INTRODUCTION

Rates of identification and active management of heavy drinkers by health care professionals are low (Deehan et al., 1998), despite good evidence about the effectiveness of brief interventions in health care settings (Moyer et al., 2002). There is a need to develop additional ways of encouraging access to intervention packages. The rapid development of the World Wide Web presents an exciting opportunity to deliver an intervention to large numbers of people, many of whom may not ordinarily define themselves as having a drinking problem or may not otherwise seek help. In the UK, for example, 42% of homes have internet access and an estimated 55% of adults have accessed the internet at some time (Nielsen/Net ratings ‘net update’, July 2003). This is equivalent to 25.2 million adults. These figures represent a very large potential number of users for web-based interventions.

Previous research exploring the role of brief interventions for people with excessive alcohol consumption provides a useful framework for developing a web-based programme. Borsari and Carey (2000) found that a 1 hour session giving students feedback about their personal consumption and information about drinking norms, alcohol-related problems and alcohol expectancies, reduced their consumption at 6-week follow-up. Heather et al. (1986) demonstrated the effectiveness of a self-help manual in a controlled study with media recruited problem drinkers. A further development, and the rationale for its design, and presents data about its use describes the development of a web-based drinking manual (Linke, 1989). This approach adopted the ‘stages of change’ model (Prochaska and DiClemente, 1994) to structure the intervention, together with cognitive behaviour therapy (CBT) strategies to encourage change and prevent relapse. A further study by Heather et al. (1990) found that at 6-month follow-up, subjects who received a behaviourally based self-help manual did better than those who received only general advice and an information booklet. The provision of additional telephone contact did not improve outcome. Sitharhan et al. (1996) also conducted a treatment by correspondence study. In their research a CBT manual was compared to an information only manual accompanied by instructions on self-recording alcohol consumption. They found that the CBT manual produced greater reduction in drinking at 6 and 12 months.

There is a small body of evidence that treatment manuals may be successfully adapted for administration by computer (Squires and Heister, 2002). A programme for ‘non-alcoholic heavy drinkers’ was developed and evaluated by Hester and Delaney (1997). They adapted ‘behavioural self-control training’ for a Windows-based PC (BSCPWIN), which participants could use either at a clinic or could take home on a disk. The results showed that individuals in the experimental group significantly reduced their drinking compared to pre-treatment drinking levels and a 10-week waiting period. Two pilot studies have shown that people with drinking problems use screening tools on the Internet (Cunningham et al., 2000; Cloud and Peacock, 2001), but treatment manuals have not, as yet, been adapted and made available on the net. This paper describes the development of a web-based drinking manual and the rationale for its design, and presents data about its use and potential value.

MATERIALS AND METHODS

The website

The DYD website (www.downyourdrink.org) was based on the ‘Down Your Drink’ manual (see above). Users were encouraged to spend time in the ‘contemplation’ phase
planning their reduction of drinking. Cognitive behaviour therapy (CBT) strategies were then utilized both for the ‘action’ phase, and for relapse prevention in the ‘maintenance’ phase. The structural elements of the website are a homepage, the Fast Alcohol Screening Test (FAST) (Hodgson et al., 2002), motivational questions (devised in consultation with Dr S. Rolnick), drinking diary, automated emails, quizzes, online discussion group and recreational area (the ‘Cyber-saloon’). Use is made of images and interactive features such as ‘mouseovers’. To avoid long download times, ‘information-heavy’ components such as video clips are not used. The programme was designed for use over 6 weeks (in six 1-week modules), and users are requested to log on to the site on one occasion each week for the duration of the programme. The programme does not allow them to log on more frequently. On each occasion, users are requested to read the materials presented for that module and to complete the questionnaires, the ‘thinking drinking log’ and the drinking diary for the previous week’s drinking. At the end of week 6, users are invited to give feedback about the programme in rating scales and free text answers to open ended questions. Links to related sites, including portals which provide a gateway to potentially relevant sites, run the risk of users leaving the original site as they ‘surf’ away, and we therefore deliberately restricted the number of links.

Study design and measures
The objectives of the study were to describe the patterns of access, registration and usage of the website, and to ascertain its potential to enable users to achieve healthier patterns of drinking. Visitors to the site who scored 3 or above on FAST (range 0–16) were recommended to register to participate in the programme. Those who accepted were asked to complete the study consent procedure, and fill in a number of baseline assessment questionnaires, and questions on age, sex, ethnic origin and social class (Standard Occupational Classification National Statistics Socio-economic Classification: Office for National Statistics, 2000). The assessment also included a measure of alcohol dependence (SADD; Davidson and Raistrick, 1986), a measure of mental health symptoms (CORE-OM; Barkham et al., 2001) and an abbreviated form of the Alcohol Problems Questionnaire (Williams and Drummond, 1994). All those who registered for the programme were encouraged to keep and submit a weekly drinking diary for each of the 6 weeks of the programme. The completion of drinking diaries was encouraged throughout the programme, but was not compulsory.

All users who completed the final stage of the programme were presented with an on-line opportunity to provide free-text feedback on the site. In addition, they were sent electronic follow-up questionnaires, asking specifically about the functioning of the site, the graphics and images, the style of the writing, the usefulness of the advice and the quality of the information provided. Further questionnaires were sent electronically to those who missed three or more sessions, asking why they had decided not to continue.

Recruitment
Promotion included press releases and news items in the national media, 50 000 leaflets distributed to general practitioners, articles in professional publications in the alcohol field, listing the website with some popular Internet search engines and setting up links from the health pages of appropriate websites (e.g. NHS Direct Online, BBC). The site was launched in October 2001.

RESULTS

Recruitment and completion of the DYD programme
The mean number of visits was 1039 per month (range 706–1541) or 34 per day (range 25–49). Data for all subjects who registered between 1 October 2001 and 31 March 2002 were included in this analysis. In this period, 1319 people (741 males; 578 females) registered from 41 countries. 656 (49.7%) were single, 663 (50.3%) married, 634 (48.1%) had at least one child and 685 (51.9%) had no children. A total of 452 (34.5%) stated that they found the site directly through a search engine, and a further 220 (18.2%) were directed from another website. Only 341 (26%) learned about the site from a newspaper or magazine. Users were predominantly from social classes 1 (professional), 2 (managerial and technical) and 3 (skilled non-manual) and there was a predominance of ‘white British’ (57.3%), followed by ‘white other’ (19.5%) and ‘white Irish’ (6.1%). There were a small number of users who defined themselves as ‘Asian’ (3.2%).

Of the 1319 people who registered, 815 (61.8%) completed week 1. The completion rates of the weekly DYD programme were as follows: week 2: 426 (32.3%); week 3: 264 (20%); week 4: 179 (13.6%); week 5: 135 (10.2%) and week 6: 79 (6%). Complete drinking diary data was available for 53 users (30 men; 23 women). The mean number of units consumed decreased from 32.8 (range, 0–99) to 23.15 (range, 0–65).

User feedback
The 79 users who completed all six sessions were sent an electronic follow-up questionnaire, of whom 37 (46.8%) returned a completed form. Twenty-seven of these (74%) stated that they had never sought help for their drinking previously, and 34 (90%) had not received any additional help other than DYD. The routes followed to the programme were varied. Eighteen of the respondents said that they had deliberately searched for information about alcohol problems on the internet, whereas 14 had heard about the site from the media publicity. None of these respondents had seen the leaflet sent to GPs. Twenty-one used the site from a computer at home and 14 from a computer at work. As a group, these respondents were not otherwise frequent users of the internet: 30 used it for less than 1 h/day and had never previously sought health advice on-line. Eight had told their spouses that they were following the programme, and 13 had told another member of their family. Nine had told a work colleague. Over 80% stated that they found the programme ‘helpful’ or ‘very helpful’ and that they would recommend the programme to someone else. Fifty users (63% of completers) completed the free-text feedback facility at the end of the final session. A selection of their comments is reproduced in Fig. 1.

The feedback contained positive comments about the overall content of the course and the style. It was felt to be ‘non patronising’, enjoyable and supportive. There were mixed views about the graphics and images, ranging from ‘corny’, ‘boring’ and ‘a bit flat’ to ‘very good’ and ‘fine’.
There were comments in favour of the general approach of supporting health promotion and reducing hazardous drinking and the harmful effects of excessive alcohol consumption.

Of the 230 users who missed three or more weeks of the programme in the first 3 months, 37 (16%) responded. Of these, 13 said that they intended to continue the programme at a later date whilst nine said that the programme was too time-consuming. Seven replied that the site was too difficult to use and six that they had discovered that their drinking habits were harder to change than they had originally thought. Five had decided to seek help elsewhere.

DISCUSSION

This research is exploratory. We acknowledge that those users who completed the questionnaires and provided feedback constitute only a small proportion of those who originally visited the site. While their experience is not representative of all users, it provides indications about the potential usefulness of DYD for those who decide to follow the programme.

Those who completed the full course were positive about the use of the internet as a means of providing help to problem drinkers. They found the DYD website to be efficient, well-designed and generally easy to use. It was evidently helpful to the users that the site was available 24 h a day and 7 days a week, with no charge.

This project attracted thousands of visitors to the website, illustrating the potential power of this type of intervention to reach a large population. The most important recruitment methods to the website were links from search engines and other websites. The fact that search engines were most frequently used to access the website by those who completed the feedback questionnaires, suggests that they were probably already contemplating taking action to address their drinking patterns, and were actively looking for information that could potentially help them. Media publicity appears to have been less influential, and there was no evidence that the leaflets sent to GPs and other agencies had any impact. It may be that health professionals and others working in the alcohol field will not actively promote the use of a web-based intervention, and this is the subject of a further research study.

Users of the site were predominantly middle class, middle aged, white and European, indicating failure to reach socially disadvantaged groups and ethnic minorities. This is almost certainly primarily a function of internet use as a whole and patterns of use may change as internet access is extended to a broader range of the population, but might also be assisted by providing access in GPs’ surgeries. Though DYD attempted to be socially inclusive in its choice of images, the content and

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“I would still like to drink every day but am proud of myself that I don’t. I have reduced my drinking by at least 70% - WOW!!! I do find that I have to work hard at it.

“Lost weight more energy boring and fed up I liked it all. The Drinking Diary is a great idea, but it’s such a fag to do. I am glad it wasn’t compulsory as it would have put me off. Maybe a good idea to integrate it further into the program, so that it really encourages you to do it, no none get on better with the family

“In generally the web site worked well. I found the drinking diary a bit confusing a tricky to use. Would have been better id if worked from the evening backwards for entries and was not clear if you could make multiple entries. The information was good.

“Excellent course. Best bits were learning to plan drinking for the evening rather than just ‘going for it’ In conjunction with this, the Blood alcohol bit and pace of drinking was good too. Without that knowledge, the plans made when sober can go out of the window. Its all to easy to plan to have 4 beers in the evening, but then end up having them all in the first 10 minutes, getting very drunk as a result, then being out of control of plans made while sober because the ‘drunk brain’ takes over and says ‘sod it, lets have a few more’ One thing I would say is it would be useful to have access to tools like the blood alcohol calculator from the front page. Appart from that, very useful course Thanks

“Just knowing that lots of people go through the same sort of feelings. I felt as if I was not alone. I found the course very easy and interesting to follow. The graphics were great and the site worked very smoothly no problems at all.

“It was not possible for me to access a computer every week - it should be possible to enter the Diary after a delay, you shouldn’t have to do it every week - that’s why I have big gaps in mine. I have cut down my drinking, so the course has helped me, but I still have weekend binges - the ‘safe limit’ should be raised perhaps !!!
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Fig. 1. Free text user feedback.
presentation of the site may have also been influential in restricting its use by certain sectors of the population. Translation of the site into minority languages might be helpful, and future work might usefully explore how the images used might be modified, in order to encourage use by such under-represented groups.

A key feature in website design is to keep people on the site and not lose them to other sites. This is known as ‘stickiness’, and is notoriously difficult to achieve as the Internet culture supports clicking rapidly through sites without looking closely at the material contained within them. Furthermore, drop out rates for brief interventions with unselected participants who are not actively seeking treatment are often high (Heather, 2001). Elements of both these potential problems were present in the DYD programme. There was a substantial fall-off of participants at the first stage of the programme, and it is likely that many of these were people who were simply curious about the programme but did not intend to change their drinking habits. However, drop-out continued throughout the 6-week programme, with the feedback suggesting that the reasons were complex and varied, some dropping out because changing drinking habits is difficult and others because the programme was time-consuming and challenging. Because of the inevitably low response rates from those who dropped out of the programme, we do not know if they derived any benefit. Future studies of web-based interventions of this kind might include ‘exit surveys’ at all stages. Some responses indicated that the early weeks of the programme contained information that was of benefit, along with the much appreciated daily drinking tips. It would be useful to investigate whether even such limited intervention can have an impact on those with ‘mild’ drinking problems.

We did not attempt to undertake a formal experimental evaluation of the effectiveness of DYD. However, given the acceptability of the website to some, a randomised controlled trial to assess the effectiveness of the website is now warranted. The Internet offers excellent opportunities for controlled investigations in treatment-seeking and non-treatment-seeking populations, and the acceptability of the website to some, a randomised controlled trial to assess the effectiveness of the website is now warranted. The internet offers excellent opportunities for controlled investigations in treatment-seeking and non-treatment-seeking populations, and is notoriously difficult to achieve as the Internet culture supports clicking rapidly through sites without looking closely at the material contained within them. Furthermore, drop out rates for brief interventions with unselected participants who are not actively seeking treatment are often high (Heather, 2001). Elements of both these potential problems were present in the DYD programme. There was a substantial fall-off of participants at the first stage of the programme, and it is likely that many of these were people who were simply curious about the programme but did not intend to change their drinking habits. However, drop-out continued throughout the 6-week programme, with the feedback suggesting that the reasons were complex and varied, some dropping out because changing drinking habits is difficult and others because the programme was time-consuming and challenging. Because of the inevitably low response rates from those who dropped out of the programme, we do not know if they derived any benefit. Future studies of web-based interventions of this kind might include ‘exit surveys’ at all stages. Some responses indicated that the early weeks of the programme contained information that was of benefit, along with the much appreciated daily drinking tips. It would be useful to investigate whether even such limited intervention can have an impact on those with ‘mild’ drinking problems.

We did not attempt to undertake a formal experimental evaluation of the effectiveness of DYD. However, given the acceptability of the website to some, a randomised controlled trial to assess the effectiveness of the website is now warranted. The Internet offers excellent opportunities for conducting randomised controlled trials (McAlindon et al., 2003), especially of a web-based intervention like DYD. Future development of the DYD website will take account of an accumulating database of feedback received from users and professionals in the field, and already several possible future directions have emerged. For example, there are indications that there may be a place for a complementary ‘How’s Your Drink?’ website, including only those sections of DYD which deal with assessment, such as the FAST questionnaire and the blood-alcohol concentration calculator. This could be hosted as a separate site, and linked to the main DYD. Feedback has suggested that support in a self-help atmosphere may be of real value during the 6-week programme and following its completion, and further development of the online ‘cyber community’ in the form of email mailing lists, discussion boards and chat rooms might be helpful. The potential to reach larger numbers of people could be exploited by translating the site into other languages, and the images could be adapted to different cultures and groups. Advertising on the internet and registration with a wider range of search engines and health-related sites could also bring the site to a greater range of users.

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REFERENCES


