact and waiting time by staff @ £5 per hour	—	—	£341.17
Total marketing cost	£542.79	£771.36	£5013.99
Cost per GP marketed to	£1.70	£3.62	£25.58
Overall dissemination rate (effectiveness)	11%	27%	29%
Cost-effectiveness of dissemination (per GP)	£15.42	£13.41	£88.21
Overall implementation rate (effectiveness)	6%	13%	20%
Cost-effectiveness of implementation (per GP)	£28.33	£27.85	£127.90

Cost-effectiveness = costs of marketing + effectiveness of dissemination strategy

tional strategies who agreed to use the programme ($\chi^2=7.9$, 2 d.f., $P<0.01$). GPs in the postal marketing group were most likely to agree to use the programme (55%, $n=29$) followed by GPs in the personal marketing group (44%, $n=48$) then GPs in the telemarketing group (34%, $n=51$). There was also a significant difference between proportions of GPs from the three promotional strategies in overall dissemination rate ($\chi^2=27.5$, 2 d.f., $P<0.0001$). Overall dissemination was less effective in the postal marketing group (11%, $n=29$) compared with the telemarketing group (27%, $n=51$) and the personal marketing group (29%, $n=48$).

GPs in each promotional strategy, who agreed to use the programme, were subsequently allocated into one of three training/support strategies to encourage implementation. However, because this allocation was done on an even basis it is possible to examine the impact of promotional strategies on overall implementation. Of the 729 GPs randomly sampled to the study, 73 (12%) actually implemented the programme over the 3-month period and, although there was no significant difference between proportions of GPs from the three promotional strategies in overall implementation rate, more GPs in the personal marketing group (20%, $n=32$) actually implemented the

programme compared with telemarketing (13%, $n=24$) and postal marketing (6%, $n=17$).

Economic evaluation

Costs for the development and production of the SBI programme in this study were £6743.78. This cost was common across all three promotional strategies and was therefore excluded from subsequent economic analysis. The total cost for promoting the programme to GPs was £6328.14 and the breakdown of these costs by promotional strategy is shown in Table 2. Overall, telemarketing was the most cost-effective overall dissemination strategy and implementation strategy.

Discussion

The findings of our work show that using a marketing approach is promising for conveying research findings to GPs and in particular a focus on promotional strategies can facilitate high levels of uptake and consideration in this target group. This study has shown that, although personal marketing was the most effective strategy to promote dissemination of an SBI programme to GPs, the high travel and labour costs associated with this strategy resulted in telemarketing being a much more cost-effective option. Cost per GP for dissemination of the programme was almost seven times cheaper in the telemarketing group compared with the personal marketing group. Similar results have since been found elsewhere in Australia (Gomel *et al.* 1998), Denmark (Hansen *et al.* 1999) and New Zealand (McCormick *et al.* 1999).

In addition, this finding is consistent with previous studies showing that personal marketing is significantly more effective but more costly than postal marketing of health intervention programmes in primary health care (Roche & Richard 1994; Cockburn *et al.* 1992; Kottke *et al.* 1990; Mason & Williams 1990; Fowler *et al.* 1989). However, telemarketing is almost as effective as personal marketing but more cost-effective than either postal or personal marketing. Nonetheless, whilst telemarketing was more cost-effective than the other strategies

for overall programme dissemination, it was postal marketing that was the most successful method of persuading GPs to agree to use the programme, perhaps because those who responded by mail were more motivated to do so. The relative value placed on the most cost-effective strategy can therefore be debated depending on the importance the decision-maker attributes to variables such as budget constraints and perceived value of extra benefits.

Some caution is needed in generalizing the results of our study, particularly when a different intervention or subject matter is used, or when strategies are implemented in other countries. First, uptake and agreement to use an intervention will depend on the interest of the GP in the subject matter and the complexity of the intervention that is being disseminated. Second, the costs of strategies are likely to vary considerably depending on the country in which they are applied because of the different costs associated with labour, transport, postage and material production.

Effective dissemination of research findings is an essential part of the process of getting research findings out into the community which can then benefit from them. Previous reliance on passive diffusion of information to keep health professionals knowledge and skills up to date has failed (Haines & Donald 1998) and more active dissemination strategies need to be explored. It took over 20 years for screening for hypertension, cervical cancer and breast malignancy to be translated into routine clinical practice (Kiernan & Frame 1996). Given the resource constraints that exist in the field of health care, consideration of the cost-effectiveness of dissemination strategies should also be a priority. Effective dissemination is first step in professional behaviour change but it is not sufficient in itself. Consequently, the second part of this study looked at methods of encouraging GPs to implement SBI by evaluating the incremental effect of providing written guidelines, guidelines with practice-based training and then guidelines with training plus on-going telephone support.

This study has focused on disseminating SBI to GPs due to the fact that doctors represent the common core of primary care across different countries in the WHO study. However, in the UK primary health care encompasses an extensive team including

a range of nurses and other health professionals. Research has shown that both practice nurses and their respective GPs identify health promotion as a significant feature of the nurse role (LeTouze & Calnan 1996). Consequently, resultant work has focused on nurse-led early and brief alcohol interventions. However, this group of target adopter will possess attitudes and beliefs which need to be accounted for in marketing. Therefore, the study team has completed qualitative interview work with primary health care nurses to identify the barriers and facilitating factors for early and brief alcohol intervention and also to customize the Drink-Less programme for use in nurse-led health promotion.

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Changes in receptionists' attitudes towards involvement in a general practice-based trial of screening and brief alcohol intervention

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SUMMARY

Background. Primary health care receptionists are increasingly expected to be involved in research. However, little is known about receptionists' attitudes to research or health programmes.

Aim. To examine changes in receptionists' attitudes, with different levels of training and support, towards involvement in a general practice-based trial of screening and brief alcohol intervention.

Method. Subjects were 84 receptionists, one per practice, who assisted in the implementation of a screening and brief alcohol intervention programme. Receptionists were randomly assigned to one of three conditions: control (no training or support), training alone, and training plus ongoing telephone support. Baseline and follow-up questionnaires were used to assess changes in receptionists' attitudes.

Results. Of 40 items that measured receptionists' attitudes to involvement in the programme, 70% had deteriorated after three months, 20% significantly so. There was no effect of training and support condition. Receptionists' and GPs' attitudes to research and health programmes conflicted.

Conclusion. Receptionists developed more negative views about involvement in research and health programmes over the three-month study period, regardless of level of training and support.

Keywords: practice receptionist; alcohol, health programmes, research, attitudes.

Introduction

PRIMARY health care receptionists have, to date, been the subjects of little research. Most of what has been published has focused on patients' attitudes towards receptionists, and tends to depict them in negative terms.¹⁻³ The receptionist is seen as an impediment or barrier to early consultation,³⁻⁶ particularly

for young adults and parents with dependent children.^{2,4}

Primary health care receptionists are, however, central to the operation of general practice, since they are the intermediaries through whom virtually all contacts with general practitioners (GPs) are made.² The receptionist is an important member of the primary health care team,¹ and is involved in a specialised and essential job under circumstances that are often difficult and sometimes unpleasant.⁷

While primary health care receptionists' duties have traditionally included running the appointment system, dealing with requests for home visits and repeat prescriptions, and other administrative tasks,¹ they are increasingly being asked to expand their workload, learn new skills, and take greater responsibility. For example, receptionists have been involved in the triage of patients,^{2,4,8,9} decontamination of instruments,¹⁰ basic nursing auxiliary tasks (urine testing, weighing and measuring patients, applying dressings),⁸ and general practice audit.¹¹ More recently, primary health care receptionists have been asked to be involved in research.¹²⁻¹⁵ Murphy *et al* have described the role of the receptionist as that of a 'gatekeeper', with the ability to influence research in a positive or negative way depending on their attitudes, beliefs, and practices.¹⁶

The aim of this study was to examine changes in receptionists' attitudes towards their involvement in a general practice-based trial of a screening and brief alcohol intervention programme in the United Kingdom (UK) and the influence of training and support on these attitudes. The study also compared receptionists' and GPs' attitudes towards the programme. This study was part of the UK arm of Phase III (Strand 3) of the World Health Organisation (WHO) Collaborative Study on Disseminating and Implementing Brief Alcohol Intervention in Primary Health Care.¹⁷

Method

Subjects were 84 receptionists, one per practice, from the Northern and Yorkshire region, who assisted GPs in implementing 'Drink-Less', a screening and brief alcohol intervention programme (designed in collaboration with receptionists¹⁸). Receptionists were recruited from the second stage of an earlier randomised controlled trial of strategies to increase dissemination and implementation of brief alcohol intervention on which sample size calculations were based.^{19,20} From the pilot and main study original random sample of 785 GPs, one per practice, who were approached by mail marketing, telemarketing, and personal marketing strategies, 354 GPs requested the brief intervention programme and were asked to implement it, and, of these, 141 agreed that they and their receptionists would use it for the three-month study period. Practices were stratified by marketing condition and were randomly allocated to three training and support conditions that consisted of written guidelines only (control), training alone (training), and training plus ongoing telephone support (training plus support).

Control condition (n = 47)

No training or support was offered to receptionists in this condi-

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tion. The programme, which contained written guidelines, was dropped off at reception without demonstration.

Training condition (n = 47)

Receptionists received one session of face-to-face training on how to implement the programme at their practices in this condition. Receptionists received no further support.

Training plus support condition (n = 47)

In this condition, receptionists received one session of face-to-face training on how to implement the programme at their practices, and fortnightly telephone calls to provide support in coping with refusals and negative responses from patients, coping with time constraints and workload, and integrating the programme into normal work routine.

Regardless of training and support condition, receptionists were asked to hand out and explain the alcohol use disorders identification test (AUDIT) to all patients aged 16 years and over attending study GPs. Patients took their completed questionnaire into the consultation where they were advised by the GP if appropriate to take part. Receptionists were also directed to keep a tally of patients who did not complete a questionnaire, place a sticker on the notes of patients who had been screened, and collate carbon-copies of patient screening questionnaires. All receptionists were telephoned two days after programme delivery to confirm data collection procedures. Training and support interventions were carried out by a trained researcher with social sciences background.

Each receptionist was asked to complete a baseline questionnaire, contained within the Drink-Less programme, prior to implementation. A reply-paid envelope was supplied for return of the questionnaire. Follow-up questionnaires were mailed to all receptionists three months after implementation of the programme and were collected during a practice visit at which researchers debriefed the receptionists and provided written feedback on the study.

Questionnaires were developed and piloted by the WHO Collaborative Study Group and are available on request from one of the authors (CAL). Baseline questionnaires collected sociodemographic and employment data and follow-up questionnaires collected feedback on the programme. However, both questionnaires contained a multidimensional attitudinal scale consisting of 40 items on a seven-point Likert scale (with neutral at mid-point) to determine changes in receptionists' attitudes during the course of the programme. The attitudes and beliefs measured in the questionnaire were: interest and involvement in health programmes and research, value of alcohol intervention in general practice, receptionists' perception of their role in the practice, and organisational issues including job involvement and dealing with workload and stress.

General practitioners who implemented the programme also completed baseline and follow-up questionnaires. These data are reported in detail elsewhere;¹⁷ however, some findings from GP questionnaires will be reported here, where they provide a direct contrast with receptionists' attitudes.

Data from questionnaires were entered into SPSS for Windows 3.1. Descriptive statistics were used to summarise sociodemographic and employment data. Non-parametric statistics were used to analyse ordinal data from the Likert scales. Wilcoxon signed rank tests were used to analyse changes in attitude over the three-month study period, while Kruskal-Wallis tests were used to analyse differences in changes in attitude between training and support conditions. Statistical significance was set at 0.05.

Results

Response rate

Eighty-four (60%) practices actually used the programme; the distribution from the three training and support conditions was: control, $n = 23$ (27%); training, $n = 27$ (32%); training plus support, $n = 34$ (41%). Of 84 receptionists and GPs involved in the study, 62 (74%) and 69 (84%), respectively, returned a baseline questionnaire; 57 (68%) and 67 (80%), respectively, returned a follow-up questionnaire; and 47 (56%) and 56 (67%), respectively, returned a complete set of both questionnaires. Data are presented from 47 receptionists and corresponding GPs who returned both questionnaires.

Characteristics of receptionists

All receptionists were female with a mean age of 42 years (SD = 9.6). The majority (44%) were educated to 'O' level or equivalent and had previously been employed as a secretary or clerk (38%). Average length of service at the current practice was seven years (SD = 5.7) and most (70%) receptionists worked five days per week; however, 74% reported working part-time (fewer than 37 hours per week). The majority (90%) of receptionists had been trained in service, although 44% had attended a medical receptionists' course. Eighty-one per cent (81%) of receptionists had a written job description and, while the major duties were associated with general secretarial and reception tasks (84%), some had a more varied role including management (8%), medical assistance (4%), finance (2%), and ordering supplies (2%). The majority (90%) of receptionists worked in group practices with an average of four GPs (SD = 1.9). The average practice list size was 7615 patients (SD = 3771.8).

Attitudes and involvement in research and health programmes

One-quarter (25%) of receptionists had previously assisted GPs in implementing other health programmes; most commonly relating to cancer, diet and nutrition, and exercise. Prior to programme implementation, 50% of receptionists agreed that it would make their job more interesting and they would obtain satisfaction by participating in health programmes. Between 60% and 70% of receptionists agreed that they would develop new skills, experience more enjoyment in their work, and would like the increased variety of tasks involved in implementing health programmes. Nearly 90% of receptionists agreed that health programmes were important for the health of the community and reported that they enjoyed interacting with patients at their practice.

Changes in receptionists' attitudes during programme use

The 40 items that measure changes in receptionists' attitudes are summarised in Table 1, along with the percentage agreement at baseline and follow-up and level of significance. Overall, of the 40 items that measured receptionists' attitudes to involvement in the programme, 70% had deteriorated after the three-month study period (20% significantly so), 25% had improved, and 5% stayed the same. On average, the deterioration in attitude was characterised by a shift of two points on the seven-point Likert scale; i.e from 'agree' to 'disagree'. However, there were no significant differences in attitude change between training and support conditions.

Interest and involvement in health programmes and research. Of eight questions designed to measure receptionists' interest and involvement in health programmes and research, seven (87.5%) had deteriorated, five (62.5%) significantly so (Figure 1).

Table 1. Changes in receptionists' attitudes following implementation of a health programme.

Statement	% agree at baseline	% agree at three months	Wilcoxon signed rank test
<i>Interest and involvement in health programmes and research</i>			
It would make my job more interesting to help collect data for research (1)*	44	36	Not Significant Z = -1.151, P = 0.250
It would make my job more interesting to participate in programmes like this (2)	50	38	Significant Z = -2.202, P = 0.028
I think I would get a lot of satisfaction out of working on programmes like this (3)	46	32	Not Significant Z = -1.914, P = 0.056
Lifestyle programmes are important for the health of the community (4)	86	81	Significant Z = -1.984, P = 0.047
I like to get involved in activities at this practice that are different from my clerical tasks as a receptionist (5)	69	55	Significant Z = -2.215, P = 0.034
The opportunity to participate in patient education would enhance my enjoyment of my work (6)	64	46	Significant Z = -2.066, P = 0.039
I enjoy interacting with patients at this practice (7)	89	90	Not Significant Z = -0.495, P = 0.621
I think being involved with patient education programmes would help me to develop new skills (8)	60	48	Significant Z = -3.295, P = 0.001
<i>Value of alcohol intervention in general practice</i>			
I believe GPs are effective in helping patients to reduce the amount of alcohol that they drink	80	75	Not Significant Z = -1.759, P = 0.079
The effort involved in trying to treat people who have a drinking problem outweighs the positive outcomes	19	16	Not Significant Z = -1.648, P = 0.099
GPs have a responsibility to identify people who have a drinking problem	71	78	Not Significant Z = -1.299, P = 0.194
GPs have a responsibility to help patients overcome drinking problems	78	82	Not Significant Z = -0.098, P = 0.922
It is intrusive to question patients about their drinking habits	21	24	Not Significant Z = -0.411, P = 0.681
Advice on alcohol given to patients by GPs is not likely to be appreciated	17	18	Not Significant Z = -0.346, P = 0.729
GPs cannot help drinkers to cut down on their drinking	3	8	Not Significant Z = -1.546, P = 0.122
It is a waste of time trying to treat people who have a drinking problem	1	4	Not Significant Z = -1.703, P = 0.089
GPs should not ask patients about their drinking habits	2	0	Not Significant Z = -0.480, P = 0.631
Patients would not like to receive advice on their drinking habits from GPs	8	12	Not Significant Z = -1.018, P = 0.309
GPs are not effective in getting patients to change their lifestyle	5	4	Significant Z = -2.056, P = 0.040
<i>Receptionists' perception of their role in the practice</i>			
I would not like to hand out and explain lifestyle questionnaires as part of my work	27	30	Significant Z = -3.002, P = 0.003
It is not part of my role as a receptionist to participate in programmes like this	22	14	Not Significant Z = -0.421, P = 0.673
The tasks I am required to do are always clearly outlined by the GP(s) in this practice	79	77	Not Significant Z = -1.114, P = 0.265
I believe I play an important role in this practice	87	86	Not Significant Z = -0.715, P = 0.475
The GP(s) treat me as if I have an important role in this practice	78	69	Not Significant Z = -1.170, P = 0.242
My role in this practice is to assist the GP(s) to achieve their aims	95	94	Not Significant Z = -0.827, P = 0.408
I see my role as a receptionist as including the administration of education programmes for patients	60	55	Not Significant Z = -0.881, P = 0.378
My role as a receptionist is defined primarily by the GP(s) in this practice	82	88	Not Significant Z = -1.027, P = 0.305
I see my role as a receptionist as including the administration of research activities for the GP(s)	54	60	Not Significant Z = -0.390, P = 0.696
It does not bother me if the GP(s) here ask me to do things that are different from my usual task	92	92	Not Significant Z = -0.589, P = 0.556
My tasks as a receptionist are very clear and well defined	82	75	Not Significant Z = -1.430, P = 0.153
Decision making in this practice should be the exclusive right of the doctors	40	34	Not Significant Z = -1.274, P = 0.203
I feel that receptionists should have a lot of input into how this practice is run	62	62	Not Significant Z = -0.771, P = 0.441
<i>Organisational issues including job involvement and dealing with workload and stress</i>			
I have problems keeping up with the amount of work I have to do	36	34	Not Significant Z = -0.349, P = 0.727
I am happy to take on extra tasks when required	92	81	Not Significant Z = -1.228, P = 0.220
I often feel stressed when I am required to take on extra tasks	26	39	Not Significant Z = -0.995, P = 0.320
I have enough time to do what is expected of me	42	35	Not Significant Z = -0.783, P = 0.434
I am really a perfectionist about my work	77	63	Not Significant Z = -1.615, P = 0.106
I am very much involved personally in my work	88	81	Not Significant Z = -1.897, P = 0.058
I feel a strong sense of identification with this practice	84	75	Not Significant Z = -1.305, P = 0.192
I feel a sense of pride in being a part of this practice	95	88	Significant Z = -2.262, P = 0.024

*Numbers in brackets correspond to the numbers in Figure 1.

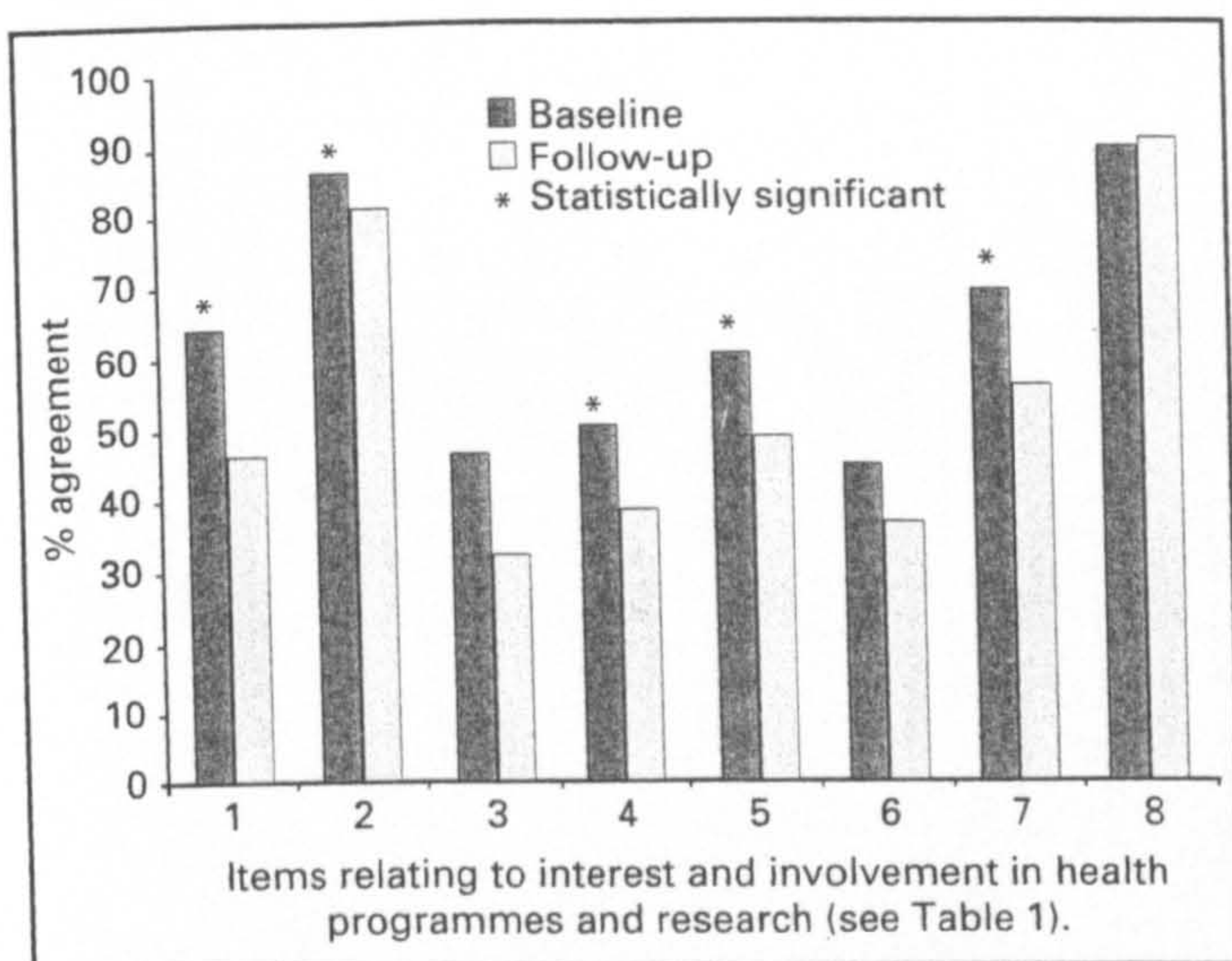


Figure 1. Eight statements relating to interest and involvement and the percentage of receptionists agreeing with that statement.

Value of alcohol intervention in general practice. Of eleven questions designed to measure whether receptionists felt it was worthwhile for the GP to intervene for alcohol, six (54.5%) had deteriorated at three months, one (9%) significantly so.

Receptionists' perception of their role in the practice. Of 13 questions that measured receptionists perception of their role in the practice, eight (61.5%) had deteriorated at three months, one (7.7%) significantly so.

Organisational issues including job involvement and dealing with workload and stress. Of eight questions that measured receptionists' attitudes to their job, seven (88%) had deteriorated at three months, one (12.5%) significantly so.

Experiences with the Drink-Less programme by receptionists

During the three-month study period, receptionists from the 84 participating practices screened 12 814 patients: an average of 153 (SD = 116) patients per practice. Only 2% of receptionists reported that they felt uncomfortable about asking patients to complete questionnaires, 2% reported that it was difficult to get patients to complete the questionnaire, and 74% reported that their role in the programme was important.

Fifty-seven per cent of receptionists reported that the Drink-Less programme was suitable for use in general practice compared with 62% of GPs. Fifty-two per cent of receptionists reported that the programme was demanding compared with only 38% of GPs. Over half of the receptionists (56%) reported that they should be paid extra for this type of work, but only 29% of GPs reported being prepared to pay to run such a programme. Only 11% of GPs reported that their experiences with the Drink-Less programme were negative, and all of the GPs who participated in this study concluded that they and their receptionists would be willing to participate in this type of programme evaluation again.

Discussion

Receptionists represent the interface between patients and other members of the primary health care team and, as such, can be vital to successful implementation of research programmes

involving patients. Clearly, receptionists were unhappy with their involvement in the Drink-Less programme and developed more negative attitudes, particularly with regard to interest and involvement in health programmes and research. Development of negative views were not related to level of training or support provided in the study.

The findings from this study were based on responses from 47 receptionists, who completed both baseline and follow-up questionnaires, out of 84 practices who used the Drink-Less programme: a response rate of 56%. Although these 47 receptionists represented only 13% of the 354 practices approached to use the programme, they were highly motivated having screened 12 814 patients, yet they developed negative attitudes.

Interestingly, the results of this study are inconsistent with the findings from the Australian arm of the WHO study.²² Carnegie *et al* found that, when no training and support was given, receptionists developed negative views about being involved in implementing research programmes. When training and support was provided, these negative effects were abolished. Perhaps this contradiction in findings is partly because of our sample size, which may have been too small to detect any significant difference between level of training and support provided. Another reason for these inconsistent findings is that most of the receptionists in the UK study worked part-time or in job-share situations, which made it particularly difficult to train them all in the intervention procedure.

Development of negative attitudes could be explained by the fact that many receptionists were not involved in the decision-making process. All research in primary care involves the important step of negotiating access to research settings or subjects, and getting this step wrong can lead to projects failing or being compromised.¹⁶

If research involves a general practice team, it is important to secure the support of all its members. It has been reported that, when GPs involve their staff in a decision about participation in research, receptionists gain greater satisfaction from their contribution to the study.¹³

Another reason for the development of negative attitudes may have been because of the subject matter of the intervention programme. Alcohol is a difficult subject to tackle, and perhaps a better response may have been elicited from receptionists involved in an alternative lifestyle area. Israel *et al* found pre-screening for trauma was much more acceptable to receptionists than asking patients about their alcohol consumption.²³

General practitioners and receptionists in this study held contrasting views regarding the appropriateness of the health programme and their willingness to be involved again. While over half of the receptionists felt they should be paid extra for this type of work, all of the GPs who participated in this study concluded that they and their receptionists would be willing to participate in this type of programme evaluation again.

Previously, most research in health programmes has been delivered under 'ideal' conditions to motivated individuals and resulting in large effect sizes. However, it is more realistic to evaluate programmes in the more challenging setting of everyday clinical practice.¹³ In addition, most research has focused on GPs.²⁴ If health programmes are to be successfully implemented in the future, then there is a need to focus on other members of the primary health care team.^{25,26}

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Patient and practitioner characteristics predict brief alcohol intervention in primary care

Eileen F S Kaner, Nick Heather, Jenny Brodie, Catherine A Lock and Brian R McAvoy

SUMMARY

Background: The effectiveness of an evidence-based health care intervention depends on it being delivered consistently to appropriate patients. Brief alcohol intervention is known to be effective at reducing excessive drinking and its concomitant health and social problems. However, a recent implementation trial reported partial delivery of brief alcohol intervention by general practitioners (GPs) which is likely to have reduced its impact.

Aim: To investigate patient-practitioner characteristics influencing brief alcohol intervention in primary care.

Design of study: Cross-sectional analysis of 12 814 completed Alcohol Use Disorders Identification Test (AUDIT) screening questionnaires.

Setting: Eighty-four GPs who had implemented a brief alcohol intervention programme in a previous trial based in the Northeast of England.

Method: GPs were requested to screen all adults (aged over 16 years) presenting to their surgery and follow a structured protocol to give a brief intervention (five minutes of advice plus an information booklet) to all 'risk' drinkers. Anonymised carbon copies of the screening questionnaire were collected from all practices after a three-month implementation period.

Results: Although AUDIT identified 4080 'risk' drinkers, only 2043 (50%) received brief intervention. Risk drinkers that were most likely to receive brief intervention were males (58%), unemployed (61%), and technically-trained patients (55%). Risk drinkers that were least likely to receive brief intervention were females (44%), students (38%), and university educated patients (46%). Logistic regression modelling showed that patients' risk status was the most influential predictor of brief intervention. Also, GPs' experience of relevant training and longer average practice consultations predicted brief intervention. However, personal characteristics relating to patients and GPs also predicted brief intervention in routine practice.

Conclusion: Interpersonal factors relating to patients and practitioners contributed to the selective provision of brief alcohol intervention in primary care. Ways should be found to remedy this situation or the impact of this evidence-based intervention may be reduced when implemented in routine practice.

Keywords: brief alcohol intervention; implementation; primary care.

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Introduction

EXCESSIVE alcohol consumption is a significant cause of ill health, social problems, and loss of economic productivity in the United Kingdom each year.¹⁻⁴ However, excessive drinking is responsive to early detection and brief intervention by primary health care professionals.⁵ A number of randomised controlled trials of brief alcohol intervention have shown that, in comparison with controls, excessive drinkers receiving between 5-15 minutes advice from primary health care workers will reduce alcohol consumption by around 25%.⁵⁻¹⁰ Owing to the good evidence of its efficacy, recent research on brief alcohol intervention has focused on identifying effective and cost-effective ways of promoting its uptake¹¹ and implementation in primary health care.¹²

The effectiveness of an evidence-based health intervention in practice depends on it being delivered consistently and appropriately to patients. However, a recent implementation trial of brief alcohol intervention in primary health care found that only half of the excessive drinkers identified actually received intervention.¹² This finding suggests that the potential impact of brief alcohol intervention could be substantially reduced when implemented in routine practice. Recent research on mental health care has reported that general practitioners' (GPs') decisions about intervention were influenced by non-clinical patient factors.¹³ Moreover, GP characteristics are known to influence attitudes to and involvement in preventive care.^{14,15} Thus the aim of this study was to investigate possible patient and practitioner characteristics that might influence provision of brief alcohol intervention in primary health care.

Method

Patient screening data were provided by 84 GPs, one per practice, from across the Northern and Yorkshire regions of England. These GPs had agreed to implement a screening and brief alcohol intervention programme in their practice for three months. GPs were subjects in the pilot and main study of a two-stage randomised controlled trial and detailed methods have been reported previously.^{11,12} GPs were requested to screen all adults (aged over 16 years) presenting to their surgery and follow a structured protocol to give a brief intervention (five minutes of advice plus an information booklet) to all 'risk' drinkers. Anonymised carbon copies of the screening questionnaire were collected from all practices after a three-month implementation period.

The screening tool

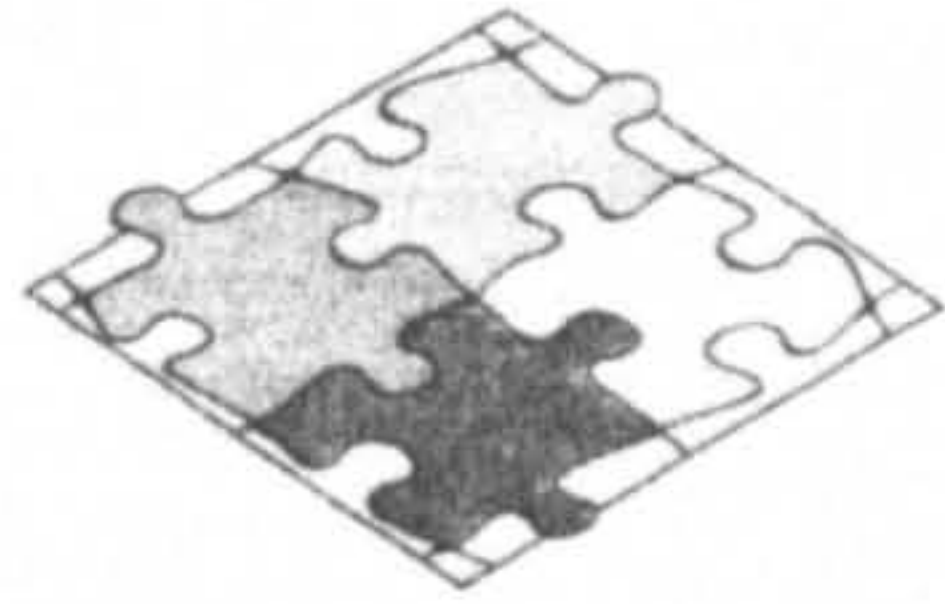
The screening questionnaire was the Alcohol Use Disorders Identification Test (AUDIT)¹⁶ which is a 10-item questionnaire

HOW THIS FITS IN*What do we know?*

Brief intervention in primary care is effective in reducing excessive drinking, which underpins a wide range of health and social problems. However, the full impact of this evidence-based intervention depends on it being consistently delivered by GPs to appropriate (at risk) patients.

What does this paper add?

Brief alcohol intervention in primary care was influenced by a combination of patients' risk status and structural factors such as longer average practice consultations, and by personal characteristics of patients and GPs. Future research should focus on evaluating interventions in routine practice settings and investigate both clinical and non-clinical factors influencing intervention delivery.



designed specifically for use in primary care. At a cut-off point of 8 out of a possible total score of 40, AUDIT identifies risk drinking with a sensitivity of 92% and a specificity of 94%.¹⁶ Risk drinking consists of both hazardous consumption, which incurs increased risk of psychological or physical harm¹⁷ and harmful consumption, which is defined by the presence of physical or psychological symptoms.¹⁸ AUDIT is reported to be less sensitive at identifying risk drinking in patients from rural areas,¹⁹ in women,²⁰⁻²² and in the elderly.²³ Since this study adopted a population screening approach, which often requires increased instrument sensitivity,²⁴ AUDIT cut-off points were lowered to 6+ for women and 7+ for men to identify risk drinking.

In addition to the 10 alcohol-related items, the screening questionnaire contained four questions relating to patients' age, sex, educational attainment, and occupation. Self-reported data on occupation were coded according to the Registrar General's Social Class based on Occupation classification.²⁵ Patients who were not part of the working population were coded using five extra categories: homemaker, unemployed, students, long-term sick, and retired. GPs' personal characteristics were self-reported using an evaluation questionnaire which was given to GPs before the implementation trial began and which was returned to the study centre in a reply-paid, addressed envelope.

Data analysis

Data were analysed using SPSS for Windows 10.5.²⁶ Statistical analysis initially took the form of descriptive statistics plus a crude analysis of relationships between variables, χ^2 tests for categorical data. The second phase of analysis comprised the development of a logistic regression model, based on the crude analysis and theoretical criteria about independent variables that might influence brief intervention (outcome 'yes' or 'no'). A direct logistic regression model was utilised, since there was no specific hypothesis as to the order or importance of predictor variables. 'Goodness-of-fit' of the model was calculated using the model χ^2 statistic.²⁷ Statistical significance was accepted at $P < 0.05$ and odds ratios (ORs) plus 95% confidence intervals (95% CI) were calculated.

To account for possible misclassification of patients' risk drinking status as measured by AUDIT, preliminary logistic regression modelling considered AUDIT both as a continuous variable and as a binary variable, indicating risk as at its original cut-off point and at the recommended cut-off points (Table 1). Other independent variables were loaded into each model as follows: patients' age (continuous variable), sex, higher education status (binary variables), and occupation (categorical variable with skilled manual workers as the reference category); GPs' age, consultation length (continuous variables), sex, solo practice status, membership of the Royal College of General Practitioners, and direct training in brief intervention (binary variables). Possible interaction effects between patients' and GPs' age and sex were also entered into the model.

While each GP may have had a particular pattern of intervention behaviour, it was felt that the large number of GPs and the large mean number of patients per GP made it preferable to include both sets of characteristics as explanatory variables in the analysis. The alternative, a random effects model for GP influence, was regarded as being too complex to be justifiable given the GP sample size ($n = 84$). Moreover, it was felt that important effects were likely to be detected by the approach adopted.

Logistic regression model selection

There was a great deal of consistency in the number and direction of significant predictors in the logistic regression models produced when the AUDIT score was considered as a continuous or a binary variable. However, the relatively small goodness-of-fit χ^2 for Model 2 suggested that it provided the best interpretation of the data and so these results are reported.

Results

Most of the GPs in the study were male (79%, $n = 66$), with a mean age of 42 years (SD = 9) and a mean time spent in general practice of 12 years (SD = 8). Of 69 GPs who reported a practice type, most worked in group practices (87%, $n = 60$) with a mean of four GP principals (SD = 2) per practice. GPs reported a mean personal list size of 1887 patients (SD = 613) and a mean of 147 consultations (SD = 52) per week in the surgery. The mean consultation length reported by GPs was 9.7 minutes (SD = 3). Of 66 responses concerning RCGP status, 56% ($n = 37$) reported membership or fellowship. Finally, 73% ($n = 61$) of GPs had experienced direct training in the brief intervention protocol in addition to written guidelines, while 27% ($n = 23$) had received written guidelines only.

The GPs screened 12 814 patients during the three-month study period; a mean of 151 patients (SD = 115) per GP. In addition, GPs reported that just 3% (SD = 1.7) of patients declined to complete the screening questionnaire. Of 77 GPs who outlined how they assessed patients' risk drinking status, 90% ($n = 69$) used the AUDIT cut-off points recommended in the study (6+ women, 7+ men), 4% ($n = 3$) used the single cut-off point of 8+ and 6% ($n = 5$) used a weekly consumption total. A total AUDIT score was available on all screening questionnaires and patient characteristics were self-recorded as follows: 99% ($n = 12 705$) reported their

Table 1. Properties of preliminary logistic regression models with AUDIT score as a continuous or a binary variable indicating drinking risk status.

	Model 1 Continuous variable (score 0–40)	Model 2 Binary variable (original cut-off point: 8+)	Model 3 Binary variable (recommended cut-off points: 6+ females, 7+ males)
Cases accurately predicted	84.96%	84.94%	83.70%
Goodness of fit χ^2 (df = 8)	90.68, $P < 0.001$	13.94 ^a	36.53, $P < 0.001$
AUDIT odds ratio	1.49 per unit increase	15.60	23.20
95% CI for AUDIT odds ratio	1.46–1.53	13.46–18.09	19.72–27.28
Number of significant predictors	8	8	8

^aNot significant.

sex; 99% ($n = 12\ 679$) reported their age; 94% ($n = 12\ 014$) reported their current occupation; and 84% ($n = 10\ 708$) reported their highest educational attainment.

Overall, 4080 (32%) patients were risk drinkers. Of these, 2043 (50%) received brief intervention consisting of structured advice ($n = 1862$, 46%) and/or alcohol-related literature ($n = 1085$, [27%]). Moreover, 499 (6%) patients who were non-risk drinkers received brief intervention, most obtaining advice ($n = 449$, 5%) and some the alcohol-related literature ($n = 99$, 1%). Figure 1 shows the receipt of brief intervention by total AUDIT score. Table 2 shows the breakdown of patients and risk drinkers by socioeconomic status

groups, and the final column of this table reports the proportions of risk drinkers who received brief intervention.

There was a significant difference between proportions of risk drinkers who received brief intervention on the basis of their sex ($\chi^2 = 82.9$, $df = 1$, $P < 0.001$), occupation ($\chi^2 = 59.8$, $df = 10$, $P < 0.001$) and educational attainment ($\chi^2 = 15.1$, $df = 4$, $P = 0.004$). Brief intervention was received by 58% of male risk drinkers compared with 44% of female risk drinkers. Unemployed risk drinkers were most likely to receive brief intervention (61%) while student risk drinkers were least likely to receive brief intervention (38%). Risk drinkers who were technically trained (55%) were most like-

Table 2. Numbers and proportions of patients ($n = 12\ 814$) by socioeconomic status group who were risk drinkers and who received brief intervention.

Patient characteristics	Total sample %	Risk drinkers %	Brief intervention %
Sex			
Males	4569 (36)	1837 (40)	1065 (58)
Females	8136 (64)	2239 (28)	977 (44)
Occupation			
I professionals	398 (3)	156 (39)	81 (52)
II managers	1338 (11)	577 (43)	305 (53)
IIIN skilled non-manual	1619 (14)	665 (41)	325 (49)
IIIM skilled manual	1808 (15)	834 (46)	466 (56)
IV semi-skilled	645 (5)	284 (44)	140 (49)
V unskilled	442 (4)	155 (35)	61 (39)
Homecarer	2023 (17)	368 (18)	155 (42)
Unemployed	799 (7)	322 (40)	197 (61)
Student	454 (4)	243 (54)	93 (38)
Chronic sick	110 (1)	31 (28)	17 (55)
Retired	2378 (20)	252 (11)	126 (50)
Education			
Primary	1456 (14)	325 (22)	176 (54)
Some secondary	1447 (14)	326 (23)	175 (54)
All secondary	4144 (39)	1445 (35)	723 (50)
Technical	1831 (17)	721 (39)	396 (55)
Tertiary	1830 (17)	717 (39)	328 (46)
Age group (years)			
16–19	521 (4)	273 (52)	143 (52)
20–29	2133 (17)	1145 (54)	582 (51)
30–39	2407 (19)	988 (41)	492 (50)
40–49	2243 (18)	820 (37)	407 (50)
50–59	1987 (16)	490 (25)	247 (50)
60–69	1817 (14)	245 (13)	117 (48)
70+	1571 (12)	86 (5)	45 (52)

ly to receive brief intervention in contrast to those with a university education (46%). There was no significant difference by age group in proportions of risk drinkers receiving brief alcohol intervention.

The logistic regression model describing the relationship of patient and practitioner variables to the delivery of brief intervention is reported in Table 3.

Patients' risk drinking status, as measured by total AUDIT score, was clearly the most influential predictor of brief intervention. Thus the odds of receiving brief intervention increased by a factor of 15 for risk drinkers compared with non-risk drinkers. There was a weak effect of patients' age, in that increased age was associated with decreased odds of brief intervention. However, patients' sex did not independently predict brief intervention. University educated patients had a 29% reduced odds of brief intervention compared with non-university educated patients. Furthermore, patients' occupation was a highly significant predictor of brief intervention ($P < 0.001$); in particular students, unskilled workers and homecarers had a 55%, 54% and 29% reduced odds of brief intervention compared with the reference group 'skilled manual workers'.

With regard to practitioner characteristics, neither the GPs' age nor sex was an independent predictor of brief intervention. However, solo GPs had a 26% increased odds of giving a brief intervention compared with GPs in group practices, and RCGP members had a 53% reduced odds of brief intervention compared with non-RCGP members. GPs who received brief intervention training plus written guidelines had a 76% increased odds of brief intervention compared

with GPs receiving written guidelines alone. Moreover, GPs reporting longer average practice consultations had an increased odds of delivering brief intervention compared with GPs reporting shorter average practice consultations. Thus a one-minute increase in average practice consultation length increased the odds of brief intervention by 12%.

Lastly, there were no significant interaction effects between patients' and GPs' age and/or sex.

Discussion

Despite the fact that GPs were requested to provide brief intervention to all risk drinkers identified by a screening process, only half of the risk drinkers in this study received an intervention. Risk drinkers who were most likely to receive brief intervention were male, unemployed, and technically trained patients while those who were least likely to receive brief intervention were female, students and university-educated patients. It was to be expected that patients' risk status, as measured by AUDIT, was the most influential predictor of brief intervention by GPs. Moreover, GPs' experience of relevant training and longer average practice consultations were positive predictors of brief intervention. However, it was less clear why other significant independent predictors of brief intervention included patients' age, educational attainment, and occupation, plus GPs' solo practice status and membership of the Royal College of General Practitioners.

Although the explanatory variables in the logistic regression modelling accurately predicted brief intervention in the

Table 3. Logistic regression (Model 2) predicting brief intervention ('yes/no').

Predictor	Odds ratio	95% confidence interval	P-value
Patient characteristics			
Risk drinking status	15.60	13.46–18.09	<0.001
Age (years)	0.97	0.95–0.99	0.02
Sex	1.14	0.54–2.38	0.72
University education	0.71	0.59–0.86	0.001
Occupational status^a			
Professional	1.19	0.82–1.73	0.33
Managerial	1.01	0.80–1.29	0.87
Skilled non-manual	1.03	0.82–1.29	0.79
Skilled manual	-	-	-
Partly skilled	0.80	0.59–1.09	0.17
Unskilled	0.46	0.31–0.69	<0.001
Homecarer	0.71	0.54–0.92	0.01
Unemployed	1.14	0.86–1.51	0.34
Student	0.45	0.32–0.65	<0.001
Sick	0.79	0.39–1.61	0.53
Retired	0.76	0.57–1.02	0.07
Practitioner characteristics			
Age (years)	1.01	0.99–1.03	0.20
Sex	1.12	0.72–1.72	0.60
Solo practitioner	1.26	1.03–1.53	0.02
Member/Fellow of RCGP	0.47	0.40–0.56	<0.001
Brief intervention training	1.76	1.47–2.11	<0.001
Consultation length (minutes)	1.12	1.09–1.16	<0.001
Interaction effects			
Age patient x Age GP	1.00	0.99–1.00	0.35
Sex patient x Sex GP	0.99	0.71–1.37	0.98
Age patient x Sex GP	0.99	0.98–1.00	0.45
Sex patient x Age GP	1.00	0.98–1.01	0.90

^aThe reference category used for occupational status was skilled manual workers.

majority of cases, even the 'best fit' model could not account for 100% of the variance. Other predictive factors may include the severity of patients' presenting problems, GPs' assessment of patients' motivation for behaviour change, and patients' interest in the subject under discussion. Unfortunately, this study could not assess the contribution of such factors, and future research should investigate this further.

A further inhibiting influence on brief intervention may have been the enhanced sensitivity of the screening questionnaire, particularly in borderline cases of risk drinking. Indeed, the best model to predict brief intervention delivery had drinking risk status defined by the original AUDIT cut-off point (8+) rather than the more sensitive cut-off points recommended in this study. This finding was puzzling, since 90% of the GPs reported using the recommended cut-off points. Nevertheless, the bell-shaped distribution of brief intervention delivery shown in Figure 1 strongly suggested that instrument sensitivity was not a critical issue for GPs.

A clear strength of this study was the large cross-section of patients opportunistically screened by GPs and the low refusal rate reported for the screening process. These data confirm the value of simple questioning to identify alcohol problems in primary care²⁸ and the considerable impact that GPs could make in terms of early detection and management of risk drinking in the population. Moreover, most routinely presenting patients were willing to answer a brief questionnaire about lifestyle behaviour, even though this may not have been (obviously) related to their reasons for consulting the doctor. However, it was evident that personal factors, unrelated to patients' risk drinking status, influenced brief intervention in routine practice. Recent research has shown that mental health care by GPs was influenced by patient non-clinical factors, such as ethnicity and home ownership status, regardless of clinical need.¹³ Furthermore, it has been reported that GPs are less likely to discuss preventive care with higher socioeconomic status patients²⁹ despite the fact that patients from lower status groups may receive less time in consultations.³⁰ More research within primary care consultations is needed to unravel the relative contribution of practitioner (supply) or patient (demand) factors in selective provision of health care interventions.

GPs have reported anxiety about discussing lifestyle, and particularly alcohol, issues with patients for fear of provoking negative reactions.^{31,32} However, a recent survey found that most GPs felt they should be involved in promoting low-risk drinking and patient resentment was the lowest ranked disincentive for this work.³³ Patients themselves report concern about lifestyle issues and that they would welcome counselling,³⁴ although one survey reported a discrepancy between patient expectations of lifestyle counselling and their perception of GPs' interest in such issues.³⁵ More recent work has suggested that patients regard lifestyle enquiry as legitimate but only within certain limits, such as relevance to their concerns about health.³⁶ In the latter study, although most patients welcomed lifestyle advice, nearly half of them did not want advice about smoking or drinking.³⁶ Finally, a study of women from lower social classes found that about a quarter were not in favour of lifestyle counselling and these women tended to be less well edu-

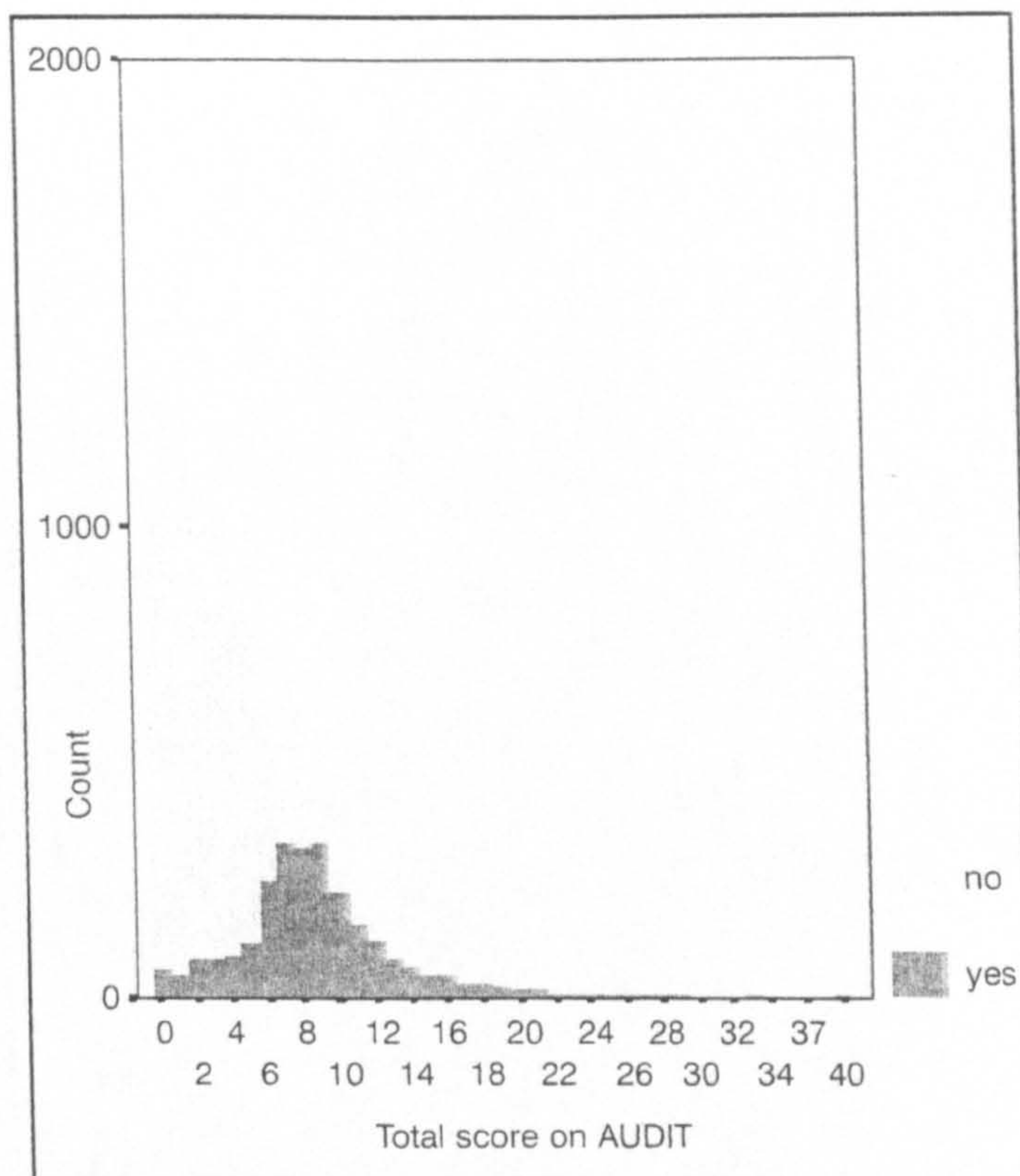


Figure 1. Receipt of brief intervention by patients' total AUDIT score.

cated than the rest of the sample.³⁷ Differential interest in lifestyle issues by patients may reflect contrasting views about determinants of health; since patients from higher social classes stressed the importance of smoking, diet and exercise on health, while patients from lower social classes emphasised factors such as housing, unemployment, income and pollution.³⁷

Whether the selective intervention found in this study was owing to GPs, patients or an interaction between both parties, it is clear that the reported effectiveness of brief alcohol intervention⁵⁻¹⁰ is likely have been reduced in this routine practice setting. Research aimed at implementing evidence-based health care may need to take account of differential delivery in practice. It is also possible that published effect sizes for brief alcohol intervention may be over-optimistic owing to a focus on efficacy studies and biases introduced by selective recruitment and/or loss to follow-up in research trials.³⁸ More focus should be placed on the use of pragmatic trials when evaluating health-related interventions in primary care.

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A qualitative study of nurses' attitudes and practices regarding brief alcohol intervention in primary health care

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A qualitative study of nurses' attitudes and practices regarding brief alcohol intervention in primary health care

Background. Excessive alcohol consumption causes significant mortality, morbidity, economic and social problems in the United Kingdom (UK). Despite strong evidence for the effectiveness of brief intervention to reduce excessive drinking in primary health care, there is little indication that such intervention routinely occurs. **Aims.** This study aimed to explore primary health care nurses' attitudes and practices regarding brief alcohol intervention in order to understand why it is underexploited.

Methods. The study design was qualitative, using a grounded theory approach to data collection and analysis. Semi-structured in-depth interviews were conducted with 24 nurses from practices that had previously been involved in a General Practitioner (GP) led brief alcohol intervention trial in the North-east of England. A combination of convenience and purposive sampling was used to recruit subjects and gain a broad range of perspectives on issues emerging from ongoing data-analysis until data saturation occurred.

Results. It was clear that although primary health care nurses have many opportunities to engage in alcohol intervention, most have received little or no preparation for this work. This has left nurses at a disadvantage as alcohol consumption is a confusing and emotive area for both health professionals and patients. An analysis of factors influencing nurse involvement in alcohol intervention outlined a requirement for clear health messages about alcohol, training in intervention skills, facilitation to enhance confidence regarding intervention and support to help deal with negative patient reactions.

Conclusions. As current health policy is to encourage, sustain and extend the health promotion and public health role of primary care nurses, more attention should be given to providing them with better preparation and support to carry out such work.

Keywords: primary health care, nurses, alcohol, brief intervention, qualitative research.

Background

Excessive alcohol consumption is a major source of mortality, morbidity, economic and social problems in the United Kingdom (UK) (Anderson *et al.* 1993). Each year, excessive drinking accounts for 28 000 deaths, 20–30% of all accidents, 65% of suicide attempts, 60–70% of domestic assaults by men and 50% of child protection cases (Alcohol Concern 2000). Excessive alcohol consumption is also the second most common proven cause of cancer (Austoker 1994). Economic costs for the UK related to alcohol consumption are reported to be more than £2 billion annually, with 8 million working days lost each year (Austoker 1994).

Primary health care professionals are particularly well placed to intervene in excessive drinking because of the large proportion of the population who access them (Fry 1980, Fraser 1992). In addition, excessive drinkers present to primary health care twice as often as other patients and constitute approximately 20% of a practice list (Anderson 1985). In particular, primary health care nurses have a relatively high contact exposure to patients; a study of two practices reported that 13 898 patient consultations were carried out by six practice nurses during an 8 month period and the mean consultation lengths were 25.7 and 20.6 minutes (Jeffreys *et al.* 1995). Moreover, most nurses in primary health care currently record information about alcohol consumption including: health visitors and district nurses (Calnan *et al.* 1994, Sourtzi *et al.* 1996); community psychiatric nurses (CPNs) (Roman 1996); and midwives (Murphy 1996).

Excessive drinking is responsive to early detection and brief intervention particularly in primary health care (Freemantle *et al.* 1993). To date, most brief alcohol intervention research has focused on GP-led intervention although there is strong circumstantial evidence to suggest that nurses are also effective at reducing excessive drinking in primary health care (Babor & Grant 1992, Israel *et al.* 1996, Fleming *et al.* 1997) and in other community settings (Werch *et al.* 1996). However, it is well recognized that the potential of primary health care professionals to reduce the prevalence of alcohol-related problems contrasts sharply with practice (Rowland & Maynard 1989, Rydon *et al.* 1992, Weller *et al.* 1992, Rush

et al. 1994, Gerace *et al.* 1995, Arthur 1997). Indeed a recent survey in England and Wales reported that practice nurses are a greatly under-utilized resource for screening and alcohol intervention work as they currently detect low numbers of excessive drinkers (mean 3.1 per month) and intervene with even fewer (Deehan *et al.* 1998).

Nurses typically receive little education and training about alcohol issues (Mackereth 1995). They often have negative attitudes about patients with alcohol-related problems (Brown & Waybrant 1988) and they lack confidence and experience in caring for patients with such problems (Brown *et al.* 1997). Indeed, nurses' most common treatment response to alcohol-related problems is to refer patients on to other health professionals or services (Rassool 1993). These findings are at odds with nurses' reported enthusiasm for health promotion work and belief that they are effective health educators (Le Touze & Calnan 1996). It is unclear from the above surveys why primary health care nurses have developed such negative views about alcohol-related issues.

The study

Aim

This study aimed to examine primary health care nurses' attitudes to alcohol intervention, including perceived barriers and facilitating factors, which influence their involvement in this area of work. The study is part of a larger programme of research aimed at promoting brief alcohol intervention by nurses in primary health care.

Methods

The overall study design was qualitative using a grounded theory approach to data collection and analysis (Glaser & Strauss 1967). Although one-to-one interviews were the main data collection method, there were four occasions where nurse subjects wished to be interviewed with a colleague and so these interviews were carried out with nurse-pairs.

All interviews took place at the nurses' general practice, which were based in the North-east of England. Data

collection took place between July and September 1998. Interviews lasted between 30 minutes and 1 hour and their content was recorded via audio-tapes.

Recruitment

Over the course of the study a letter, signed by one of the authors/interviewer (CAL), was sent to a total of 28 nurses, one per practice, inviting them to participate in the study. In addition, nurses received a project information sheet giving details of the study team, why the nurses' help was required, how the interviews would proceed and how the information would be handled and ultimately reported. At this stage, GPs were sent a letter to inform them about the study being carried out in their practices. Nurses were subsequently telephoned by CAL to gain their consent to participate in the interviews. Out of the 28 nurses approached, 20 agreed to take part, five nurses declined to be interviewed, two had resigned and one practice was uncontactable. However, four additional nurses joined a practice colleague to be cointerviewed and so 24 nurse-subjects took part in the study.

Sample

The sample consisted of nurses from practices that had previously been invited to become involved in an implementation trial of GP-led brief alcohol intervention (Kaner *et al.* 1999, Lock *et al.* 1999). All nurses had therefore used or examined brief alcohol intervention materials. A combination of convenience and purposive sampling was used to recruit subjects. An initial convenience sample consisted of 10 nurses who had become directly involved, via medical colleagues, in the previous implementation trial. However, as the study progressed this sample was supplemented with a further 14 nurses who were purposively sampled to provide a range of new perspectives on issues emerging from the ongoing analysis. Purposive sampling aimed to achieve broad subject variation on the basis of nurses' age, experience in primary health care, practice type and practice involvement with a brief alcohol intervention programme (see Table 1). After 20 interviews involving 24 nurses, no new issues were emerging from the interviews and so data saturation was judged to have occurred.

Table 1 Distribution of sampling criteria in nurse subjects

Subject*	Age of nurse	Years in primary care	Practice location	Number of GPs	Experience of brief alcohol intervention†
1	44	7	Urban	3	None
2	40	9	Urban	3	Low
3	35	10	Rural	2	Low
4	42	9	Urban	7	None
5a	48	15	Rural	3	Low
5b	52	13	Rural	3	Low
6	57	9	Rural	3	Low
7	30	2	Urban	2	Low
8	32	3	Urban	1	None
9	43	20	Rural	3	High
10	52	20	Mixed	7	High
11	54	9	Urban	6	Medium
12	31	9	Urban	3	Low
13a	52	13	Mixed	4	High
13b	49	7	Mixed	4	High
14	41	5	Mixed	1	Medium
15	39	6	Urban	1	High
16a	46	24	Urban	5	Medium
16b	51	9	Urban	5	Medium
17	52	10	Rural	4	Medium
18	53	10	Mixed	6	High
19a	37	6	Urban	6	Medium
19b	35	8	Urban	6	Medium
20	43	14	Rural	1	None

*Each subject's number reflects the order in which they were interviewed (a & b denote two nurses from one practice).

†Experience of the brief intervention programme was categorized as follows: none = not used; low = used with 1–50 patients; medium = used with 51–150 patients; high = used with 151–600 patients.

All nurses were female and carried the title and role of practice nurse. However three nurses had also completed nurse practitioner training, three were registered midwives and one was a trained district nurse. The age range of subjects was 30–57 years and experience of working in primary health care ranged from 1 to 24 years. Nurses were from solo and group practices based in urban, rural and mixed urban/rural locations. Nurses also had a range of experience in implementing a brief alcohol intervention programme.

Data collection

Interviews

Semi-structured interviews were based on a flexible topic guide, which highlighted a number of issues considered to be relevant to the study (available on request). The initial topic guide was developed from preliminary interviews with 12 purposively sampled key informants who were selected for their knowledge and experience of nursing policy and practice. The topic guide prompted nurses to discuss their attitudes to and practices regarding alcohol intervention in primary health care and to identify current barriers and facilitating factors influencing such work.

All interviews were carried out by CAL who has social sciences training and several years experience of working with primary health care professionals and brief alcohol intervention. The interviewer was introduced as a Research Associate from the University of Newcastle upon Tyne, UK and was already known to the majority of interviewees as a result of their involvement in a previous trial (Kaner *et al.* 1999, Lock *et al.* 1999). This experience helped the interviewer establish good rapport with nurse interviewees, which was demonstrated by the full and frank exchanges that occurred during the interviews.

Data management and analysis

Audio-taped data were transcribed verbatim, by professional transcribers, as soon as possible after each interview. Typed transcripts were then reviewed by the interviewer to check that meaning had not been lost during the transcription process and to respond to any queries regarding unclear or inaudible words.

Because of limitations of time and resource, the interviewer and the main data analyst (EFSK) were different individuals. However, this possible weakness was acknowledged at the outset of the study and was limited by a combination of open access to the audio-tapes, ongoing review of interview transcripts and regular discussion of the findings from data analysis. Later, all nurses were sent a report containing the data analysis and they were invited to comment on the

interpretation of their views in order to elicit further data through challenges to the interpretation provided.

In accordance with grounded theory method data collection and analysis proceeded in an iterative fashion. Data management was carried out using the FRAMEWORK method (Ritchie & Spencer 1994) which provided a simple, systematic but comprehensive way of ordering, coding and categorizing a large volume of contextual data. FRAMEWORK uses case (interviewee) by theme matrices to focus analysis and produce a highly transparent data synthesis which, via case identification and page numbering in cells, enabled data segments to be easily relocated within the original transcripts. This method enabled comparative analysis both within cases (for example, contradictory views or experiences that individual interviewees might hold about an issue or experience) and between cases (such as contrasting views across interviewees that might be based on different personal, practice or experience characteristics).

Data analysis proceeded in several closely linked stages as follows: familiarization with the data by rereading transcripts; identification of recurrent/important topics/comments; development of a topic index; use of index to code data on transcripts; extension/elaboration of the topic index; coalescing of related topics into themes; construction of case by theme matrices; abstraction of data from transcripts onto the matrices; further collapsing/refinement of categories; interpretation of analysis into a narrative.

Ethical issues

As this qualitative study did not involve patients, access to records and names of past and present patients, local ethics committee approval was not required [Health Service Guidance HSG (97)23]. Nurses were under no pressure to take part. All interview transcripts were anonymised and treated in the strictest confidence. All direct identifying information was removed from the audio-tapes by giving each nurse a unique code number that related to her practice. This number was also used to attribute comments during analysis. Where two nurses were interviewed from one practice, each individual was given an additional letter for the purposes of identification. All tapes were stored in a locked drawer.

Findings

Problem relevance

All the nurses were involved to some extent in alcohol-related work in their practice. Some nurses 'glossed over' the issue and did little more than record consumption levels in patients' notes. Others went on to advise patients about the

implications of heavy drinking and ways of reducing consumption. Several nurses outlined that they would instigate physiological tests for heavy drinkers either to convince patients that there was an alcohol-related problem, to persuade patients that they need to reduce or to trigger referral to a GP. However, a final group of nurses worked in a more sophisticated way with excessive drinkers attempting to ascertain both the reasons for patients' heavy consumption and the impact alcohol was having on their lives.

Opportunities for intervention

There was a great deal of consensus concerning the wealth of opportunities to screen patients' alcohol consumption and to provide advice about excessive drinking in nurse practice. Respondents reported that they frequently asked questions about alcohol consumption at new patient registrations, in general health checks or well-person clinics and in specific clinics run for patients with hypertension, diabetes and coronary heart disease (see Box 1).

Role legitimacy

None of the nurses rejected the idea of their involvement in brief alcohol intervention. Indeed one nurse stated that this type of work was more a nurse role than the doctors' and

Box 1 Opportunities for asking about alcohol consumption

New patient registrations

It comes into play with new patient questionnaires as well and it comes into play with the diabetic clinic especially because obviously you're looking at the diet and the alcohol intake to keep their blood levels right (N12)

Basic health checks

Well it comes under the, if you're doing a basic health check it's there straight away, it's one of the questions asked, it comes along with the smoking and the alcohol, family history, diet and exercise and because we look at them as the risk factors towards disease so it's there and you're basically asking them how much they drink on average in a week and then you basically take it from there if they need any more advice (N2)

Well person clinics

Alcohol is always mentioned in general at the well person check, I always ask what their alcohol consumption was, like a weekly intake of alcohol amount (N3)

Chronic disease monitoring

If we're seeing patients with blood pressure problems then that's one of the things we'll always ask early on, how much alcohol do you drink, with all the health checks we ask that and certainly for diabetics, any of the heart patients again, it does tend to come up quite a lot yes (N15)

some clearly felt that a practice-based nurse was the appropriate person to deliver brief alcohol intervention. In addition, there did not appear to be any major problems regarding the acceptability of carrying out alcohol intervention work in practices as long as nurses did not appear to be singling out or 'victimising' patients.

Negative reactions

Nurses' descriptions of their own and of patient reactions to the subject of alcohol and drinking behaviour revealed it to be a highly emotive issue (see Figure 1). One nurse went as far as describing alcohol consumption as the hardest subject to tackle in practice as it was very easy to upset patients. Nurse perceptions about patient reactions to discussion about alcohol issues ranged from aggression, through embarrassment, lack of interest and apathy, to more positive responses where patients were 'reasonably straight' with nurses or even keen to discuss the issue. However, the majority of terms that nurses attributed to patients' reactions were negative. There were two dimensions – one related to aggressive responses and the other to embarrassment and guilt.

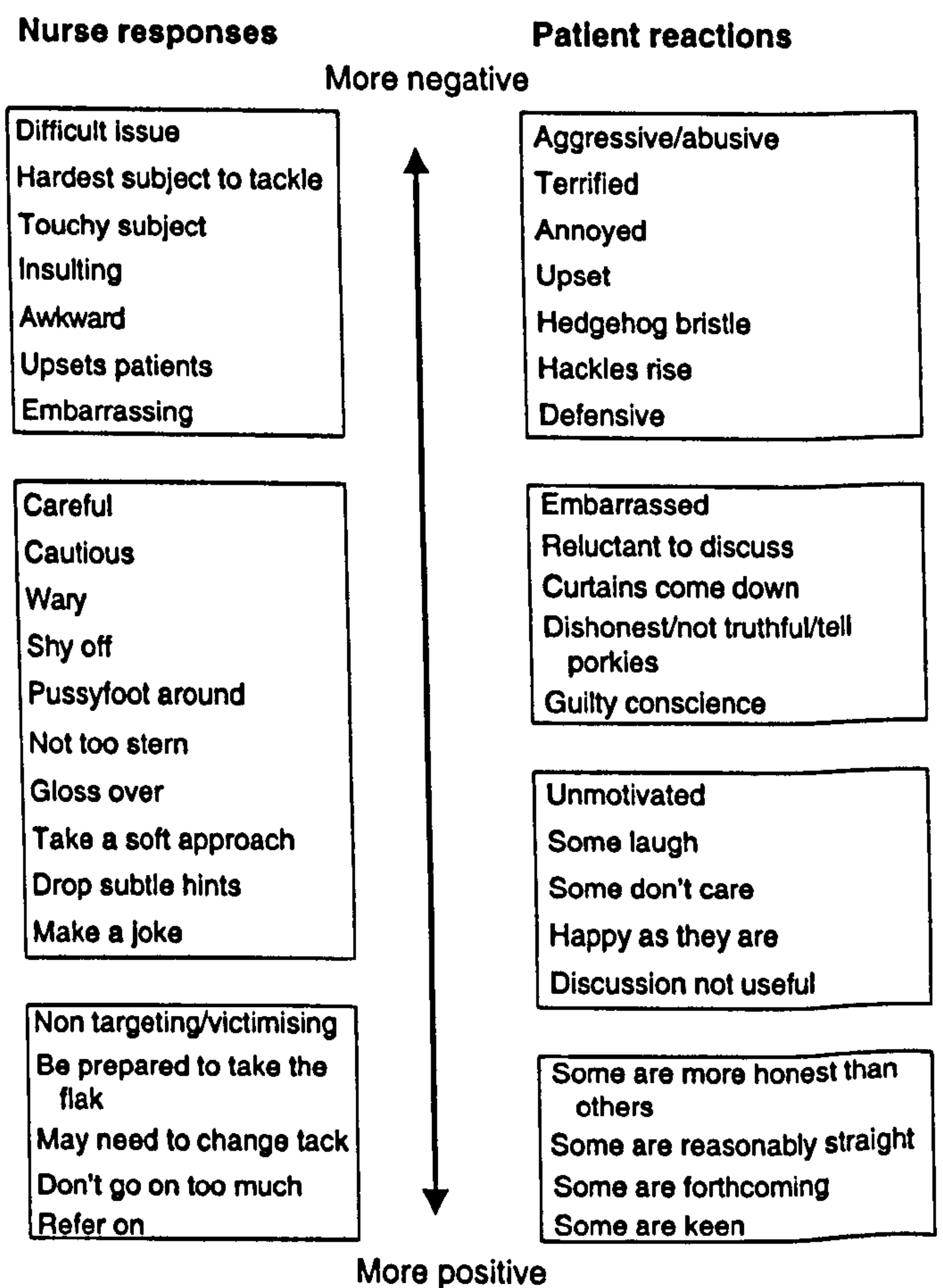


Figure 1 Nurse and patient responses to discussion about alcohol-related issues.

Some nurses felt that negative patient reactions to enquiry about alcohol consumption led them to disengage from discussion since patients' 'curtains could go down'. A further barrier to discussion about alcohol issues with patients, suggested by more than half the sample, was the view that patients were not truthful about their alcohol consumption. Although, in contrast, one nurse felt that her patients were more likely to be truthful about alcohol consumption than about smoking. Whether patients were truthful or not, it was clear that most nurses treated responses to questions about alcohol consumption with some distrust and then proceeded to give advice with a great deal of reservation.

It was difficult to establish if all of the above reactions were based on direct experience with patients or if some were an extrapolation of nurses' own discomfort about raising the subject of alcohol. However, several had experienced extreme reactions from patients to enquiry about alcohol. One nurse had a complaint made about her to the GP, after she had enquired about a male patient's alcohol consumption, which had made her cautious about the subject. Another had discussed alcohol with a severely hypertensive woman whose failure to return for blood pressure monitoring and subsequent death she attributed to her reaction to raising the topic. Another described having had patients walk out and become abusive to her. Two nurses had called the police on several occasions because a drunk patient had threatened people in the waiting room. The patient was eventually removed from the practice list. With such difficult experiences it is no surprise that some nurses did not feel enthusiastic about alcohol intervention work.

Confusion about alcohol issues

Another reason why nurses treated alcohol-related work with caution was that it was an issue fraught with confusion for both themselves and patients (see Box 2). Confusion arose in the area of standard drink units, the impact that home-based drinking had on the amounts that patients drank, the possible beneficial effects of drinking alcohol, particularly red wine, and recommended sensible drinking limits.

With regard to sensible drinking limits there was much discussion about what to recommend to patients. Over half the sample outlined that they recommended drinking limits of 14 units per week for women and 21 units per week for men and that these limits were in line with official guidelines. However, some nurses felt that the message about drinking limits had changed over recent years although there was confusion as to whether this change had come from the British Government or the World Health Organization. Several nurses were unsure about the correct message to convey to

Box 2 Confusions surrounding alcohol issue

Standard drink units

That's a common thing, that patients don't know what a unit of alcohol is, you know, if you sort of, you've got to explain that each half pint of alcohol is a unit or each glass of wine is a unit (N3)

One of the receptionists asked me last week if a pint of beer was one unit...it's confusing and it's the drinks the next day and the driving next day and things like that (N5a)

Home drinking

There's such a lot of drinking at home now isn't there, you know, more so than ever and obviously the measures are always doubles or trebles (N5b)

There's quite a lot of people who don't go out to drink, you know, they'll drink at home and I think the home measures tend to be rather on the generous side compared to pub measures and I think a lot of people don't realize that as well, they just think oh I'm having a gin and tonic and that's it you know but it's probably a triple gin and tonic when all is told (N3)

Benefits of drinking

I also think they read the paper one day and it says one thing and the next week another report comes out, red wine is good for you, you know, so, we'll drink bottles of the stuff because it's good for your heart, you know, or that beer was good for you and people don't take it in context. I think the advertising campaigns have a lot to be answered for and I think journalists need to look at the way they've presented the facts (N1)

People enjoy it, they see it as a social thing...I think people are under the impression that it's good for them, I find a lot of patients, oh well it's relieving my stress, things like that (N8)

Recommended drinking limits

I'm slightly puzzled on that one because they did change it, they put women's up to 21 and men's up to 28 and then they seemed to withdraw it didn't they...so I was a little confused, so I stick to 14 and 21...but in fact could you tell me are we recommending 21 and 28 or 14 and 21? (N19a)

We've of a lot of patients coming in and saying oh well, you know, we can drink 28 units now and we say we don't think you can, we haven't got any information about that yet so...so we are sticking to old limits because we feel that probably is a good sensible limit so that's what we are working from (N5b)

patients and some were clearly not convinced about what they called the 'new' guidelines whilst others were waiting for clarification. This lack of clarity about sensible drinking limits made it difficult for nurses to advise patients about 'low risk' alcohol consumption, particularly as some patients were obtaining information from misleading media sources. Consequently, several nurses outlined that they were pragmatic about the way that they discussed drinking guidelines, assuming some leeway with recommended limits and taking account of individual patient factors in their assessment.

Attitudes to drinking

A final reason for nurses' hesitancy about alcohol-related work was attributed to the social and coping functions that drinking appeared to have for patients (see Box 3), the widespread acceptance of heavy drinking particularly in North-east England and also because of their own use and enjoyment of alcohol (see Box 4).

Nevertheless, many nurses did express concern about excessive alcohol consumption and they often singled out particular patterns of risk drinking that caused them anxiety (see Box 5) such as binge drinking, weekend drinking, regular heavy consumption and home drinking. Nurses also identified different types of excessive drinkers that worried them such as older men and women, young people, students,

Box 3 Perceived functions of drinking

Social function

Maybe they might go out every night and have a couple of pints, they're socializing, they might think that well, if I just sat in the house, I'd be a hermit (N9)

Now we have a lot of, sort of, widows, no sorry, widowers, that's what fellows are, who go to the big club and they often get carried away with drinking without even knowing that they're doing this, so it's a matter of suggesting that they either drink halves instead of pints or they try a shandy or they try and put a lime and soda in from time to time, some way of still getting them out so that they can socialize with their mates, because it's important for fellows, but reduce the alcohol intake (N10)

I think some patients do drink through habit, their social life, young people in particular or men going out for a drink in the evening automatically have so many pints because their friends do...people's idea of drinking too much does vary a lot (N5a)

Coping mechanism

It's sort of valium of the masses, they say it's television, well for some people I think it's alcohol, and I know how I feel on a Friday night...I need this thing that relaxes me and says this is the weekend now (N1)

It's a coping mechanism for some people to, sort of, block things out (N6)

One guy was a teacher and he had a horrendously stressful job in a bad area and he was drinking quite a lot and he just wasn't realizing, just because his job was so pressurized and stressful, he was drinking like about 3 bottles of wine a night and he just wasn't, with his wife, but he just wasn't aware that how much over the week they were actually drinking, you just forget about it. (N7)

A lot of people use alcohol as a way of relaxing in an evening if they've got a stressful job and I think if you take that away you're likely to find that you've got far more problems with them, exploding at work and loosing their job and all sorts of things (N16b)

middle class people and businessmen and the unemployed. However, some nurses reported being more lax about excessive drinking with certain patients such as middle class patients, married couples and medical students or that they overlooked it in others such as the elderly. One nurse

Box 4 Nurses' drinking behaviour

I think a lot of middle class folk might sort of exceed that [recommended limits] quite happily with the bottle on a Saturday, bottle on a Friday between a married partner and that sort of thing, em I suppose I slightly, I'm fairly lax on what they drink because I enjoy wine, so from a personal point of view I wouldn't actually, unless somebody's needing alcohol every day, if someone's having a bottle at the weekend of wine and maybe one Gin and Tonic I wouldn't bat an eye lid at that quite honestly (N18)

I have to just think about my own alcohol intake, you know, and I could make changes myself, I certainly don't drink to excess but I like a glass of wine and I probably would have a glass of wine every night so why don't I take my own advice but I don't think that I drink in excess so you have to be flexible (N11)

I know how I feel on a Friday night, I like my 5 brandies, I like to have 5 brandies or 5 gin and tonics on a Friday night because I've had enough of Monday to Friday and I need this thing that relaxes me and says this is the weekend now (N1)

Oh gosh, I drink much more than that! (N19a)

Box 5 Nurses' concerns about excessive drinking

Patterns of drinking

Drinking alcohol in bulk, that's like a common thing really here, 'Oh I only drink on a weekend' but it's like three or four times what you should be drinking (N12)

And there's such a lot of drinking at home now isn't there, you know, more so than ever, and obviously the measures are always doubles or trebles (N5b)...I think certainly that made us very aware of what peoples idea of a glass of wine was in these great big goblets, well, you know, you say you'd have 3 glasses of wine, is that half a bottle of wine, oh no it's a bottle of wine, you know, and things like this. Somebody having home brew might tell us she was having a glass and I think it was a pint mug. (N5a)

Types of drinker

It's the blokes that tend to frighten me quite a bit with their huge consumption sort of Friday and Saturday nights, and Sunday lunch times, I tend to say to them if that's the case, you know, if you find that they're taking like 100 units a week in three sessions you think blimey, you know...It's these, the Geordie weekenders that bother me. I mean females as well don't get me wrong cause a lot of the younger girls do this don't they, have blitz's at weekends and I don't think they appreciate that they're just never giving their liver a chance to recover from week to week (N16b)

A lot of the young girl's idea of going out is to get drunk, I mean that's the idea of a Friday night, if they're not drunk it's been a very disappointing night (N13b)

explained that she was lax if patients had a similar drinking pattern to her or if she felt that the patients were in control over their lives. Overlooking excessive drinking in older people was attributed to the view that it was too late to be concerned about alcohol damaging their health.

Lack of training

Nurses training and experience, relating to general health promotion, varied widely. Some nurses had no such training while others had received what they termed the 'bog standard training' or particular courses like 'helping people change'. Lastly, some nurses had completed counselling training. Nurse practitioners had obtained a diploma or degree that included health promotion.

However most nurses reported receiving no specific training on alcohol issues and this lack of experience was given as a reason for alcohol being low on the nurses' list of priorities and becoming a routine 'tick in the box type of thing that was probably skipped'. By contrast, other nurses felt that alcohol was an issue of growing importance for those based in primary health care, particularly because heavy consumption appeared to be on the increase.

Conclusion

A positive finding of this study was that the nurses recognized that excessive alcohol consumption was a health issue of great relevance to their work in primary health care as it underpinned many of the symptoms causing patients to consult. In addition, there were many opportunities during routine practice to identify excessive drinking and to intervene with patients to help reduce alcohol consumption. It was also clear that the nurses felt that alcohol-intervention work was a legitimate part of their role in practice and, in particular, that it fitted well with the health promotion ethos of most primary health care nurses (Gott & O'Brien 1990, Delaney 1994).

However, pitted against these general factors that promoted alcohol intervention was a greater range of barriers that inhibited such work. Previous research has reported that GPs find alcohol intervention a difficult business (Thom & Tellez 1986) and nurses' current views about barriers to alcohol intervention closely mirrored GPs' earlier reports. These barriers include: fears about provoking negative reactions and losing rapport with patients (Thom & Tellez 1986); confusion about conflicting messages concerning alcohol consumption and health (Rush *et al.* 1995); reticence about tackling an issue with widespread social acceptance (Bruce & Burnett 1991); health professionals' own use of alcohol

(Saunders *et al.* 1990); inadequate training for this work (Durand 1994, Botelho & Richmond 1996); and a higher prioritization of other health issues over alcohol (Weller *et al.* 1992). It is clear that any future work aimed at developing alcohol intervention in primary health care will need to overcome these significant barriers that appear to be well established and widely perceived in this health service sector.

A recent systematic review, which focused on changing clinical practice, has recommended that an early diagnostic analysis should be carried out to identify factors that influence the proposed change so as to inform subsequent dissemination and implementation strategies (NHS Centre for Reviews & Dissemination 1999). Thus we constructed a schematic representation of the promoting, inhibiting and moderating factors, expressed by nurses in this study, which influenced alcohol intervention work (see central section of Figure 2). Strategies identified from the behaviour change literature were then mapped onto these factors to outline four interacting strands of multifaceted intervention to promote nurse involvement in alcohol intervention.

Implications for nursing practice and future research

The framework for an effective intervention to promote nurse involvement in alcohol-related work will need to be multifaceted and include steps that: *maximize promoting factors or incentives* via effective dissemination of evidence supporting intervention effectiveness, plus relevant materials/guidelines and implementation work to encourage usage of intervention materials; *minimize inhibiting factors or disincentives* via clarification of the impact of alcohol on health, provision of clear guidance regarding sensible drinking and by identifying credible persuasion 'product champions' to help prioritize alcohol issues; *enhance existing abilities* via facilitation to increase nurse confidence concerning intervention with patients and education to promote an evidence-based approach to nurse practice; and *increase capacity for intervention* via specific skill-based training on assessment of alcohol problems and intervention techniques. Such a multifaceted intervention is currently being evaluated in an implementation trial of nurse-led screening and brief alcohol intervention in primary health care.

Finally, moderating excessive alcohol consumption is an effective area of lifestyle intervention work that can be used in primary health care to prevent health problems in the population (Freemantle *et al.* 1993). A great deal of research has previously been carried out focusing on GPs' role in this work and the focus has begun to swing to nurses working in primary health care taking a more active role (Deehan *et al.* 1998). However, this study has shown that primary health

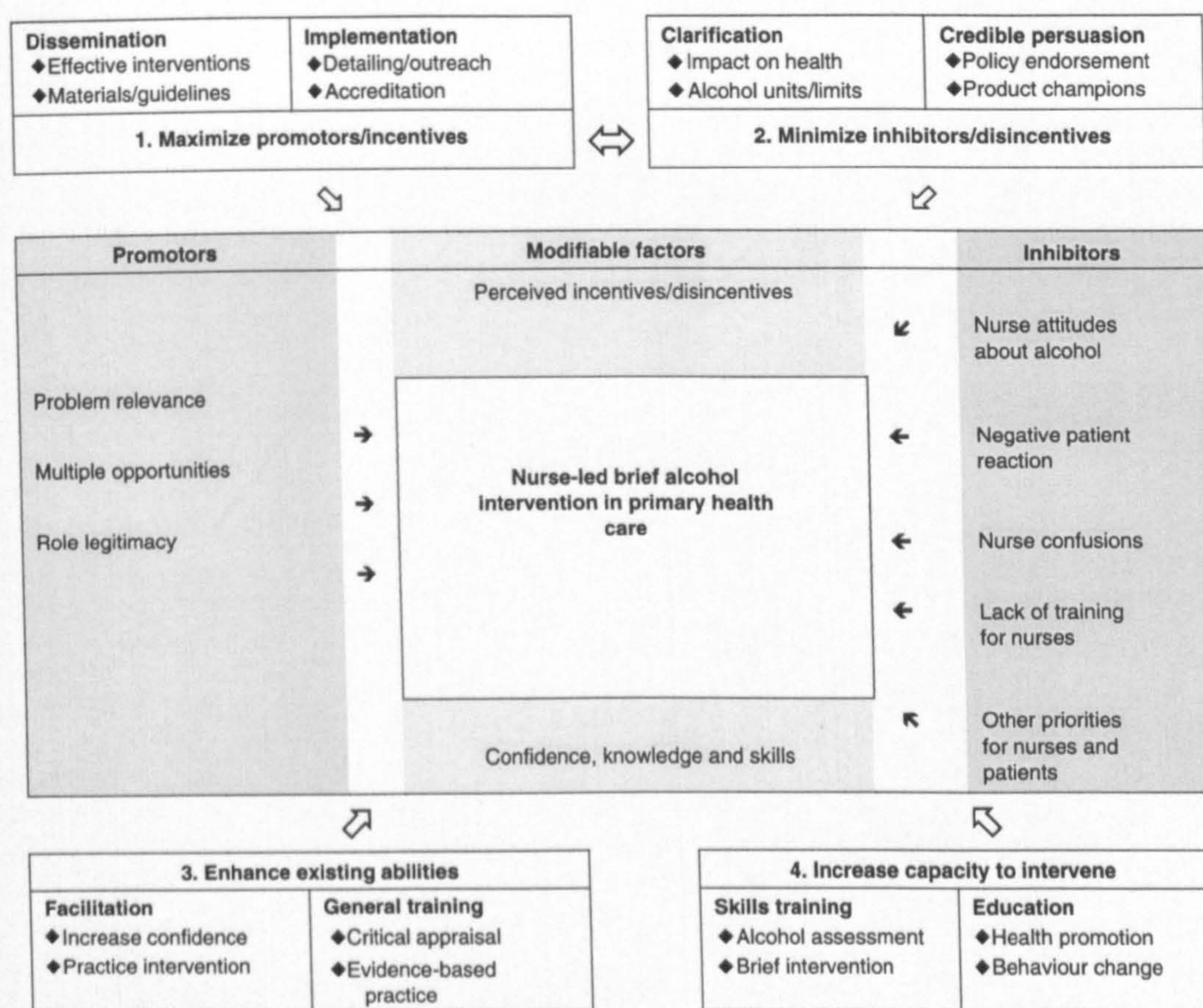


Figure 2 Strands of an intervention to promote nurse-led alcohol intervention.

care nurses are uneasy at becoming involved. Given that current health policy is to encourage, sustain and extend the health promotion and public health role of primary health care nurses (Department of Health 1999), more attention should be given to providing nurses with better preparation and support to carry out this work.

Limitations of the study

The study was conducted among nurses in practices who had previous experience of brief alcohol intervention and from one geographical area. While these factors may have influenced the responses obtained and generalisability of the study, we obtained no data to suggest that this was the case. The study would merit replication with a wider sample. The interviewer and the main data analyst (EFSK) were different individuals. While not ideal, a combination of open access to the audio-tapes, ongoing review of interview transcripts and regular discussion of the findings from data analysis reduced the likelihood of misinterpretation of the data. Respondent validation was carried out by all study nurses however, they did not suggest any changes to interpretation.

Acknowledgements

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Promoting brief alcohol intervention by nurses in primary care: a cluster randomised controlled trial

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Abstract

This trial evaluated the clinical impact and cost-effectiveness of strategies promoting screening and brief alcohol intervention (SBI) by nurses in primary care. Randomisation was at the level of the practice and the interventions were: written guidelines (controls, $n = 76$); outreach training ($n = 68$); and training plus telephone-based support ($n = 68$). After 3 months, just 39% of controls implemented the SBI programme compared to 74% of nurses in trained practices and 71% in trained and supported practices. Controls also screened fewer patients and delivered fewer brief interventions to risk drinkers than other colleagues. However, there was a trade-off between the extent and the appropriateness of brief intervention delivery with controls displaying the least errors in overall patient management. Thus cost-effectiveness ratios (cost per patient appropriately treated) were similar between the three strategies. Given the potential for anxiety due to misdirected advice about alcohol-related risk, the balance of evidence favoured the use of written guidelines to promote SBI by nurses in primary care. © 2002 Elsevier Science Ireland Ltd. All rights reserved.

Keywords: Brief alcohol intervention; Nurses; Implementation; Appropriateness of care

1. Introduction

Opportunistic screening and brief intervention (SBI) has been shown to be effective and cost-effective at reducing the health and social problems that result from excessive drinking [1–3]. Just 5–15 min of structured advice about alcohol can reduce excessive consumption by an average 24% in non-treatment seeking patients presenting to primary care [1]. In addition to providing health gains for patients, SBI may reduce societal costs of excessive drinking and result in economic gains for health services [4].

Although most of the studies to date have focused on general practitioner (GP)-led intervention, SBI led by primary care nurses has been shown to be effective at reducing excessive drinking [5–8]. The intensity of counselling needed by nurses to reduce consumption is less clear, since different studies have reported a greater impact of lower level (brief) counselling [9] and of more intensive counselling [10]. Nevertheless, nurses have been described as an under-utilised resource for SBI in primary care [11]. However, nurse involvement in alcohol intervention remains low [12,13] even though they often lead on health promotion

[14] and report enthusiasm for such work [15]. One explanation may be that whilst nurses report that SBI is a legitimate part of their role in primary care, they also perceive many barriers to their involvement in delivering these educational interventions [16].

The use of evidence-based care in routine practice is fundamental to a high quality health service [17]. However, delays in research implementation persist which are detrimental to patients [18]. Thus, specific implementation strategies are required which provide health professionals with skills and encouragement to alter existing behaviour whilst addressing perceived barriers to change [19–21]. Since multifaceted interventions consistently produce positive effects on professional behaviour change [22–24], an additive combination of written guidelines, outreach training and reminder support calls was evaluated in this trial. However, more intensive implementation strategies may cost more to enact [25]. Thus, in a context of limited budgets for health-care, it is important not only to assess the impact of different promotional strategies on practice behaviour, but also their resource implications for the health service [26]. To do this an economic evaluation in the form of cost-effectiveness analysis was carried out, in which costs incurred by each strategy were set against its effects on practice to allow comparison across the different strategies. Consequently, the

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purpose of this study was to evaluate both the clinical impact and cost-effectiveness of three intensities of an intervention to promote SBI by nurses in primary care.

2. Methods

2.1. Sampling and randomisation

The sample pool was 312 general practices from seven health districts across Northern England. These practices were the remainders after a previous trial of GP-led SBI [27,28]. In both trials, the practice was the unit of randomisation. Study practices were randomised in equal numbers to one of three intervention groups (controls, training, training and support), using the random number generator in SPSS for Windows 7.5 [29]. Randomisation occurred before recruitment, because the group to which a practice was allocated determined what was said during recruitment.

Sample size was based on implementation rate differences reported for GPs in control (44%) and trained practices (56%) [28]. GPs screened a median 38 patients per practice in 3 months. Since nurses often work part-time, it was assumed that they might screen half this number. Screening data from previous work provided an intra-cluster correlation coefficient (ICC) of 0.064. Thus, 68 practices per intervention group were required to detect a significant difference in implementation rate with 85% power and $P < 0.05$.

2.2. Eligibility and recruitment

A practice was eligible if it contained at least one nurse who would not be away from the practice for more than 2 weeks during the study. Telephone recruitment used a scripted conversation to secure nurse-agreement to use the SBI programme by reinforcing incentives and countering barriers which had been identified in pilot work [16]. If a nurse needed permission from GPs to participate, a study leaflet was sent for consideration. To minimise workload, nurses were encouraged to use receptionists to hand out screening questionnaires and permitted to co-implement the programme with a colleague. Recruitment was carried out by a research associate who was not involved in randomisation procedures.

2.3. SBI procedures

The Drink-Less SBI programme [30] was used. Nurses were directed to screen patients (aged >16) using the Alcohol Use Disorders Identification Test (AUDIT) [31] and give a brief intervention to all risk drinkers identified; the cut-off points for risk drinking were 8+ for men and 7+ for women as recommended by recent research [32].

2.4. Study interventions

2.4.1. Control

The SBI programme was delivered to practices and a covering letter directed nurses to written guidelines concerning implementation. Personal delivery ensured that the programme reached its target nurse and reduced the possibility that it would be lost.

2.4.2. Training

Nurses received the SBI programme during an outreach visit to the practice when they experienced training in how to use the programme (mean duration 34 min, S.D. 13). Training familiarised nurses with SBI procedures and pre-empted practical problems, e.g. difficulties with raising the topic of alcohol and dealing with negative patient reactions.

2.4.3. Training and support

Nurses received the SBI programme during an outreach visit to the practice when they experienced the same training as above (mean duration 33 min, S.D. 10). Thereafter, they received two-weekly telephone calls which provided support and advice about SBI. Support calls were used to respond to questions or problems that arose during SBI.

All nurses were telephoned 2 days after delivery of the SBI programme to check either that it had been received (controls) or that nurses were happy with training and to remind nurses to return a baseline evaluation questionnaire.

2.5. Data collection and follow-up

Every nurse received a baseline questionnaire, which recorded personal and workplace details. Questionnaires were identified by a practice code and were returned by post in a reply-paid envelope. A follow-up questionnaire was posted after 3 months and returned as above or in a sealed envelope at follow-up. All nurses received a follow-up visit at 3 months where remaining SBI materials were counted and anonymous carbon-copies of screening questionnaires were collected. Screening questionnaires were scored by the research team to identify risk drinkers and patients receiving brief intervention (indicated via a tick box).

2.6. Outcome measures and statistical analysis

Implementation consisted of both screening (coverage with the programme) and appropriate brief intervention delivery (adherence to the protocol). Outcome data were analysed per practice and by intention to treat. Differences in programme use (yes/no) between the intervention groups were determined using Chi-square (χ^2) tests for categorical data. Due to non-normal data, Mann-Whitney and Kruskal Wallis tests were used to detect differences in median outcomes on the basis of two and three independent group comparisons, respectively. Statistical significance was accepted at $P < 0.05$.

2.7. Economic evaluation

All activities associated with the promotion (researcher activities) and implementation of SBI (practitioner time) were recorded as they occurred. The costs of nurse time were calculated via national unit cost estimates [33]. Screening was estimated to take 1 min per patient and the mean brief intervention duration was 8.6 min. Full promotion and implementation costs were collated per practice and divided by the mean number of appropriate brief interventions delivered by nurses in each strategy to produce cost-effectiveness ratios. Sensitivity analysis considered just promotional costs, since SBI is a form of lifestyle advice which may be regarded as routine healthcare which would occur irrespective of the trial. Previously reported costs for GPs [28] were re-calculated at 2000 prices to facilitate comparison with nurse data.

2.8. Ethical approval

Ethical approval for the trial was obtained from the lead ethics committee for the former Northern Regional Health Authority plus seven local research ethics committees.

3. Results

3.1. Eligibility and recruitment

Of 312 practices in the sample pool, 270 (87%) were eligible. Nurses in 212 practices (79%) agreed to implement SBI and received the study interventions (see Fig. 1). Recruitment rates did not significantly differ between intervention groups ($\chi^2 = 4.0$, d.f. = 2, $P = 0.134$).

3.2. Subject details

Data were available for 156 (74%) practices, evenly distributed across the intervention groups ($\chi^2 = 0.96$, d.f. = 2, NS). Most were group practices (74%) with a mean 3 GP partners (S.D. 2) and a mean list size of 5810 patients (S.D. 3604). Most practices were in urban (52%) or mixed urban/rural areas (23%). Typically, nurses were female practice nurses with English as a first language (99%), a mean age of 45 years (S.D. 8) and a mean 11 years in practice (S.D. 6). Most nurses (64%) recalled less than 4 h of previous education or training about alcohol issues and self-reported attitudes towards research were positive (60%) or very positive (24%).

3.3. SBI Implementation

At follow-up, nurses in 128 (60%) practices had implemented the SBI programme and there was a significant difference between the intervention groups ($\chi^2 = 21.7$, d.f. = 2, $P < 0.001$). SBI was implemented in 30 (39%) control practices (95% CI = 28–51%) compared to 50 (74%) trained practices (95% CI = 63–84%) and 48 (71%) trained and supported practices (95% CI = 60–81%). There was a significant difference in median numbers of patients screened between the intervention groups (Kruskal Wallis $\chi^2 = 12.37$, d.f. = 2, $P = 0.003$). Nurses in control practices screened fewer patients (median 0, interquartile range 0–17) than nurses in trained practices (median 11, interquartile range 0–28) or trained and supported practices (median 13, interquartile range 0–37). Appropriate brief intervention delivery also significantly differed between the intervention groups (Kruskal Wallis $\chi^2 = 7.45$, d.f. = 2, $P = 0.025$). Controls delivered fewer brief interventions to risk drinkers (median 0, interquartile range 0–3) than nurses in trained

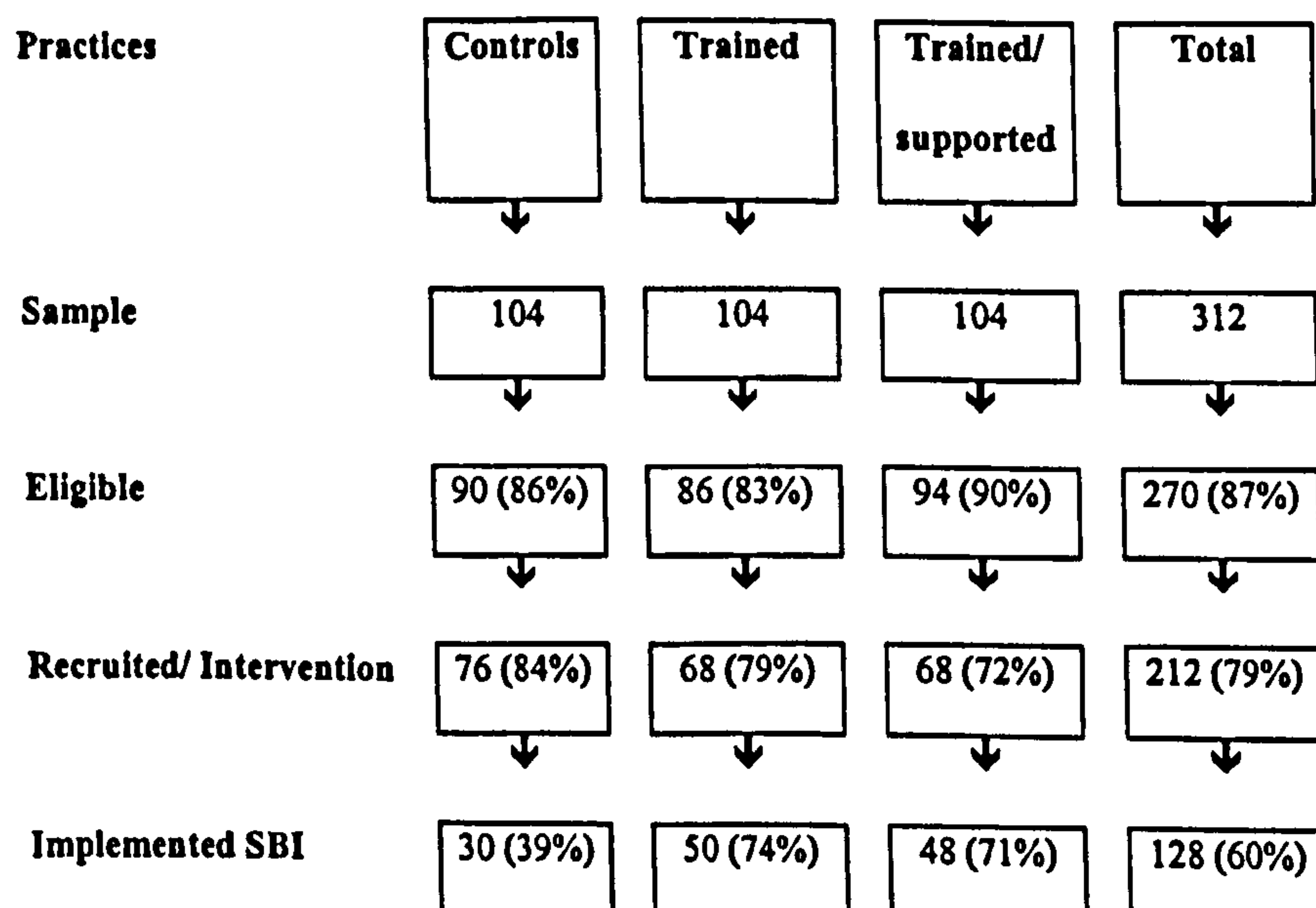


Fig. 1. Flow of practices through the trial.

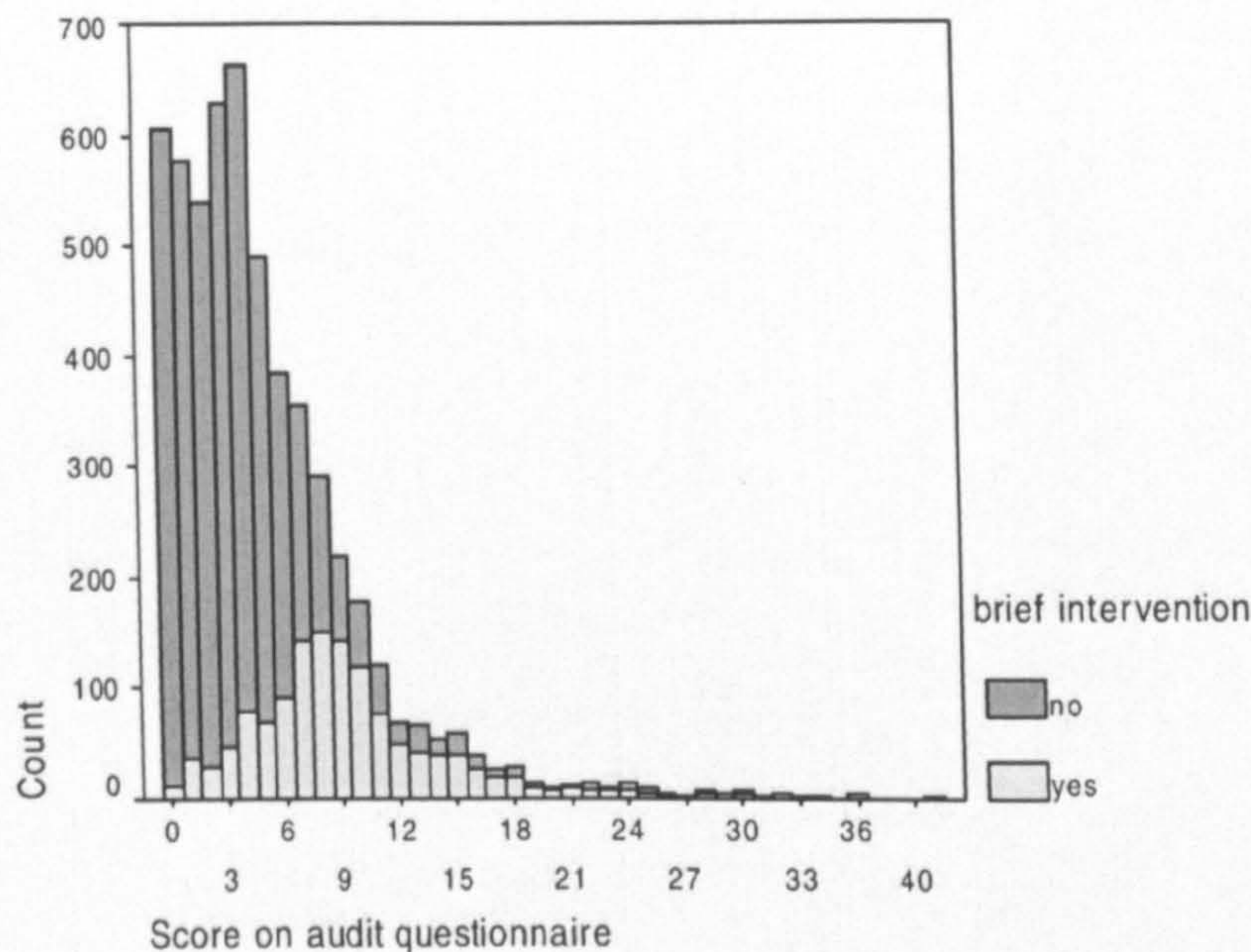


Fig. 2. Receipt of brief intervention by patients' total AUDIT score (risk drinking was indicated by a score of 8+ for men and 7+ for women).

practices (median 1, interquartile range 0–4) or trained and supported practices (median 1, interquartile range 0–7).

3.4. Patient management

Seventeen percent ($n = 976$) of patients did not receive appropriate management and these were not just borderline cases of risk drinking (see Fig. 2). Ten percent ($n = 574$) of 'risk' drinkers did not receive a brief intervention whilst 7% ($n = 402$) of non-risk drinkers did. Control practices displayed more appropriate patient management (see Fig. 3) because they were less likely to erroneously intervene with non-risk drinkers (Kruskal Wallis $\chi^2 = 49.9$, d.f. = 2, $P < 0.001$). Because it was possible that brief intervention with non-risk drinkers was due to nurses' knowledge about previous problems that had led patients to abstain from

alcohol an analysis was repeated without abstainers ($n = 606$). Brief intervention delivery altered by just 12 cases whilst significant differences remained.

3.5. Implementation context

Data from 115 (90%) practices that implemented SBI provided a context for implementation. Most commonly, SBI was implemented opportunistically (29%) although other contexts included: all patients (18%); new patient registrations (15%); well-person checks (15%); general clinics (9%); selected patients (9%); and quotas of patients (5%). The context of SBI did not differ between the intervention groups.

The mean time that nurses spent delivering brief intervention was 8.6 min (S.D. 6.8) although most nurses spent less than this (mode and median 5 min, interquartile range

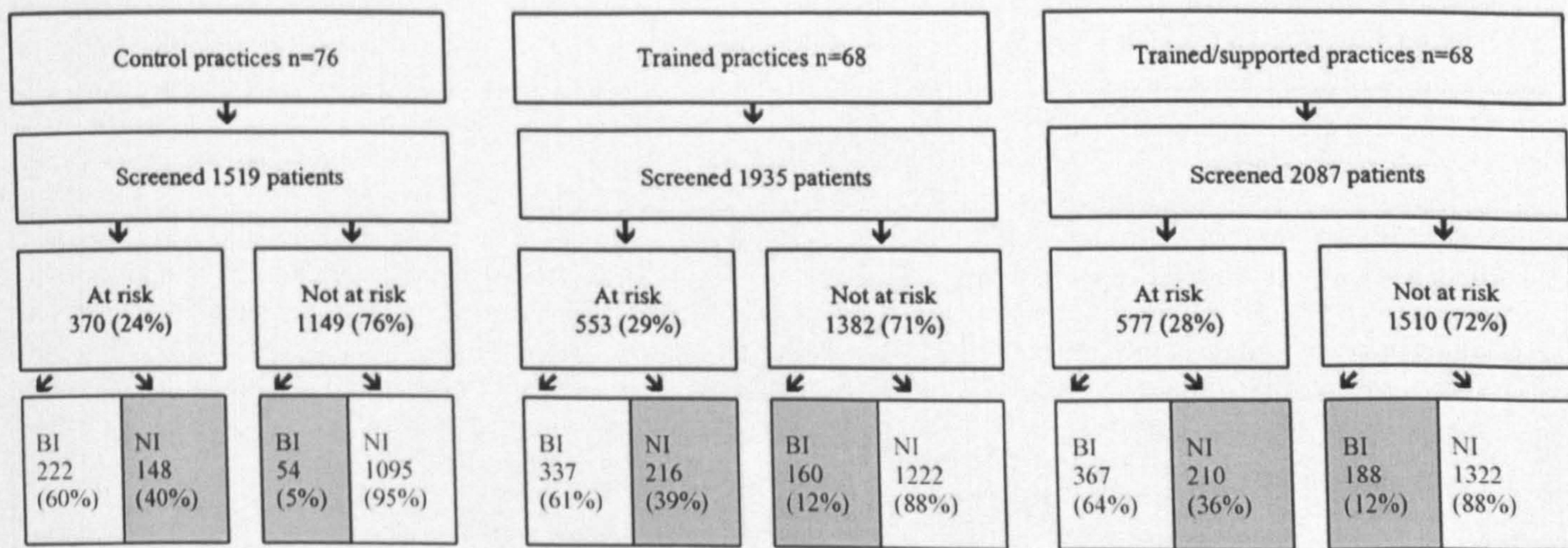


Fig. 3. Numbers of patients screened and receiving brief intervention (BI) or no (NI) by risk status (shaded boxes represent inappropriate patient management).

5–10). Duration of brief intervention did not differ between the intervention groups (Kruskal Wallis $\chi^2 = 0.9$, d.f. = 2, NS).

Usually, a single nurse implemented SBI (73%) although in the remaining practices two or more nurses co-worked. Most nurses (73%) were part-time and the median number of nurse-hours available per practice (all nurse hours summed) was 30 (interquartile range 21–38). There was no difference in proportions of full or part-time nurses between the intervention groups (Kruskal Wallis $\chi^2 = 3.1$, d.f. = 2, NS).

Most practices (84%, $n = 107$) did not use receptionists to give out screening questionnaires. However, receptionists' help significantly increased the median number of patients screened (Mann–Whitney $U = 476$, $P < 0.001$) from 18 (interquartile range 10–44) to 76 (interquartile range 33–128). There was a difference between the intervention groups in receptionist involvement ($\chi^2 = 6.2$, d.f. = 2, $P = 0.045$). Controls involved receptionists more often

(31%, $n = 9$) than trained (10%, $n = 5$) or trained and supported practices (15%, $n = 7$).

3.6. Cost-effectiveness analysis

The full cost of promoting and implementing SBI (see Table 1) was significantly less for controls at £93 per practice compared to £157 per trained practice and £163 per trained and supported practice (Kruskal Wallis $\chi^2 = 27.97$, d.f. = 2, $P < 0.001$). Moreover, although SBI occurred less extensively in control practices, brief interventions were more appropriately delivered. Consequently, cost-effectiveness ratios were similar across the intervention groups, when full or just promotional costs were considered. When full costs of GP-led SBI were considered (see Table 2), nurses were more cost-effective at delivering brief interventions. However, if just promotional costs were considered, GPs' were more cost-effective.

Table 1
Costs of promoting and implementing nurse-led SBI (2000 price levels)

Costed item	Control practices $n = 76$ (£)	Trained practices $n = 68$ (£)	Trained & supported practices $n = 68$ (£)
Promotion			
Postage			
Researcher time to prepare @ £12 per hour	13.40	22.20	21.40
Postal charges	15.72	28.33	26.48
Materials			
SBI programmes @ £15.00	1140.00	1020.00	1020.00
Extra materials requested	9.92	15.55	10.82
Telephone			
Researcher time in contact @ £12 per hour	196.40	165.00	350.00
Researcher time waiting @ £12 per hour	32.40	23.30	94.40
Call charges contact @ 5p per minute	49.20	41.25	87.50
Call charges waiting @ 5p per minute	8.10	5.83	23.60
Practice visits			
Researcher time in contact @ £12 per hour	157.60	703.96	663.10
Researcher time waiting @ £12 per hour	148.30	340.40	336.20
Researcher time travelling @ £12 per hour	1261.80	1635.20	1514.40
Mileage 1 (80 miles or less) @ 36p per mile	1432.80	1771.56	1625.04
Mileage 2 (over 80 miles) @ 18p per mile	134.28	227.70	148.68
Nurse time			
Nurse ^a time training/support ^b @ £25 per hour	535.50	1642.48	1787.91
Implementation			
Nurse time screening ^c @ £29 per hour	734.18	935.25	1008.72
Nurse time intervening ^c @ £29 per hour	1147.24	2065.86	2306.95
Total I (promotion only)	5135.42	7642.76	7709.53
Total II (promotion & implementation)	7016.84	10643.87	11025.20
Cost per practice (I–II)	68–93	113–157	114–163
Appropriate brief interventions per practice	2.92 ^d	4.96 ^d	5.39 ^d
Cost per appropriate intervention (I–II)	24–32	23–32	22–31

Other staff equivalents (a/b) would be: district nurse £24/£50; CPN £24/£67; health visitor £24/£68

^a Based on a qualified practice nurse (midpoint G grade) including capital overheads and non-London rates.

^b Nurse cost per hour.

^c Nurse cost per hour of patient contact.

^d Not in £.

Table 2
Costs of implementing GP-led SBI (rates adjusted to 2000 price levels)

Costed item	Control practices <i>n</i> = 43 (£)	Trained practices <i>n</i> = 43 (£)	Trained & supported practices <i>n</i> = 42 (£)
Promotion			
Postage			
Researcher time to prepare @ £12 per hour	41.21	53.59	67.39
Postal charges	34.70	38.86	67.37
Materials			
SBI programmes @ £15.00	645.00	645.00	630.00
Extra materials requested	66.27	36.23	87.98
Telephone			
Researcher time in contact @ £12 per hour	76.80	79.00	148.00
Researcher time waiting @ £12 per hour	4.40	5.20	4.10
Call charges contact @ 5p per minute	19.20	19.75	37.00
Call charges waiting @ 5p per minute	1.10	1.30	1.03
Practice visits			
Researcher time in contact @ £12 per hour	74.59	170.80	249.60
Researcher time waiting @ £12 per hour	122.60	182.00	164.40
Researcher time travelling @ £12 per hour	626.60	901.20	1527.00
Mileage 1 (80 miles or less) @ 36p per mile	634.32	903.24	1358.64
Mileage 2 (over 80 miles) @ 18p per mile	109.35	205.92	436.41
GP time			
GP ^a time training/support ^b @ £25 per hour	618.75	1156.25	2033.75
Implementation			
GP time screening ^c @ £118 per hour	4350.27	7243.23	10350.57
GP time intervening ^c @ £118 per hour	8186.05	12109.95	18824.54
Total I (promotion only)	3074.89	4398.34	6812.67
Total II (promotion & implementation)	15611.21	23751.52	35987.78
Cost per practice (I–II)	72–364	103–553	163–857
Appropriate brief interventions per practice	7.58 ^d	14.14 ^d	21.26 ^d
Cost per appropriate intervention (I–II)	10–48	8–40	8–41

^a Based on a trained GP including practice costs and capital overheads.

^b GP cost per hour of General Medical Service activity.

^c GP cost per hour of patient contact.

^d Not in £.

4. Conclusion and discussion

The extent that primary care nurses engaged in SBI was increased by the use of more intensive promotional strategies. Nurses that received just written guidelines were less likely to begin SBI than nurses who received outreach training, with or without additional support. Controls also delivered fewer interventions than other colleagues. However, there was a trade-off between the extent and the appropriateness of brief intervention delivery. Thus, controls showed the most appropriate patient management. When the costs of each promotional strategy were set against its effects, in terms of the number of patients appropriately managed, the resulting cost-effectiveness ratios were equivocal. Given the potential anxiety created by misdirected advice about alcohol-related risk, the balance of evidence favoured the use of guidelines in promoting SBI by primary care nurses.

4.1. Discussion

At first glance, the findings of this study appeared to confirm the conclusion of a recent systematic review that guidelines alone are often insufficient to bring about substantial changes in clinical practice [17]. However, in the case of primary care nurse-led SBI, more is not always better. Thus, nurses carrying out more SBI often did this less accurately than nurses who worked at a modest rate. It is not clear why patient mismanagement, due to non-intervention with risk drinkers and brief intervention with non-risk drinkers, occurred more frequently in practices that received training, and sometimes also support. It is possible that trained nurses felt more confident about using clinical judgement to determine which patients needed brief intervention. GPs demonstrated similar errors when delivering SBI and their selective provision was influenced by inter-personal factors [34]. Similarly, GPs' decisions about mental health and preventive care

have been influenced by non-clinical patient factors [35,36]. Future research should identify if inter-personal factors influence nurses' practice. However, patient preferences regarding treatment may also underpin selective care. Thus, although patients report welcoming lifestyle advice from doctors and nurses [37,38], they are most receptive if this advice directly relates to their concerns about health, which may not include smoking and drinking [39].

4.2. Practice implications

Nurses screened patients and intervened with risk drinkers at less than half the rate reported for GPs [28] but the former are much less expensive to employ. Thus, in terms of the research costs needed to promote SBI, GPs were more cost-effective than nurses since they delivered more interventions. However, if health professionals' time spent implementing SBI is included in the assessment, then nurses become the most cost-effective option. The final decision regarding the relative cost-effectiveness of nurse or GP-led SBI will depend on judgement as to whether such lifestyle advice is felt to be routine practice or an additional activity for primary care.

This finding that nurses worked at a much lower rate than doctors may have been due to the fact that many nurses worked part-time, and were less likely than GPs to enlist receptionists' support. However, nurses are known to lack confidence concerning alcohol-related issues [40] and they often have negative attitudes about patients with alcohol-related problems [41]. Consequently, a common response to alcohol issues is avoidance or referral [42]. This study has demonstrated a means of encouraging nurses to become involved in SBI and direct involvement with alcohol-related issues tends to improve therapeutic attitudes [43]. However, future research should be aimed at improving the appropriateness of brief intervention delivery if its beneficial effects for patients are to be fully realised.

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Alcohol and brief intervention in primary health care: what do patients think?

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Excessive alcohol consumption causes major problems in the UK but is responsive to brief intervention. Excessive drinkers represent 20% of patients on practice lists and present twice as often as others. The potential of health professionals to reduce alcohol related problems contrasts sharply with current practice. Health professionals' report fears about negative reactions and losing rapport with patients. This study explored patients' attitudes to and experiences of alcohol and brief intervention in primary health care so that health professionals can provide a service which is more acceptable to patients. The study used a qualitative approach to data collection and analysis. Six focus groups, stratified by age and sex, were conducted with 31 patients from practices in northeast England. A combination of random and purposive sampling was used to recruit patients with a range of perspectives on issues emerging from ongoing data-analysis until data saturation occurred. Many patients had recently altered their lifestyle to improve their health, however, only one reported reducing alcohol consumption. Over half the patients had been advised about their lifestyle but this was not always deemed to be appropriate. Patients responded positively to advice when in an appropriate context and by a health professional with whom they had developed a relationship and rapport. Overall the general practitioner was deemed the preferred health professional to discuss alcohol issues. Brief alcohol intervention is a legitimate role of the general practitioner when carried out in an appropriate context. A National Alcohol Strategy should focus on strengthening the public health campaign in order to support general practitioners in brief alcohol intervention.

Key words: alcohol; brief intervention; patient attitudes; primary health care; qualitative research

Introduction

Alcohol is a major cause of social, health and economic problems in the UK; (Alcohol Concern, 2000; Anderson *et al.*, 1993) thus reduction in excessive drinking was one of the targets included in the Government White Paper, Saving Lives: Our Healthier Nation (Department of Health, 1999). However, alcohol problems are responsive to brief interventions (Freemantle *et al.*, 1993; Moyer *et al.*, 2002). Brief alcohol interventions are typically short in duration (5-10 minutes) and can be defined as those practices that aim to ident-

ify a real or potential alcohol problem and motivate an individual to do something about it (Babor and Higgins-Biddle, 2001). General practice is a particularly valuable point of contact for the delivery of brief interventions for excessive alcohol use because of the large proportion of the population who access their general practice each year (Fraser, 1992). However, the potential of both general practitioners and practice nurses to reduce the prevalence of alcohol related problems contrasts sharply with current practice (Boulton and Williams, 1983; Deehan *et al.*, 1998; Reid *et al.*, 1986; Rydon *et al.*, 1992).

While it has been suggested, from quantitative postal surveys, that patients expect and welcome preventive lifestyle advice (Duaso and Cheung, 2002; Foss *et al.*, 1996; Richmond *et al.*, 1996; Wallace *et al.*, 1987; Wallace and Haines, 1984)

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other research, which has explored this issue in a qualitative manner, has shown that patients can resent health professionals dictating to them about lifestyle change (Miller *et al.*, 1993; Stott and Pill, 1990). In fact behaviour change experts believe that advice for those not ready to change could result in unhealthy behaviour and is potentially destructive to the patient-health professional relationship (Butler *et al.*, 1996; Kelly, 1992; Prochaska, 1995; Prochaska and DiClemente, 1982; Rollnick *et al.*, 1993; Samet *et al.*, 1996). This concern about possible negative reactions, to preventive advice, from patients may be behind the large number of opportunities for health promotion that are apparently being missed by health professionals (Lock *et al.*, 2002; Williams *et al.*, 1989). Only one study has sought to examine patients' views on the most appropriate professional to deliver preventive advice in primary health care (Eggleston *et al.*, 1995). In this study patients viewed the practice nurse and general practitioner delivered interventions as equally appropriate.

As the government strives to empower patients to become more involved in health care (Department of Health, 2001) the aim of this study was to explore patients' attitudes to and experiences of alcohol and brief interventions in primary health care so that future brief alcohol interventions are appropriate and acceptable to potential recipients thus increasing the likelihood that they will impact on patient lifestyle.

Methods

A focus group study with a random sample of patients registered with general practices supplemented with a purposive sample of patients recruited using market research methods in northeast England.

Pilot study

A small pilot study was carried out in order to test and refine the focus group semi-structured topic guide. As a result of the pilot study several changes were made to the topic guide (see Figure 1). The overall number of questions was reduced by removing some of the more general items. Other

questions were removed or rephrased to avoid potential repetition of issues.

Ethical approval

The Local Research Ethics Committee granted ethical approval for the study in September 2000 and for a second recruitment strategy in November 2001.

Practice recruitment

All 75 practices within one area of northeast England were invited to be involved in the study. An invitation letter enclosing a reply slip and freepost envelope was sent to the principal general practitioner of each practice in March 2001. Examples of the patient invitation letter, information sheet, consent form and freepost envelope were also included for information and all were copied to the practice manager.

Each practice was asked if they would be willing to invite a random sample of 60 patients to attend a focus group. General practitioners were asked to exclude patients if they were under the age of 16, had learning disabilities, had severe mental health problems or were pregnant women. In total, 10 (13%) practices contacted the study centre regarding participation, eight (11%) practices went on to invite patients between March and September 2001 (see Table 1).

Patient recruitment

For ethical reasons the study centre was not made aware of each random sample of patients who received a written invitation from their practice (on University headed paper). Patients were asked to give their written consent to be contacted directly by the study centre in order to negotiate further involvement in the study. An information sheet about the study, consent form and freepost envelope were enclosed along with the invitation. Patients were told the aim of the study was to explore what they felt about being asked and advised about their lifestyle in primary health care, particularly in relation to alcohol.

Out of a total of 480 patients invited, 43 (9%)

Figure 1: Patient Focus Group Topic Guide**Health and Health Promotion**

- 1) What do you think are the main causes of ill health?
- 2) What have you done in the last 12 months to keep yourself healthy or to improve your health?

Lifestyle in Primary Health Care

- 3) Have you been asked about your lifestyle when you have been to the surgery?
- 4) How did you feel about being asked about your lifestyle?

Alcohol and Alcohol Health Promotion

- 5) What do you consider to be excessive drinking?
- 6) What are the government recommended limits?
- 7) What is a unit of alcohol?
- 8) Where have you found out this information?
- 9) What are the problems (if any) associated with drinking too much alcohol?
- 10) What are the benefits (if any) associated with drinking alcohol?

Drink-Less Brief Alcohol Intervention Programme

- 11) AUDIT – How would you feel about being asked these questions?
- 12) When would it be appropriate to ask these questions?
- 13) Who should raise the subject of alcohol?
- 14) LEAFLETS – What do you think about the materials presented?
- 15) How would you feel about being given advice and information about drinking?
- 16) CARDS – Who would be the easiest person to discuss alcohol with?
(Rank cards in order from easiest to hardest?)
- 17) What information would you like about alcohol?
- 18) How would you like to receive information about alcohol?

Table 1 Study practices

Id	Number of GPs	Random sample (after exclusions)	Patient response	Response rate
A	5	60	3	5%
B	6	60	10	17%
D	4	60	4	7%
E	4	60	4	7%
F	10	60	3	5%
G	3	60	6	10%
H	3	60	5	8%
J	7	60	8	13%
Total		480	43	9%

returned a consent form to the study centre expressing interest in attending a focus group session. Respondents were 49% (n = 21) male (age range 29–78 years) and 51% (n = 22) female (age range 18–63 years). Respondents were invited by letter to express their availability for two different dates on which they might be able to attend a focus group session. Each patient was normally given the option of one afternoon or one evening session.

Patients were asked to return a reply slip detailing their availability and or preferences for the sessions in a freepost envelope provided by the study centre. The most commonly nominated date and time was selected for each focus group. All patients were then invited to a focus group by letter (enclosing a map and directions to the venue) and telephoned the day before to confirm attendance.

Due to a poor response (n = 8, 19%) from males and females under the age of 40 a second recruitment strategy was employed. Market research methods were used to recruit patients aged between 18 and 40 years from the general public. This involved approaching potential subjects, on the day of the focus group session, in the city centre. The research study was explained to them and they were given an information sheet. If they expressed an interest in participating in the study they were asked a few questions to ensure they met the recruitment criteria. If eligible, patients were asked to sign a consent form and invited to return later that day to take part in the focus group session. Once recruited these patients were treated in exactly the same manner as all other participants.

Response rates to this method of recruitment were not recorded.

To ensure that each focus group was as homogenous as possible and had a similar number of potential participants, patients who agreed to participate in the study were stratified into six groups based on age and sex. The groups consisted of:

- (a) Males aged between 18 and 29
- (b) Females aged between 18 and 29
- (c) Males aged between 30 and 55
- (d) Females aged between 30 and 55
- (e) Males aged 56+
- (f) Females aged 56+

Focus groups

A total of six focus group sessions were carried out. Each session was held in a city centre community setting, easily accessible by public transport and with full access for disabled people. Each group was approximately one hour in duration and light refreshments were available throughout. Each group was moderated by an experienced researcher using a semi-structured topic guide, with a second researcher acting as an observer and taking notes to assist with the validation of data. All groups were audio tape recorded and transcribed verbatim. All six focus group sessions were carried out in November 2001.

Each participant was asked to complete a registration form on arrival at the focus group, to obtain some basic demographic and lifestyle details. Participants received compensation for travel expenses (maximum £10) as an incentive to attend.

The moderator and observer introduced themselves as researchers from the University of Newcastle upon Tyne and explained the aim of the focus group. Guidelines as to how the group would be conducted and confidentiality and data protection issues surrounding the use of audio tape recording and the information collected were also discussed. Participants had agreed to the audio tape recording of the group on the consent form and this was reconfirmed at the group itself. Participants were also given the opportunity to ask further questions about the group before it began.

The moderator guided the discussion using a semi-structured topic guide. Questions were open-ended and a 'funnel' approach was used, starting

with general questions about health and lifestyle and gradually focusing upon alcohol-related issues. Participants were encouraged to discuss the questions with one another rather than with the moderator, whose role was to introduce topics and probe any issues that arose from the discussion.

During the group patients were presented with five cards each with the name of a different health professional (general practitioner, practice nurse, counsellor, lifestyle worker and alcohol worker), which they were asked to rank in order of who they would prefer to talk to about alcohol-related issues. Reasons for their decisions were also discussed.

At the end of the focus group, participants were thanked for attending and received travel expenses and a 'goody bag' of alcohol-related leaflets, a unit calculator and a pen to take home. The moderator and observer held a debriefing session immediately after the group to share initial impressions.

Data analysis

Focus group discussions were audio taped and transcribed verbatim. Tapes were listened to and each transcript checked to ensure that meaning had not been lost during transcription. Transcripts were anonymised and imported into the Nvivo (Fraser, 2000) qualitative software package for open and axial coding of data. Data collection and analysis proceeded simultaneously until saturation was reached according to the constant comparative method. Transcripts were scrutinized, emerging themes and subthemes were agreed and an initial coding frame was developed. Initial coding of data was carried out independently by the two researchers, then reviewed and revised until consensus was reached, in an attempt to reduce researcher bias. Sections of text were coded and these codes were applied to subsequent transcripts. Further codes were added as new themes emerged.

Emergent themes were analysed by age, gender and the reported lifestyle behaviour to explore any similarities or differences in patients' perceptions, attitudes and experiences on the basis of these attributes. Matrices were generated to show how many text units were coded at each given 'node' to investigate any patterns of coding.

Participants

In total 31 people attended the focus groups, 10 recruited directly from the city centre and 21 recruited via general practice. No data was collected on the ethnic background of the participants (see Table 2).

Results

Behaviour change to improve health

Patients were asked about their experiences of changing their behaviour in order to improve their health. Most reported doing something to improve or maintain their health. Most commonly patients

Table 2 Focus group participants

Focus Group	Sex	Occupation	Age	Education ^a	Smoker	Drinking behaviour ^b	Recommended exercise ^c	Recommended diet ^d
a	M	Student	18	A Level	No	Binge	Yes	No
		Student	18	A Level	No	Sensible	Yes	No
		Student	18	A Level	No	Heavy/Binge	Yes	No
		Student	19	A Level	No	Heavy/Binge	Yes	No
		Student	18	A Level	No	Heavy/Binge	Yes	No
		Student	18	A Level	No	Sensible	Yes	No
b	F	Health Worker	24	University	Yes	Heavy/Binge	No	No
		Student	26	University	No	Heavy/Binge	Yes	No
		Administrator	24	University	No	Heavy/Binge	Yes	No
		Researcher	24	University	No	Heavy/Binge	Yes	No
c	M	Local Authority	49	A Level	Yes	Heavy/Binge	Yes	No
		Police	45	University	No	Sensible	Yes	Yes
		Co. Director	46	A Level	No	Sensible	Yes	Yes
		Manager	51	University	No	Sensible	No	Yes
d	F	Housewife	55	Missing	No	Non	No	No
		Housewife	51	Missing	Yes	Non	No	No
		Unemployed	55	GCSE	No	Sensible	No	No
e	M	Retired	58	GCSE	No	Sensible	Yes	Yes
		Retired	76	GCSE	No	Non	No	Yes
		Co. Director	57	University	No	Sensible	Yes	Yes
		Retired	75	Missing	No	Non	Yes	Yes
		Unemployed	58	Missing	No	Sensible	No	No
		Clockmaker	61	University	No	Sensible	No	No
		Retired	78	Missing	No	Sensible	No	Yes
		Retired	62	GCSE	Yes	Heavy/Binge	Yes	Yes
		Scaffolder	58	Missing	No	Heavy/Binge	Yes	No
f	F	Housewife	56	Missing	No	Sensible	No	Yes
		Retired	63	Missing	No	Sensible	No	No
		Care Worker	59	Missing	No	Non	No	No
		Housewife	72	Missing	No	Sensible	Yes	No
		Witness Service	62	University	No	Non	No	No

^aEducation relates to highest level achieved.

^bDrinking behaviour based on British Medical Association recommendation (Non = 0 units/week, Sensible <14 units/week women <21 units/week men, Heavy >14 units/week women >21 units/week men, Binge >6 units/day).

^cRecommended exercise based on Health Education Authority recommendation of 30 minutes of light exercise per day or 20 minutes of vigorous exercise three days per week.

^dRecommended diet based on Health Education Authority recommendation of five portions of fruit and vegetable per day.

reported taking up regular exercise irrespective of age or gender. For groups other than young men increasing exercise was often reported in combination with improved diet. A couple of the younger and middle aged women talked about failed attempts at giving up smoking while all the older patients who had tried to give up had succeeded. Only one patient, a young female who drank heavily and binged, described trying to reduce her alcohol consumption. Patients in the older age groups reported that this change in behaviour was due to a specific health problem (such as a heart attack, a lung condition or obesity) or for a particular reason such as the escalating cost of cigarettes or to lose weight for a special occasion. Younger patients however talked more in terms of keeping fit and preventing future health problems.

Experiences of lifestyle questions or advice

Half of the patients stated that they had been asked or advised about their lifestyle by a health professional at one time or another. This occurred in a variety of situations but most commonly happened opportunistically when patients visited primary care for a specific health problem. A couple of the patients had requested help to change a lifestyle behaviour (smoking and diet) and many attended for preventive health checks such as smears, mammograms, well-man and healthy heart clinics. Other situations in which patients had been asked about their lifestyle included occupational checks, insurance medicals, new patient registrations, attendance for repeat prescriptions for contraceptives, hospital consultations and admittance to accident and emergency.

The source of lifestyle questioning or advice giving was therefore most commonly the patients general practitioner or practice nurse but included other health professionals such as hospital doctors and occupational nurses. For patients who had sought or requested advice, information was also obtained from a helpline and written material. Many of the older patients also used newspapers as a source of information about appropriate lifestyle behaviour while a couple of middle aged and older men also used their wives for information and support.

Specific questions and advice were not always deemed to be appropriate or acceptable. Some nondrinkers said that they or their (nondrinking) rela-

tive had been advised on reducing alcohol consumption even though they did not drink, and this had left them feeling insulted and not believed. Other (female) patients spoke about the negative attitude of health professionals they had seen and the poor manner in which they had been advised. For example, where patients had wanted to be praised and encouraged by the health professional for trying to change behaviour, they instead felt that they had been 'told off' or treated 'like a child'. Some female patients also said that they found it difficult to talk about their problems with their general practitioner because they felt 'vulnerable' or 'intimidated' (see Table 3a).

Patients seemed to respond more positively to general lifestyle questions and advice when this had been presented in an appropriate context, for example during the well man clinic or new patient registration, where patients expect and want to be asked or advised. The relationship between the patient and the health professional was also an important factor in the acceptability or otherwise of questions and advice. Patients who perceived they had good rapport with their health professional and had known them for a long time generally said they did not mind being asked and advised (see Table 3b).

Patients, whose lifestyle behaviour was in excess of that which is recommended by health professionals, had split views about the appropriateness of advice with some taking no notice, being insulted or lying about their behaviour while others expected questions and advice and were comfortable with this situation.

Attitudes to different health professionals regarding alcohol advice and information

Each patient was asked to rank the names of five health professionals who might be found in or attached to primary care, in order of preference of who they would want to talk to about alcohol issues. The overall order of ranking (from first to last preference) was general practitioner, practice nurse, counsellor, alcohol worker and lifestyle worker. However, many patients stated that they ranked the lifestyle worker last because they did not know what one was or what they did. There were some group differences in ranking. Young women preferred the practice nurse to the general practitioner while young men were least likely to

Table 3 (a) Negative experiences

I know when I've been to the doctors and they've asked me if I smoked I've sort of, I haven't lied but I don't want to admit that I do smoke even though I know its really important for my health record. It makes me feel bad. I tell them the truth but I feel quite invaded sometimes, even though I know its for my own good	(F 24 HD)
I feel like asking him what's your lifestyle?	(M 18 SD)
In there out the other (points to ears) . . . I don't take any notice	(M 58 HD)
You're like a little kid getting told off . . . you go in and you're like a little child, you become a little child. And you just take it. And then you come out and you think, I wish I hadn't bothered. Why didn't I just say? I've said to myself on my way there, but because they belittle you I've never said what I wanted to say and I think what a fool	(F 51 ND)
Sometimes do you not find it awkward when you're in the doctors and they don't actually speak to you? Because they sit and fair enough they may be trained to listen, but sometimes you just need that little bit of a push. To get out what you need to. And you feel very vulnerable when they just look at you	(F 55 SD)
I went to the doctors and he said 'do you drink?' And I thought he meant juice and I goes 'stacks' and he thought I was an alcoholic and I didn't drink	(F 55 ND)
My husband has a belly and he went to the doctor and I've got to go with him because he's got a speech impediment. We go in and he's got a pot belly like this and the first words the doctor said to him was 'you'll have to cut out the alcohol'. Well I mean he's never had a drink in his life. He was that frustrated that he said will you tell him I don't drink, tell him. He doesn't drink doctor he doesn't drink, he's just got a weight problem. And he went well you know it doesn't help if you drink. I have never met a doctor like him in my life!	(F 51 ND)
Well I've got a nurse at our practice, well I'm a diabetic and I'm an amputee, I've got no leg and I can't get the weight off. And she keeps saying to me you should lose the weight you know. If she can tell me how I can lose the weight I'll try. I've had the leg off 29 years and I just can't lose it. Well you should try and I says how do you try? I can't do it	(F 55 ND)
As they said to me once, she had a go at us, as says here, what is paying your wages? I said the taxes off what I am smoking and drinking and she just laughed, she says fair comment	(M 62 HD)

Table 3 (b) Positive experiences

I've got a very good doctor . . . he takes time to find out what the real problem is. He will ask, he's asked once or twice about general lifestyle when I've gone for specific things and I think that's good, and I've never been worried about that. I'd rather he did that than didn't. I think my life's very precious and if there is something, even if it's a small chance, I'll go to the doctor. I'd rather do that than take any chances. This doctor has got a fairly slow pace, he's not going to rush you out of the surgery, and he will try to get to the bottom of what the problem is. He would rather have a queue of people waiting than rush through things. I think he's really good	(M 45 SD)
I don't mind, it's his job	(M 19 HD)
I always used to go to the same doctor. And she knew me, she knew my family, she knew my family problems. And I could walk in and say so-and-so, so-and-so, so-and-so, and that was fine. And she would say how is this one or how is that one. And she knew the problems. And we had quite a good rapport going	(F 55 SD)
I don't know how I got on to it (a well man clinic) but I wanted to get onto it because I wanted to be tested for all these things. So I was very glad to be there. Because if there's any problem I'd rather know about it sooner than later	(M 51 SD)
I started drinking far too much, in the odd moments when I had the opportunity to indulge myself and my doctor asked me about it and he suggested that I should seek another form of relaxation. It was just getting away from all the stress you know. And he suggested that I should do something else . . . it was fine. I mean I knew myself that I smoke too much, I drink too much occasionally, not all the time. Just occasionally . . . so it was fine	(M 49 HD)

consult a counsellor. Some patients including most of the excessive drinkers stated that they would not consider going to see an alcohol worker, counsellor or lifestyle worker at all.

Patients were encouraged to talk about their reasons for their preferences. The main factors influencing their decisions were: their relationship with the health professional; whether or not they had time to talk to them within a consultation; perceived 'traditional' professional roles; level of training and expertise; the severity of the problem; perceived alcohol use of the health professional; and the stigma attached to certain problems and hence to specialist professional groups.

Most patients said they would prefer to go straight to their general practitioner with any alcohol concern or problem either because they had a good relationship with them and had known them for a long time or because that was traditionally who they would go to. They also thought the general practitioner would have the training and experience to deal with the problem or would refer them on if necessary. Concerns about going to the general practitioner arose from those who did not have a good relationship with their doctor or who did not want to waste the doctors limited time. A few of the (heavy drinking) patients and those patients with heavy drinking relatives questioned the drinking habits of their own general practitioner. Most believed the general practitioner to drink as much if not more than themselves and therefore deemed them unsuitable to provide advice about reducing alcohol consumption (see Table 4).

It was felt by some participants that practice nurses would have more time to discuss alcohol issues than a general practitioner, and that they were easy to talk to, approachable and understanding yet persuasive. There was an assumption amongst some younger participants that the practice nurse would be young and female and this would either make them easier to talk to because they would understand the issues themselves, or more difficult because they were perceived as not being 'serious'. Some (older) participants felt that the role of the nurse was more to do with changing dressings and giving injections than giving advice and information on alcohol. Others felt that the nurse would not have the training to give alcohol specific advice and information (see Table 5).

Some participants felt comfortable talking to a counsellor because they were trained to deal with a wide range of problems and were not alcohol specific. It was felt that they would be able to talk to them about other aspects of their lives and that they would look at the person as a whole. However many participants talked about the stigma attached to going to see a counsellor, with many young men feeling you had to be 'really messed up' if you needed to see a counsellor (see Table 6).

Alcohol workers were perceived by many participants as the person to go to when a patient had more severe alcohol problems, as they would be an expert in that field. Thus some participants stated that they would not want to see an alcohol worker because that would mean that they had a severe alcohol problem and because of the stigma attached to this. They were also concerned about seeing such a person at their doctors' practice, as they were afraid that other patients would know who they were going to see (see Table 7).

A lifestyle worker (someone who would deal with a range of lifestyle factors such as drinking, smoking, exercise and diet), came last overall in the rankings mainly because participants had never heard of one before, were not sure what their role would be and how they would differ from a counsellor. Responses to such a worker, however, were generally positive, again because they would be an expert in lifestyle behaviour but were not alcohol specific (see Table 8).

Alcohol related knowledge

Excessive drinking

Patients were asked what the term 'excessive drinking' meant to them. They defined this in a number of different ways including the quantity of alcohol consumed, the frequency of drinking, the physical effects of alcohol and the behavioural effects. Male patients and particularly the younger men talked about excessive drinking mainly in terms of the immediate and short term physical effects of alcohol. Patients also talked about the quantity and frequency of drinking, however although some talked in terms of the number of drinks consumed, no one measured excessive drinking in terms of units. (see Table 9).

Table 4 General practitioner*Positive responses*

I think that's tradition. Just from going to the doctors, its just if you get on well with the doctor as well that helps. I think I'm just a stick in the mud, go to the doctors and that's it basically. (M 46 SD)

If you've got a good doctor I think that would be my first choice. I suppose if it's a serious thing like alcohol maybe the doctor would have more general experience, medical training, that's why I put him first. And because I see him more often. (M 45 SD)

GP was first because you feel that's the person who's been trained most and has the most experience. And presumably knows how to deal with whatever comes their way. So that has to be the top. (M 51 SD)

Because I could talk to her in, without any qualms really, she's very, very nice and very charming. (F 62 ND)

Because I know him and I feel comfortable with him. (F 72 SD)

I've got no problems talking to my GP about alcohol, he's straightforward, gives you the facts and then lets you make up your mind. (M 18 BD)

I've got GP number 1, because he's the bloke that knows all your problems anyway, because he's got a big file he knows what's been going on all your life anyway. He knows everything about you, he knows all the bad parts. (M 19 HD)

I think the only good one would be the GP because you've seen them for years anyway, they all know you. (M 18 HD)

Negative responses

Its someone who knows you well and is responsible for your health and you might feel that its slightly oppressive. To tell all this to a doctor, you know he's going to stop you enjoying yourself so much because... why should you have to give him so much information when there's not a problem. That's what I'm concerned about. I wouldn't go to him with problems of alcoholism or something. (M 28 SD)

When I first went to the doctor to talk about the problems with my family with alcohol, I thought, I'm sitting here now, and my mind was saying, he's probably as bad a boozier as our R. I was thinking that as I was talking to him. Because he seemed quite laid back about it. Not as concerned as I was. And that stayed with me. And of course, my son who says things like he's in the pub more than I'm in the pub. But you think if he's drinking and he's like, what do you want me to do about it? Because they've got a life as well. They probably do have sometimes more tension, they're stressed out. So what do they do when they go home? (F 51 ND)

I mean they're bound to do things same as other people. My doctor drinks, my friend lives next door to him (F 55 ND)

The biggest alcohol problems are in the medical profession. Yes they've got the worst record the doctors for drink problems. It's been in the papers. One of my own GPs who just retired early he admitted it. He admitted that the stress that they're getting basically from the NHS with all the paperwork they are getting. If they like a drink it will drive them further and further down that road. I mean give him his due he never condemned me for having a good drink (M 62 HD)

Doctors are the biggest offenders (M 58 HD)

They're too rushed, and you're just in and out as quickly as possible. (F 26 HD)

I sometimes feel quite intimidated going to the doctors as well, because I feel like they're going what do you want, you're wasting my time (F 24 HD)

I just feel quite intimidated by them, I don't think I can always say what I want to say. But I've never had a GP that I've been with for a long time that knew me, so maybe I think if I had a GP like that maybe I would talk to them. (F 24 HD)

Table 5 Practice nurse

Positive responses

- I can talk to her and she's more understanding (F 55 ND)
- I think they possibly have more time and they are easy to talk to and they tend to have more social skills than GPs (M 57 SD)
- Because they'll still be young and they'll understand (M 18 HD)
- Normally they seem a bit more approachable than GPs (F 26 HD)
- I feel that you can talk more openly to a nurse, I don't know maybe its like a woman on woman kind of thing. You feel you can talk better to a nurse perhaps. And I feel they've got more time as well, they're more interested in what you're saying' (F 24 HD)

Negative responses

- I would only see the nurse if I need an injection or something like that (M 46 SD)
- I could talk to the practice nurse but I don't think I would go to her if I felt it was a real problem. You go to her if you need a boil lancing or a dressing changed (F 55 SD)
- There are many so they don't have one you go to each weekso I would find if it was me I wouldn't be comfortable going to her because she's not there all the time (F 59 ND)
- I've met young nurses and they're just not really serious to be honest, as the GP. You don't know whether to listen to them or not. Like I was waiting to go into a practice room once and there was some female nurses having a laugh about what they were up to last night and you kind of think well these lot don't know what they're doing (M 18 BD)
- I wouldn't really trust a 'wifie' (woman) as much as a bloke, not in that way with my alcohol problem(M 19 HD)

Table 6 Counsellor

Positive responses

- The counsellor deals with lots of problems and at the end of the day the counsellor has had everything (F 50 ND)
- The counsellor is more like homeopathic medicine, the whole body thing, the stresses and strains why you are drinking (F 55 SD)
- A counsellor would have had people a lot worse than having a drinking problem so they wouldn't think I was such a loser (M 18 BD)
- I think I would find the counsellor easiest to talk to because its less specific and you could perhaps talk to them about other types of things as well as drinking (F 24 HD)

Negative responses

- I'm just going to see the counsellor – there must be something wrong with his plumbing! I'm not going to see the counsellor at the surgery. Its just that barrier I think (M 46 SD)
- I don't know about counsellor, I don't know him, so if I don't know him, personally I don't think I would feel comfortable telling him anything (F 62 SD)
- I reckon if you go to a counsellor you must be pretty messed up. I'd hate the fact that I'm messed up(M 18 SD)
- They might be patronising and you'd have to be pretty messed up. Dignity you've got your dignity (M 18 HD)

Table 7 Alcohol worker

Positive responses

If the doctors surgery had some kind of special worker who could deal with these kind of things I think that would help. I know it sounds like a lot to have someone who deals with alcohol in a doctor's surgery but they're trying to do it with drugs aren't they? I know it's a lot of extra money but even if they had a session where you could go to the doctors surgery and there was someone there who knew exactly all about it and you wouldn't feel like you were talking to the doctor who was in a hurry to get the next patient in and get you out (F 50 ND)

I feel that they know what they're talking about. They are there to help and listen to you (F 62 ND)

I think if one had a terrible problem with alcohol you would probably accept advice from a person who knew all about it (F 62 SD)

Negative responses

I was thinking bloody hell, alcohol worker on the door and everyone's going to say 'he's going to the alcohol worker' (M 46 SD)

Alcohol worker, I wouldn't like to be seen there because of what people would think (M 51 SD)

I wouldn't like the stigma, where I think I would be ashamed, but probably if I had such a big, or maybe I would have to admit I had a problem wouldn't I? (F 63 SD)

I wouldn't particularly like to do it because if I'm talking to these people it means I probably have got a problem. I wouldn't like to do that, I wouldn't like to actually know I've got a problem (M 18 SD)

When you start seeing the alcohol worker you've hit rock bottom and you've got no friends so that would be the last, last resort (M 19 HD)

Table 8 Lifestyle worker

Positive responses

Somebody who advises on lifestyle you imagine that would be someone that is quite relaxed. You could go and perhaps just talk about things that you do or the things that you don't and how it effects your life (M 46 SD)

To me a lifestyle worker would be to see if they could change your lifestyle (F 59 ND)

Maybe that would be to do with diet and stuff like that, sort of general health rather than psychological. It would help that I was talking about other things with a lifestyle worker as well as if I had an alcohol problem (F 24 HD)

Negative responses

I've never heard of a lifestyle worker (F 50 ND)

If its lifestyle then it means its probably going into your family and its affecting them and stuff, not just the fact that you're drinking too much its obviously affecting something else with your lifestyle (M 18 SD)

Recommended limits and units of alcohol

All of the male patients, with one exception, were confused regarding the recommended limit for alcohol consumption and many admitted to not knowing or being unsure. Their estimates ranged from 7 to 35 units per week. However female

patients were much more knowledgeable. One patient in the 56+ age group answered for the whole group with the statement '21 for a man and 14 for a woman'. In the other (female) groups, while one patient admitted to being unsure their estimates were very accurate at 2–3 units per day

Table 9 Participants definitions of excessive drinking

<i>Quantity</i>	<i>Frequency</i>
More than one pint a day (M 58 SD)	Drinking more than three or four times a week (M 46 SD)
A couple of glasses of sherry (F 72 SD)	When you get drunk every night (M 46 SD)
More than two pints a day (F 24 HD)	Drinking everyday (F 26 HD)
A few pints every night (F 26 HD)	Drinking during the week (M 45 SD)
More than 10 glasses (F 72 SD)	Drinking in the afternoon (F 63 SD)
Seven to eight trebles in one night (F 59 ND)	
A bottle of wine (F 51 ND)	
A bottle of vodka a day (F 55 ND)	
More than a bottle (F 72 SD)	
A couple of bottles of sherry a night (F 56 SD)	
<i>Effects</i>	<i>Behaviour</i>
When you get (blind) drunk (M 18 HD)	Getting out of bed and thinking you have to have a drink (F 63 SD)
When you have to be carried home (M 19 HD)	When you drink to drown your sorrows (F 56 SD)
When you are sick (M 19 HD)	When you lie about drinking (F 63 SD)
When you feel ill the next day (m 51 SD)	When you buy a kebab (M 19 HD)
When your speech becomes slurred (PM 45 SD)	When you start to do silly things (M 19 HD)
When you have a hangover (F 55 SD)	When you run out of cash (M 18 SD)
When you can't remember the night out (M 18 SD)	
When you get in to fights (M 18 HD)	

and 12–14 units per week. Half the groups acknowledged that recommended limits differed for men and women. Most patients were aware of the unit system and what the unit equivalent was in terms of different drinks although there was some confusion over the number of units in a pint. A couple of (female) patients were also aware that the number of units in a drink could be affected by the strength of the alcohol. Patients had found out about recommended limits and units from a variety of sources including newspapers, magazines, billboards, TV news programmes, drink-driving campaigns, posters/leaflets in doctors surgeries, posters/leaflets in college and schools, personal social and religious education lessons at school, helplines, weight watchers, insurance documents, quiz nights and labels on bottles.

Problems and benefits associated with alcohol consumption

Patients were asked to describe what they thought were the problems and benefits associated with alcohol consumption (see Table 10). All patients believed alcohol consumption to have both positive and negative consequences. Most reported problems and benefits were based on personal or second hand experience. Older male patients mainly talked about relatives and friends who had experienced health consequences of alcohol con-

sumption while older women reported more social and behavioural problems and benefits. Middle aged males talked about friends whose personalities had changed or who had become aggressive, while middle aged women had family members who drank and many had seen or directly experienced alcohol related domestic violence. Young men were more inclined to recount their personal experience of the short-term physical problems of drinking too much and seemed unaware of the long-term implications of excessive alcohol consumption. Young women reported both short and long term consequences of excessive alcohol consumption highlighting the implications for their own sexual health in terms of infertility and sexual risk taking. Many of the male patients also linked alcohol with aggression and violence at sporting events. Three male patients, (two young and one older), had direct experience of alcohol poisoning. A couple of the heavy drinking male patients felt that the 'hangover' was due to the chemicals or preservatives in the alcohol rather than the alcohol itself.

Although most participants had a fairly good grasp of the effects of alcohol a few of the older participants reported benefits which were more likely to be cultural or folklore. For example one (older, male, heavy drinker) participant believed that alcohol must help preserve the body as it is

Table 10 Problems and benefits of alcohol consumption

<i>Problems</i>	<i>Benefits</i>
Dehydration	Loss of inhibitions
Sickness	Confidence
Dizziness	Sociability
Headache/hangover	Relaxation
Diarrhoea/diuretic	Nice taste
Shakes	Pleasurable experience
Red face	High/buzz
Hair loss	Reduced risk of heart disease
Weight loss/weight gain	Preserves the body
Strips enamel off teeth	Enhances the blood/good for the circulation
Blindness	Good for pregnancy
Alcohol poisoning	Soothes for teething
Liver disease	Revives ill children
Kidney disease	Antidepressant
Heart disease	Adds to the enjoyment of food
Pancreatitis	Makes a good night out
Brain damage	Heightens positive emotions
Stroke	Increases sexual appetite
Death	Enhances sexual performance
Infertility	
Impotence	
Sexual risk taking/rape	
Unwanted pregnancies	
Aggression/violence	
Child abuse	
Domestic violence	
Cruelty	
Crime	
Danger for driving	
Less able to carry out job/absenteeism	
Accidents	
Poor co-ordination	
Poor judgement	
Impaired senses	
Altered personality/ altered mental state	
Depression	
Hallucination	
Sedation	
Memory loss	
Physical dependence	
Shortage of money/expense	
Divorce/separation	
Broken homes/divided families/loss of friends	

used to preserve organs. Another (older, male, heavy drinker) participant used alcohol to soothe teething pain in children (see Table 11).

Drinking culture

All patients made reference to the culture of drinking alcohol. Men over the age of 30 talked

about drinking in younger generations and in the city. Patients felt it was the 'norm' for young people, both male and female, to drink, sometimes heavily. This was attributed to alcohol being freely available and affordable. Older men also talked about alcohol being associated with an area of heavy industry as well as with sporting events and personalities. Middle aged men discussed travelling on business and being expected to entertain and socialise in the evenings, events which always involved alcohol. Female patients tended to discuss the link between social events, socialising and entertainment with alcohol as well as the culture of having alcohol with a meal. Younger patients talked about drinking to keep up or in with their peers and being 'conditioned' to drink (see Table 12).

Other information about alcohol

Most patients agreed that more information about alcohol and alcohol-related problems should be made available to the general public. Suggestions included the provision of information on both the positive as well as negative effects of alcohol to provide a balanced viewpoint, the long-term negative health effects, and where to go for information, advice and help. The younger men also suggested that information on the effects of mixing alcohol with other drugs would be useful for their age group, and both younger men and women called for greater 'shock' tactics.

Other suggestions were that the labelling of alcohol content on cans and bottles should be made bigger, more visual and more visible, to have health warnings on labels and also on the shelving in supermarkets or shops where alcohol is sold, and to increase taxation on alcohol. Participants agreed that the only way to get messages about drinking across to the public was to use the mass media with advertisements, articles and stories on TV, in the newspapers and in magazines:

People know who reads what or who listens to what, getting the message across that way would probably be more relevant than putting a sign on the doctors surgery. You look at a sign in the doctors surgery and immediately forget it when you walk away.

(M 46 SD)

Table 11 Folklore

Well that's notable in France isn't it, cirrhosis of the liver	(M 75 ND)
But how can you say that drinking, why do they preserve kidneys and livers in Gin?	(M 58 HD)
Well that's to kill things namely the bacteria that break them down	(M 61 SD)
Well that wouldn't preserve them to work in a transplant they are not preserved that much	(M 78 SD)
It can be very, very enjoyable indeed, in fact my wife was recommended to, years ago when we were having our babies, our youngsters, milk stout and also Guinness, it was all supposed to enhance the blood, you know, it was recommended for medical purposes	(M 76 ND)
I've teethed my own kids and grand kids on Whiskey. Four grandchildren. When they are teething, a drop of whiskey on their gums. Four kids and four grandchildren, none of them kids have actually ever kept me or me wife up through the night with toothache	(M 62 HD)
My mother told me, well I was there but I didn't know, I was only two or three days old and I started turning blue and we lived next door to a book-maker and he had whiskey, we didn't, and she knocked through for the women next door, the book-makers wife to come out and she says I've given him a teaspoon full of whiskey. Why I don't know that was it and my mother says that I went (smacks lips). I never looked back after that. My mother told that so it must be true	(M 78 SD)

Table 12 Drinking culture

When you travel they take you out, you can't really refuse. Japanese saki and Korean I drink a lot more when I'm travelling. Travelling isn't very good for your lifestyle, you probably eat a lot and you drink more. So you have to be very disciplined.	(M 51 SD)
I know what you're talking about, what you were saying about lifestyle. I used to work away a lot. It's easier when you're home to say I'm going home I'll not have a drink. Or I'll just have a glass of wine. When you're away and you're staying somewhere, and there's a few of the boys, or clients, it's a different kettle of fish altogether	(M 46 SD)
I think the thing about alcohol, is the way it was with smoking in the 50s and 60s, smoking was considered the norm whereas alcohol consumption, you've just got to see the town on a Friday and Saturday night	(M 57 SD)
The Newcastle United players in the 50s coming out of the Strawberry (Pub) at twenty to three in the afternoon and going onto St James Park (Newcastle United Football Club)	(M 62 HD)
It's the most difficult thing, first of all you acknowledge it, then even if you have acknowledged it, they send you to a drying out clinic, those that go in there and come out they are in the great, great, great minority. There's only two I know who have gone in, you probably know them, Malcolm MacDonald, he was the only really heavy alcoholic I knew who has really cured himself of it, you know, the other one is another footballer, Merson, he's well on the way to being cured. This is his third year I think, they are the only two people. Now George Best, he's been in and out as many times, God bless him	(M 76 ND)
Like on Sunday, we always have a bottle of wine, always . . . and it was just part of the meal and I don't think there was anything wrong with that, it was just a bottle of ordinary wine	(F 62 ND)
Sometimes you feel you have to keep up with your mates, if your mates are drinking you join them. If they drink a canny bit then you drink a canny bit	(M 19 HD)
Just the social aspect of it, going out to the pub and meeting your friends. I don't think people go out and have a coffee together as often as people go out and have a drink down the pub together. It just fits into everybody's lifestyle really. It's a big part of, its just a big part of our . . . what's the word I'm looking for?	(F 24 HD)

Discussion

For those concerned with developing and refining health promotion programmes, prevention beliefs provide an indicator of the uptake of prevention messages and acceptance that prevention action is worthwhile. This was borne out in the fact that many of the patients in this study had amended their lifestyle behaviour to become more 'healthy'. However while over one third of the study population drank more than is recommended (see Table 2) only one patient reported attempts to reduce alcohol consumption. It was interesting to see that out of all the patients involved in these focus groups only two had asked for help to change their lifestyle. Previous studies have revealed that patients often expect their health professional to raise the issue of lifestyle rather than broaching the subject themselves (Wallace and Haines 1984).

While some research (Arborelius and Damstron Thakker, 1995; Lock *et al.* 2002) has shown that health professionals worry about losing rapport with patients if they discuss sensitive issues such as alcohol consumption conversely patients in this study felt more comfortable being questioned and advised by a health professional with whom they had already developed a good relationship and rapport. While the general practitioner was ranked overall as the most approachable it is interesting to note that females tended to prefer the practice nurse. Although there was a lack of understanding regarding the function of a lifestyle worker this concept received positive feedback. Perhaps future research should focus on evaluating the role of a lifestyle worker in general practice.

In contrast to other lifestyle behaviour, such as smoking, drinking alcohol has many perceived positive aspects which were identified by patients in this study and which can act as a barrier to behaviour change. However patients also identified many negative consequences of alcohol. In fact patients in this study held strong views about the effects of alcohol and what they considered to be excessive drinking. Health professionals may have their work cut out convincing some patients to follow guidelines regarding sensible drinking.

It was not surprising to find that many of the young patients in this study felt that alcohol was inextricably linked to social and entertainment activities and that many drink excessively to keep up or in with their peers. This was deemed to be

the norm and something they had been conditioned to do. Similar findings have resulted from both quantitative and qualitative studies and in other countries (Cooke and Eadie, 2001; Kloep *et al.*, 2001). Young patients also had little concept of the risk of alcohol and defined excessive consumption in physical terms or in relation to the consequences of such behaviour. Participants had a minimal knowledge of units. When asked about risks the participants described only immediate consequences. Female participants were more aware and concerned about risks. These findings replicate those of other focus groups carried out with young people (Cooke and Eadie, 2001).

These findings are something to consider as we wait for the government to produce the national alcohol strategy for England (Alcohol Concern, 1999). Perhaps more emphasis should be placed on public education campaigns to promote responsible drinking with particular focus on strengthening alcohol education for young people rather than expecting primary health care and the health care professional to take on the bulk of this work.

Limitations of the study

Although every effort was made to recruit patients from both general practice and via market research methods there remained a lack of representation from patients aged between 27 and 44. While the groups were not intended to be representative of the general public it must be noted that a section of the population were not available to provide their views which could limit the generalisability of the results. Saturation of views was ensured as far as possible by utilizing alternative recruitment strategies. This shortfall and the difficulties in recruiting patients may reflect the subject matter of the study. In addition the northeast of England has a strong culture of heavy drinking which may also have influenced the findings.

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Implementation of brief alcohol interventions by nurses in primary care: do non-clinical factors influence practice?

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Background. In the UK, GPs and practice nurses selectively provide brief alcohol interventions to risk drinkers. GPs' provision of a brief alcohol intervention can be predicted by patient characteristics, practitioner characteristics and structural factors such as the features of the practice and how it is organized. However, much less is known about possible modifiers of nurse practice.

Objective. Our aim was to investigate if patient characteristics, nurse characteristics and practice factors influence provision of a brief alcohol intervention by practice nurses in primary health care.

Methods. One hundred and twenty-eight practice nurses who had implemented a brief alcohol intervention programme in a previous trial based in the North of England were requested to screen adults presenting to their surgery and follow a structured protocol to give a brief intervention (5 min of advice plus an information booklet) to all 'risk' drinkers. Anonymized carbon copies of 5541 completed Alcohol Use Disorders Identification Test (AUDIT) screening questionnaires were collected after a 3-month implementation period and analysed by logistic regression analysis.

Results. Although AUDIT identified 1500 'risk' drinkers, only 926 (62%) received a brief intervention. Logistic regression modelling showed that patients' risk status as measured by AUDIT score was the most influential predictor of a brief intervention by practice nurses. However, risk drinkers who were most likely to receive a brief intervention were male. Patients' age or social class did not independently predict a brief intervention. The multilevel model was unable to identify any independent nurse characteristics that could predict a brief intervention, but indicated significant variation between nurses in their tendency to offer the intervention to patients. No structural factors were found to be positively associated with selective provision.

Conclusions. Patient and nurse factors contributed to the selective provision of a brief intervention in primary care. If patients are to experience the beneficial effects of a brief alcohol intervention, then there is a need to improve the accuracy of delivery.

Keywords. Brief alcohol intervention, implementation, practice nurses, primary care.

Introduction

Alcohol is a major cause of social, health and economic problems in the UK;¹ thus reduction in excessive drinking was one of the targets included in the Government White Paper, *Saving Lives: Our Healthier Nation*.² Alcohol problems, however, are responsive to opportunistic screening and brief interventions.³ Brief alcohol interventions are typically short in duration

(5–10 min) and can be defined as those practices that aim to identify a real or potential alcohol problem and motivate an individual to do something about it.⁴ It is now well known that a brief intervention in primary health care can result in a 20% reduction in consumption by excessive drinkers when compared with assessment-only controls.⁵

To date, the majority of brief intervention research in primary health care has focused on GP-led interventions,⁵ although some studies included nurses in a supporting role.⁶ However, as a brief alcohol intervention has begun to be rolled out into routine practice, it has become clear that GPs spontaneously involve nurses in delivering these interventions to patients.⁷ This accords with nurses' own view that health promotion is a core element of their

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role^{8,9} and that they are specialists in health promotion.¹⁰ Indeed, there is growing evidence to support the effectiveness of nurse-led brief interventions in both hospital and primary care settings.¹¹⁻¹⁵ Thus practice nurses are regarded as a greatly under-utilized resource within primary health care for screening and brief alcohol interventions.^{16,17}

Recent research has focused on ways of encouraging uptake and implementation of brief alcohol interventions by doctors^{7,18,19} and nurses.^{20,21} However, in the UK, implementation outcomes have included selective provision of a brief intervention to risk drinkers by GPs²² and by practice nurses.²¹ GPs' provision of a brief alcohol intervention could be predicted by patient characteristics, practitioner characteristics and structural factors such as the features of the practice and how it is organized.²²

Indeed, other research has shown that GPs' clinical decision making can be influenced by non-clinical patient characteristics,²³⁻²⁷ practitioner characteristics^{23,27} and practitioners' relationship with patients, their profession and the health care system.²³ Non-clinical patient characteristics that influence decision making include sex,²⁸⁻³⁰ age,^{28,29,31} educational attainment,^{28,31} income³¹ and socio-economic status.³⁰ Much less is known about possible modifiers of nurse practice. Consequently, the aim of this study was to investigate if patient characteristics, nurse characteristics and practice factors influence provision of a brief alcohol intervention by nurses in primary health care.

Methods

Patient screening data were provided by 128 practice nurses from general practices across the Northern region of England. These nurses had agreed to implement a screening and brief alcohol intervention programme in their practice for 3 months. Nurses were subjects in a randomized controlled trial of three training and support strategies (guidelines only, guidelines plus training, and guidelines plus training and support) to encourage screening and a brief alcohol intervention, detailed methods of which have been reported previously.²¹ All nurses were requested to screen adults (aged over 16 years) presenting to their surgery and follow an identical structured protocol to give a brief intervention (5 min of advice plus an information booklet) to all 'risk' drinkers. Anonymized carbon copies of the screening questionnaire were collected from all practices after a 3-month implementation period.

The screening questionnaire used was the Alcohol Use Disorders Identification Test (AUDIT)³² which is a 10-item questionnaire designed specifically for use in primary care. At a cut-off point of 8 out of a possible total score of 40, AUDIT identifies risk drinking with a sensitivity of 92% and a specificity of 94%.³² Risk drinking consists of both hazardous consumption, which

incurs increased risk of psychological or physical harm,³³ and harmful consumption, which is defined by the presence of physical or psychological symptoms.³⁴ Because AUDIT is reported to be less sensitive at identifying risk drinking in women,³⁵ the cut-off points of 7+ for women and 8+ for men were used in the trial. Figure 1 outlines the brief intervention process.

In addition to the 10 alcohol-related items, the screening questionnaire contained four questions relating to patients' age, sex, educational attainment and occupation. Self-reported data on occupation were coded according to the Registrar General's Social Class based on Occupation classification.³⁶ Patients who were not part of the working population were coded using five extra categories: homemaker, unemployed, student, chronic sick and retired. Nurses' personal characteristics were self-reported using an evaluation questionnaire which was given to nurses before the implementation trial began and which was returned to the study centre in a reply-paid, addressed envelope. Nurses indicated whether patients had received a brief intervention by ticking a box on the AUDIT questionnaire.

Data analysis

Data were analysed using SPSS version 8³⁷ and Stata version 7.³⁸ Initially the association between likelihood of receiving a brief intervention and patient characteristics was assessed using a chi-squared goodness of fit test separately for each characteristic. If an association was statistically significant ($P < 0.05$), that characteristic was selected for inclusion in a logistic regression analysis. Initially a fixed effect model was used to explore patient characteristics [at risk (binary), age (continuous), sex (binary)], nurse characteristics [age (continuous), training in brief intervention (binary)] and practice factors [group/solo (binary)] that may have influenced active intervention; however, in order to take into account the hierarchical data structure (subjects nested within nurses), Stata was used to fit a multilevel logistic regression model. The binary dependent variable was whether a subject had received a brief intervention (yes/no). Variation between nurses and variation between subjects were included as random effects; patient characteristics [at risk (binary), age (continuous), sex (binary), risk/sex (interaction)] and nurse characteristics [age (continuous), training in brief intervention (binary)] were then fitted as fixed effects. The sex of nurses was not included as a characteristic as 99% of nurses were female. Results are given in the form of odds ratios with 95% confidence intervals (CIs). Results from the two models were very consistent.

To account for possible misclassification of patients' risk drinking status as measured by AUDIT, preliminary logistic regression modelling considered AUDIT both as a continuous variable and as a binary variable, indicating risk as at its original cut-off point and at the recommended cut-off point (Table 1). There was a great

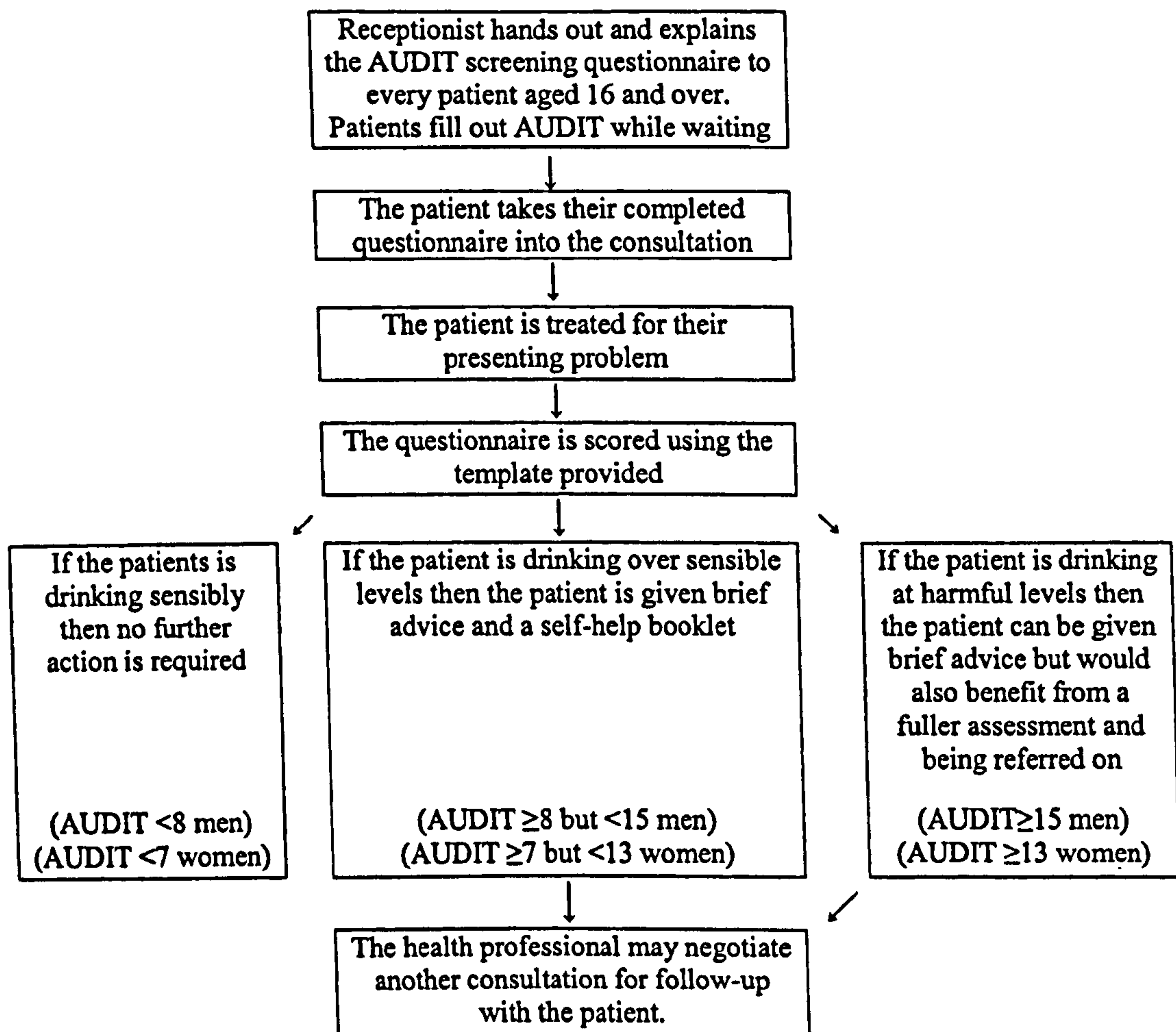


FIGURE 1 The screening and brief alcohol intervention process

TABLE 1 Properties of preliminary logistic regression models with AUDIT score as a continuous or a binary variable indicating drinking risk status

	Model 1 Continuous variable (score 0–40)	Model 2 Binary variable (original cut-off point: 8+)	Model 3 Binary variable (recommended cut-off points: 7+ females, 8+ males)
Cases accurately predicted	80.60%	82.12%	82.43%
Goodness of fit (chi-square) (df = 8)	88.46 $P < 0.0001$	34.68 $P < 0.0001$	23.62 $P < 0.05$

deal of consistency in the number and direction of significant predictors in the logistic regression models produced when the AUDIT score was considered as a continuous or a binary variable. However, model 3 provided the best interpretation of the data and so these results are reported.

Results

Nearly all of the nurses in the study were female (99%). Of 108 nurses who responded, their mean age was

45 years (SD = 7) and the mean time spent in general practice was just over 10 years (122 months; SD = 74). Of 110 nurses who reported a practice type, most worked in group practices (69%; $n = 76$) with a mean of four GP principles (SD = 2) and a mean practice list size of 5517 patients (SD = 3417). Of 100 responses concerning consultations, the mean number of consultations per week was 86 (SD = 56). Of 104 nurse responses, 47% ($n = 49$) reported having a least one postgraduate qualification. Finally, 77% ($n = 98$) of nurses had experienced direct training in the brief intervention protocol in addition to written guidelines, while 23% ($n = 30$) had received written guidelines only.

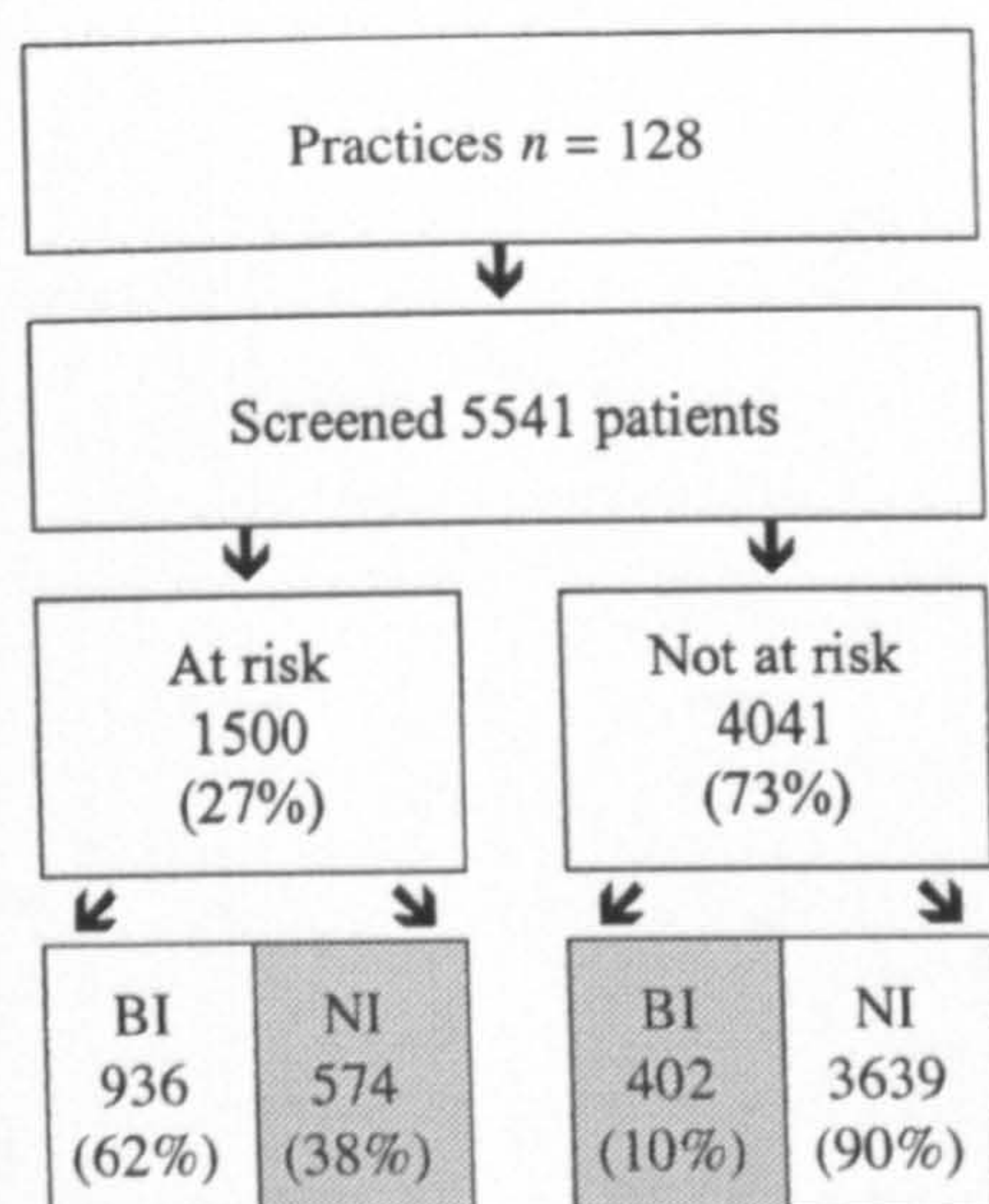


FIGURE 2 Numbers of patients screened and receiving a brief intervention (BI) or not (NI) by risk status (shaded boxes represent inappropriate patient management)

Nurses screened 5541 patients during the 3-month study period. A total AUDIT score was available on all screening questionnaires, and patient characteristics were self-recorded as follows: 99% ($n = 5491$) reported their sex, 98% ($n = 5458$) reported their age, 94% ($n = 5213$) reported their current occupation and 85% ($n = 4702$) reported their highest educational attainment.

Overall, 1500 (27%) patients were risk drinkers. Of these, 926 (62%) received a brief intervention while 574 (38%) did not. Moreover, 402 (10%) patients who were non-risk drinkers ($n = 4041$) received the intervention. In total, 18% ($n = 976$) of all patients did not receive appropriate management (see Fig. 2). Nurses who had received written guidelines only displayed more appropriate patient management than trained nurses because they were less likely to intervene erroneously with non-risk drinkers (Kruskal-Wallis chi-square = 49.9, $df = 2$, $P < 0.001$).

Table 2 shows the breakdown of patients and risk drinkers by socio-economic status groups, and the final column of this table reports the proportions of risk drinkers who received a brief intervention. There was a significant difference between proportions of risk drinkers who received a brief intervention on the basis of their sex (chi-square = 12.04, $df = 1$, $P = 0.001$) and age (chi-square = 13.8, $df = 6$, $P = 0.03$). A brief intervention was received by 66% of male risk drinkers compared with 57% of female risk drinkers. Patients aged 60–69 were most likely to receive a brief intervention (74%), while patients aged 16–19 were least likely (56%). There was no significant difference by occupation or education in proportions of risk drinkers receiving the intervention.

The logistic regression model describing the relationship of patient and nurse variables to the delivery of the brief intervention is reported in Table 3.

TABLE 2 Numbers and proportions of patients ($n = 5541$) by socio-economic status group who were risk drinkers and who received a brief intervention

Patient characteristic	Total sample (%)	Total risk drinkers (%)	Risk drinkers receiving brief intervention (%)
Sex			
Males	2177 (40)	772 (35)	510 (66)
Females	3314 (60)	712 (21)	408 (57)
Occupation			
I Professionals	108 (2)	38 (35)	21 (55)
II Managers	659 (13)	201 (30)	119 (59)
IIIN Skilled non-manual	822 (16)	228 (28)	125 (55)
IIIM Skilled manual	421 (8)	180 (43)	114 (63)
IV Semi-skilled	363 (7)	126 (35)	88 (70)
V Unskilled	112 (2)	37 (33)	23 (62)
Homecarer	754 (14)	99 (13)	59 (60)
Unemployed	342 (7)	147 (43)	100 (68)
Student	208 (4)	124 (60)	80 (64)
Chronic sick	65 (1)	27 (41)	15 (56)
Retired	1359 (26)	184 (13)	125 (68)
Education			
Primary	201 (4)	23 (11)	15 (65)
Some secondary	638 (14)	135 (21)	96 (71)
All secondary	2062 (44)	543 (26)	332 (61)
Technical	871 (18)	287 (33)	191 (67)
Tertiary	930 (20)	295 (32)	173 (59)
Age group			
16–19	218 (4)	116 (53)	66 (56)
20–29	779 (14)	341 (44)	218 (64)
30–39	888 (16)	306 (34)	176 (57)
40–49	948 (18)	292 (31)	174 (60)
50–59	987 (18)	231 (23)	149 (64)
60–69	942 (17)	134 (14)	99 (74)
70+	696 (13)	46 (7)	29 (63)

TABLE 3 Logistic regression predicting brief intervention (yes/no)

Predictor	Odds ratio	95% confidence interval	P-value
Patient characteristics			
Risky drinking status	50.33	37.83–66.95	0.000
Age	0.99	0.99–1.00	0.457
Sex	1.73	1.37–2.18	0.000
Practitioner characteristics			
Age	0.98	0.95–1.01	0.197
Brief Intervention Training	1.05	0.73–1.51	0.767

Patients' risk drinking status as measured by AUDIT score was clearly the most influential predictor. Thus, the odds of receiving a brief intervention increased by a factor of 50 for risk drinkers compared with non-risk drinkers. Patients' age did not independently predict a brief intervention. There was, however, an effect of patients' sex in that male patients had increased odds of a brief intervention irrespective of their risk status.

With regard to nurse characteristics, the multilevel model indicated significant variation between nurses (chi-square = 2.10 with 95% CI 1.90–2.31). However, neither nurse age nor whether the nurse had received training in brief interventions accounted for a significant amount of this variation.

Discussion

Despite the fact that nurses were requested to provide a brief intervention to all risk drinkers identified by a screening process, just two-thirds of the risk drinkers in this study received an intervention. In addition 10% of non-risk drinkers were given the intervention. This phenomenon was not restricted to just borderline risk cases.²¹ It was to be expected that patients' risk status as measured by AUDIT was the most influential predictor of a brief intervention by nurses. However, risk drinkers who were most likely to receive a brief intervention were male. Patients' age did not independently predict receipt of a brief intervention (nor social class based on occupation or educational attainment). The multilevel model was unable to identify any independent nurse characteristics which could predict a brief intervention, but indicated significant variation between nurses in their tendency to offer these interventions to subjects. It is likely that there are inherent characteristics of the nurse which have not been measured that might explain this. No structural factors were found to be positively associated with selective provision of a brief intervention.

It is well known that women are much less likely to receive alcohol-related interventions than men.²⁸ What is less understood is the relative role of practitioners or patients in influencing this decision. While it has been reported that patients expect and welcome preventive lifestyle advice,^{17,29,39–41} other research has shown that patients can resent health professionals dictating to them about lifestyle change.^{42,43} In fact, behaviour change experts believe that advice for those not ready to change could result in unhealthy behaviour and is potentially destructive to the patient–health professional relationship.^{44–49} Concern about possible negative reactions to preventive advice from patients may underpin the large number of opportunities for interventions that are being missed by health professionals.⁵⁰

Nurses in this study provided a brief intervention to patients in a more consistent manner than GPs in a previous study, although they screened fewer patients overall.²² However, GPs appear reticent about intervening with patients from higher social status groups, whilst nurses were more reticent about advising female risk drinkers. Thus it is possible that health practitioners are uncomfortable about advising patients similar in kind to themselves. However, women, who are the fastest growing group of risk drinkers, were much less

likely than men to receive alcohol advice so there is a likely future health problem for both women themselves and possibly for their families and potential children.

It is not clear why nurses who received written guidelines only displayed more appropriate patient management than trained nurses. Perhaps nurses who received no training were strongly protocol driven while trained nurses may have felt more confident about using clinical judgement to determine which patients needed the brief intervention.

If, however, patients are to experience the beneficial effects of a brief alcohol intervention, then there is a need to improve the accuracy of brief intervention delivery in primary health care both by nurses and by GPs. Research aimed at implementing evidence-based health care may need to take account of non-clinical factors influencing intervention delivery in the real world of routine practice. A qualitative research design may be able to explore this in more detail.

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ORIGINAL ARTICLE

Screening and brief alcohol interventions: What, why, who, where and when? A review of the literature

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Abstract

There is a significant body of literature in the field of screening and brief alcohol intervention. This paper reviews that literature in order to provide a comprehensive overview of this important field of study. The format of the paper is not intended to be one of a systematic review with meta-analysis, but rather a gathering of data to give readers a concise summary of the vast quantity of literature relating to screening and brief alcohol intervention. The review will provide a working definition of screening and brief intervention and explain why it is considered to be an important element of preventive care. Data will also be presented relating to the effectiveness, attitudes, involvement, cost and accuracy of a variety of health professionals involved in screening and brief intervention along with the patient's perspective on these health professionals' roles. The review will also examine the settings in which screening and brief intervention can and does take place.

Keywords: *Alcohol, intervention, review.*

What?

Screening and brief alcohol interventions are typically short in duration (5–10 min) and can be defined as those practices that aim to identify a real or potential alcohol problem and motivate an individual to do something about it (Babor and Higgins-Biddle 2001). Alcohol problems are responsive to screening and brief interventions (Moyer et al. 2002). It is now well known that screening and brief intervention can result in a 20% reduction in consumption by excessive drinkers when compared to assessment-only controls (Freemantle et al. 1993). Excessive drinking is a term that includes both hazardous and harmful drinking. The International Classification of Diseases (World Health Organization 1992) defines hazardous drinking as an occasional, repeated or persistent pattern of use that carries a high risk of causing damage to physical or mental health, but which has not yet resulted in significant ill effects. Harmful use is defined as a pattern of use that is already causing physical or mental damage to health.

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Why?

Alcohol is a major cause of social, health and economic problems in the UK (Alcohol Concern 2000). Excessive alcohol consumption accounts for up to 40 000 deaths, and a significant proportion of accidents and working days lost each year (Office for National Statistics 2001). Alcohol is also the second most important proven cause of cancers. The most common types of cancer associated with excessive alcohol consumption are oropharyngeal, throat, mouth, pharynx, larynx, oesophagus, breast, liver, colon, and rectum (Austoker 1994). Economic costs for the UK related to alcohol consumption have been reported to be more than £20 billion annually, with costs to the National Health Service making up £1.7 billion of total (Strategy Unit 2003). Thus reduction in excessive drinking was one of the targets included in the Government White Paper *Saving Lives: Our Healthier Nation* (Department of Health 1999). In addition, alcohol is the subject of a proposed National Harm Reduction Strategy for England set to be implemented in 2004 (Strategy Unit 2002).

Who?

Screening and brief intervention can be carried out by a range of professionals who have contact with patients; most commonly screening and brief intervention have been the remit of the general practitioner (GP).

General practitioners

Evidence for effectiveness. To date, the majority of screening and brief intervention research has focused on GP-led interventions. In 1993, a systematic review of the literature identified a number of randomized controlled trials of screening and brief intervention. Secondary analysis showed that screening and brief intervention was effective and cost-effective at reducing excessive alcohol consumption (Freemantle et al. 1993). A more recent meta-analytic review of trials of screening and brief intervention offers additional positive evidence to that presented in the previous review (Moyer et al. 2002).

Attitudes and involvement. GPs are well placed for screening and brief intervention work since they develop long-term relationships with patients, command a high level of respect and have a high level of access to the population. However, the potential of GPs to reduce the prevalence of alcohol-related problems contrasts sharply with current practice (Boulton and Williams 1983, Reid et al. 1986, Rydon et al. 1992, Spandorfer et al. 1999). While GPs believe they have a legitimate role in working with excessive drinkers, they feel ill equipped to do so (Anderson 1985, Coulter and Schofield 1991, Kaner et al. 1999a, McAvoy et al. 1999, Aira et al. 2003). They also lack motivation and satisfaction from working with this group of patients (Anderson 1985). GPs cite lack of time, lack of training and failure of health policies to support GPs who want to practice prevention (Kaner et al. 1999a, Aira et al. 2003) as well as concern about possible negative reactions from patients (Williams et al. 1989). Research has shown that GPs can worry about losing rapport with patients if they discuss sensitive issues such as alcohol consumption (Arborelius and Damstron Thakker

1995, Lawlor et al. 2000). Some GPs hold negative attitudes to problem drinkers (Deehan et al. 1998a), although, with education and training, it has been shown that GPs can develop positive, non-judgemental attitudes (Clement 1986). GPs are also increasingly busy with an average 140 consultations per week excluding clinics and home calls (RCGP et al. 1995). GPs who have direct experience of providing systematic screening and brief intervention report that it is difficult to establish rapport with patients who need advice and express a lack of confidence in their ability to advise patients about sensible drinking (Beich et al. 2002).

Patients' attitudes. Patients claim to respond more positively to advice when delivered by a health professional with whom they have developed a relationship and rapport. Patients state that either the GP is the preferred health professional to discuss alcohol issues (Lock 2004), or they view practice-nurse- and GP-delivered interventions as equal (Eggleston et al. 1995). Most patients who said they would prefer to go straight to their GP with any alcohol concern or problem did so either because they had a good relationship with them and had known them for a long time, or because that was traditionally whom they would go to. They also thought the GP would have the training and experience to deal with the problem or would refer them on if necessary. Concerns about going to the GP arose from those who did not have a good relationship with their doctor or who did not want to waste the doctor's limited time (Lock 2004).

Cost. In their seminal systematic review, Freemantle et al. (1993) proposed that the direct cost per screening and brief intervention delivered by a GP to a person who consumes alcohol to excess was less than £20.

Accuracy. GPs exhibit selective provision of screening and brief intervention to excessive drinkers. GPs' provision of screening and brief alcohol intervention can be predicted by patient characteristics (age, education and occupational status), practitioner characteristics (member of Royal College of General Practitioners (RCGP), training in screening and brief intervention) and structural factors (size of practice, consultation length; Kaner et al. 2001).

Nurses

Evidence for effectiveness. To date, the majority of screening and brief intervention research has focused on GP-led interventions (Freemantle et al. 1993), although some studies included nurses in a supporting role (Kristenson et al. 1983, Persson and Magnusson 1989, Suokas et al. 1993, Fleming et al. 1997, Ockene et al. 1999). Indirect evidence of the efficacy of nurse delivery of screening and brief intervention was reported in a World Health Organization (WHO) multi-centre study involving 10 countries (Babor and Grant 1992). This WHO study, which included doctor or nurse delivery of 5 min of brief advice about alcohol, reported an average 25% reduction in alcohol consumption in male intervention patients when compared with assessment-only controls. Although six countries in this study used nurses in the delivery of screening and brief intervention, they did not report separate data for nurses and other health advisers.

However, there is growing evidence (outlined below) to support the effectiveness of

nurse-led screening and brief intervention in a variety of settings. Studies that have investigated the effectiveness of nurse-led screening and brief intervention approaches for problem drinkers in hospital settings have reported that a single session from a specialist nurse alcohol counsellor resulted in significantly better outcomes than routine medical care for male problem drinkers (Chick et al. 1985); and that three increasing levels of nurse-administered screening and brief intervention resulted in an overall reduction in alcohol consumption for the sample as a whole (Watson 1999). While none of the interventions in this study was more effective than the assessment-only control condition, this study lacked the power to detect such differences. School-based studies have reported significant reductions in quantity of alcohol use and intention to drink by US urban high-school youths who received screening and brief intervention from registered nurses compared with controls (Werch et al. 1996, 1999, 2003).

Some studies have reported in primary health-care settings, screening and extended counselling by primary health-care nurses is more effective in reducing patients' alcohol consumption than screening and brief intervention (Woollard et al. 1995, Israel et al. 1996). Although one study found that even 45–60-min health checks conducted by nurses had little effect on alcohol use (Imperial Cancer Research Fund OXCHECK Study Group 1995), other studies in primary health care have found that nurse-led screening and brief intervention reduced alcohol intake and Gamma Glutamyl Transferase (GGT; McIntosh et al. 1997, Tomson et al. 1998). There was also no difference in effect from screening and brief intervention delivered by a GP or by a nurse (McIntosh et al. 1997).

Attitudes and involvement. Nurses are arguably in the best position to do most health promotion because they form the largest group of health-care professionals and have repeated patient contact (Rowland and Maynard 1989, Rassool 1993). GPs have also delegated an increasing amount of work, particularly health-promotion work, to primary care nurses (Calnan and Williams 1993, Broadbent 1998). As screening and brief alcohol intervention have begun to be rolled out into routine practice, it has become clear that GPs spontaneously involve nurses in delivering these interventions to patients. In a recent trial aimed at encouraging GPs to become involved in screening and brief alcohol intervention, 40% obtained assistance from their practice nurse (Kaner et al. 1999b). This accords with nurses' own view that health promotion is a core element of their role (Gott and O'Brien 1990, Ross et al. 1994, Sourtzi et al. 1996) and that they are specialists in health promotion (Mackereth 1995). However, the potential for nurses to reduce the prevalence of alcohol-related problems contrasts sharply with current practice (Deehan et al. 1998b). While many nurses may feel that it is important to screen and intervene for patients with alcohol-related problems (Rowland and Maynard 1989), nurses often fail to do so (Gerace et al. 1995). Research has shown that many nurses hold negative attitudes towards engaging in alcohol-intervention work (Gerace et al. 1995), worry about losing rapport with patients if they discuss sensitive issues such as alcohol consumption (Lock et al. 2002), are pessimistic about successful treatment outcomes (Rowland and Maynard 1989, Rassool 1993), and feel ill-equipped to care for people with an alcohol problem (Brown et al. 1997, Owens et al. 2000). However, with experience, seniority, education and training, this negative view can be modified (Rassool 1993, Gerace et al. 1995, Brown et al. 1997, Ockene et al. 1997). In addition to training, nurses feel that they would benefit from further resources, including more staff, more time, more information,

specialist staff, increased help from outside agencies and increased management support (Brown et al. 1997). In comparing GPs' and nurses' attitudes to alcohol screening and brief intervention, nurses report asking patients about alcohol consumption less than GPs, rate their knowledge and skills less confidently than GPs and were also more worried than GPs that patients would react negatively to questions about alcohol (Deehan et al. 1998a, Johansson et al. 2002).

Patients' attitudes. One study, which sought to examine patients' views on the most appropriate professional to deliver preventive advice in primary health care, found that patients viewed the nurse- and GP-delivered interventions as equal (Eggleston et al. 1995). Another study found that young women in particular preferred to speak with the nurse about alcohol issues as opposed to with the GP (Lock 2004). In this study it was felt by some participants that nurses would have more time to discuss alcohol issues than a GP, and that they were easy to talk to, approachable and understanding, yet persuasive. Others felt that the nurse would not have the training to give alcohol-specific advice and information (Lock 2004).

Cost. Nurses are regarded as a greatly under-utilized resource for screening and brief alcohol intervention since they currently detect low numbers of excessive drinkers and intervene with even fewer (Deehan et al. 1998b, Owens et al. 2000, Duaso and Cheung 2002). But nurses have a relatively high contact exposure to patients (Jeffreys et al. 1995). Moreover, a number of nurses work with alcohol issues including: practice nurses, health visitors and district nurses (Sourtzi et al., unpublished data, Calnan et al. 1994), community psychiatric nurses (CPNs; Roman, unpublished data), and midwives (Murphy 1996). Consequently, there is a great potential for the reduction of alcohol-related morbidity and social harm by harnessing the skills of nurses. Screening and brief intervention by nurses is likely to be less expensive than if carried out by GPs. Hospital nurses were reported to be more cost-effective at screening for alcohol problems than were doctors, despite lower positive case-identification rates (Tolley and Rowland 1991).

Accuracy. Primary care nurses exhibit selective provision of brief intervention to risk drinkers (Kaner et al. 2003). Patient (sex) and nurse factors contribute to this selective provision (Lock and Kaner 2004). Excessive drinkers who are most likely to receive brief intervention from nurses are male and, although there is significant variation between nurses in their tendency to offer brief intervention to patients, no independent nurse's characteristics are identified that can predict provision of brief intervention. However, nurses provide brief intervention to patients in a more consistent manner than GPs, although they screen fewer patients overall (Kaner et al. 2001).

Other health professionals

A variety of other health professionals have successfully been involved in screening and brief alcohol intervention (Babor and Grant 1992). In particular, alcohol counsellors have been shown to be as effective administering brief interventions as they are with extensive cognitive behaviour therapy (Shakeshaft et al. 2002). Alcohol workers are also successful in screening and brief alcohol intervention (Wright et al. 1998). However, seeing a

counsellor or alcohol worker can cause anxiety to patients owing to issues around stigma and labelling (Lock 2004). Perhaps a shift in emphasis away from the term 'alcohol' and towards 'lifestyle' would allow such health professionals to shake the stigma attached to their roles (Lock 2004).

Where?

Primary health care

Primary health care has long been identified as a suitable setting for alcohol screening and brief interventions (Anderson 1985, Anderson 1993, Deehan et al. 1998a). General practice is a particularly valuable point of contact for the delivery of brief interventions for excessive alcohol use because of the large proportion of the population who access their general practice each year (Fraser 1992). In addition, excessive drinkers represent 20% of patients on practice lists and present twice as often as others (Anderson 1985). Randomized controlled trials in general practice have demonstrated the effectiveness of screening and brief interventions; however, studies conducted in the real-world conditions of general practice show somewhat less benefit than in those carried out under optimal research conditions, but nevertheless they support the effectiveness of brief interventions (Freemantle et al. 1993). However, GPs who experienced providing systematic screening and brief intervention in their own practice found the extra workload onerous and that it disrupted normal patterns of work (Beich et al. 2002).

Secondary health care

The accident and emergency department (A&E) is in a potentially pivotal position to detect and intervene with patients who have alcohol problems, as more people attend A&E than outpatients, often attend for a crisis when individuals are more accepting of help, and are often suffering from the effects of acute or chronic alcohol misuse. Screening and brief alcohol intervention has also been shown to be effective in this setting (Wright et al. 1998, Huntley et al. 2001, D'Onofrio and Degutis 2002). In surgical and general medical wards, it has been estimated that up to 150 000 admissions each year are related to excessive alcohol consumption (Strategy Unit 2003). Screening and brief intervention research in general hospital wards has been less extensive, and evidence for the effectiveness is less impressive than primary health care – although still positive (Chick et al. 1985). Outpatient clinics have also been shown to be useful locations for the delivery of screening and brief intervention (Wilk et al. 1997, Smith et al. 1998).

Other settings

Screening and brief alcohol intervention have also been administered in nonmedical settings such as schools (Werch et al. 1996, 1999, 2003), the workplace (Richmond et al. 2000, Lapham et al. 2003a, 2003b) and even drinking establishments (Reilly et al. 1998, Van Beurden et al. 2000).

When?

While it has been suggested, from quantitative research, that patients expect and welcome preventive advice (Wallace and Haines 1984, Wallace et al. 1987, Richmond et al. 1996, Foss et al, 1996, Duaso and Cheung 2002), other research, which has explored this issue in a qualitative manner, has shown that patients can resent health professionals dictating to them about lifestyle change (Stott and Pill 1990, Miller et al. 1993). In fact, behaviour change experts believe that advice for those not ready to change could result in unhealthy behaviour and is potentially destructive to the patient–health professional relationship (Prochaska and DiClemente 1982, Kelly 1992, Rollnick et al. 1993, Prochaska 1995, Butler et al. 1996, Samet et al. 1996). However, patients do appear to respond positively to advice when in an appropriate context (Lock 2003) and if the advice directly relates to their concerns about health. Unfortunately, this may not include alcohol consumption (Stott and Pill 1990, Kelly 2002). Patients most commonly report experiencing opportunistic screening and brief intervention in primary health care when consulting for a specific health problem and during preventive health checks (such as smears, mammograms and well-person clinics). However, other situations in which patients have received screening and brief intervention include occupational checks, insurance medicals, new patient registrations, attendance for repeat prescriptions for contraceptives, hospital consultations and admittance to A&E (Lock 2003).

Conclusions

Excessive alcohol consumption is a major problem in the UK and, while it is responsive to screening and brief intervention, health professionals often fail to identify and advise excessive drinkers. Although health professionals feel it is a legitimate area of their work, they continue to feel ineffective, dissatisfied and unmotivated to carry out screening and brief intervention. Positive attitudes and practices can only be developed via appropriate education and training.

However, patients are receptive to screening and brief intervention when carried out in an appropriate setting and by a health professional with whom they feel comfortable. Patients cite the GP and the practice nurse as their preferred source of information and advice. Patients also appear to respond more positively when the advice they receive relates directly to the problem for which they are presenting.

There are many opportunities for health professionals to carry out screening and brief intervention both in primary and secondary care and within the A&E department. However, if patients are to experience the beneficial effects of brief alcohol intervention, then there is a need to improve the appropriateness of brief intervention delivery.

Costs to society related to excessive alcohol consumption far outweigh the cost of a health professional administering screening and brief intervention to patients. Persistent efforts are now being made to persuade policy and decision makers to create the conditions that are needed to support the widespread implementation of screening and brief intervention for excessive alcohol consumption.

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