"ASSISTED SPONTANEOUS REMISSION" FROM ALCOHOL PROBLEMS : EFFECTS OF A CONTROLLED DRINKING SELF-HELP MANUAL WITH AND WITHOUT ADDED TELEPHONE CONTACT

Nick Heather

National Drug and Alcohol Research Centre
University of New South Wales

National Drug and Alcohol Research Centre
Technical Report Number 6

ISBN 0 947229 11 6

Funded by the National Campaign Against Drug Abuse

NDARC TECHNICAL REPORT SERIES

This series of reports covers research by Centre and independent collaborators on various aspects of addictive behaviours. The term Technical Reports signifies that, unlike NDARC Monographs, specialist researchers in the drug and alcohol field are the intended readership. However, to facilitate dissemination of research findings to the wider drug and alcohol treatment communist, reports are normally preceded by a preface which explains in non-technical language the questions that prompted the research, methods used, the major findings, their implications for future research and their possible relevance to the treatment of persons with drug and alcohol related problems.

Copies of NDARC Technical Reports and Monographs can be purchased at a small cost of $10, to cover production costs, by writing to : Eva Congreve, Librarian, National Drug and Alcohol Research Centre, University of New South Wales, PO Box 1, Kensington, NSW 2033.

Monographs

No 1 Greeley, J & Gladstone, W (Eds) (1987).
Methadone Programs in Australia : Policy and Practice : Proceeding from the National Methadone Workshop, 30th-31st March, 1987. National Drug & Alcohol Research Centre.

No 2 Prescott, J (1987)
Issues and Priorities in Methadone Research. National Drug & Alcohol Research Centre.

No 3 Greeley, J & Heather, N (Eds) (1987).
Towards a National Drug and Alcohol Research Network : Proceedings from the First Annual NDARC Research Symposium, November, 1987. National Drug & Alcohol Research Centre.

No 4 Swift, W & Greeley, J (Eds) (1980).
The Future of the Addiction Model : Proceedings from a Seminar, Prince of Wales Hospital, August, 1988. National Drug & Alcohol Research Centre.

No 5 Prescott, J & McCall, G (Eds) (1988)
Kava Use and Abuse in Australia and the South Pacific : Proceedings from the Symposium on Kava, University of New South Wales, 11th November, 1988. National Drug & Alcohol Research Centre.

No 6 Greeley, J & Heather, N (Eds) (1988)
Perspectives on Drug and Alcohol Dependence : Proceedings from a Symposium held during the XXIV International Congress of Psychology, Sydney, August 30, 1988. National Drug & Alcohol Research Centre.

No 7 Grenyer, BF & Solowij, N (Eds) (1989)
Cognitive-Behavioural Approaches to the Treatment of Drug and Alcohol Problems : Proceedings from the Second National Drug & Alcohol Research Centre Annual Symposium, Sydney, December 16, 1988. National Drug & Alcohol Research Centre.

Technical Reports

No 1 Keats, JA, Webster, RA & O'Brien, ST (1989)
Social Processes in Alcohol Dependence : An Analysis of the Australian Inventory of Alcohol Usage. National Drug & Alcohol Research Centre.

No 2 Westbrook, RF & Greeley, JD (1989)
Some Effects of the Opioid Antagonist Naloxone Upon the Rat's Reactions to a Heat Stressor. National Drug & Alcohol Research Centre.

No 3 Chesher, G, Lemon, J, Gomel, M & Murphy, G (1989)
The Effects of Methadone as Used in a Methadone Maintenance Program, on Driving-Related Skills. National Drug & Alcohol Research Centre.

No 4 Pedic, F (1990)
A Review of the National Drug Poisonings Case Reporting System. National Drug & Alcohol Research Centre.

No 5 Pedic, F & Flaherty, B (1990)
Early Warning Indicators of Changes in Drug Use : A New South Wales Perspective. National Drug & Alcohol Research Centre.

No 6 Heather, N (1990)
"Assisted Spontaneous Remission" from Alcohol Problems : Effects of a Controlled Drinking Self-help Manual With and Without Added Telephone Contact. National Drug & Alcohol Research Centre.

Preface

This report describes research initiated at the Addictive Behaviours Research Group, Department of Psychiatry, University of Dundee, before I moved to Australia to become Director of NDARC in 1987. The project began in November, 1986 and the data collection phase was completed at the end of 1988. Since them, the data have been analysed both here and in Dundee. The usual delays in writing-up a research project has been compounded in this case by the difficulties in communicating over such a long distance. However, the data have now been fully analysed and interpreted, and are reported here for the first time.

This research was carried out in conjunction with my former colleague, Jean Kissoon-Singh, and the project was supervised in my absence by the Head of the Department of Psychiatry at the University of Dundee, Professor George W Fenton. At the Sydney end, Jennifer Tebbutt and Wayne Hall of NDARC made valuable contributions to the data analysis. The project was funded in the UK by a grant from the Alcohol Eductions and Research Council.

The starting point for this research is the observation that many problem drinkers, with problems of varying levels of severity, are apparently able to recover without benefit of treatment or any other formal source of help, The usual way of referring to this phenomenon is by the medically-derived term, "spontaneous remission". The use of this term in the alcohol problems field has been criticised on the grounds that there is unlikely to be anything "spontaneous" about the remission in question and that, rather than representing some mysterious exception to the typical course of a disease process, as in medical parlance, it is potentially understandable in terms of familiar social and psychological processes. Indeed, it is often said that an increased understanding of how problem drinkers recover without treatment might lead to the improved effectiveness of treatment itself. For these reasons, the term "natural recovery" from alcohol problems is often preferred nowadays, but the more traditional term has been retained here for convenience.

The most frequently cited research in this area is that of Saunders and Kershaw (1978) and of Tuchfeld (1981), but Linda Sobell (1990) presented some interesting new data at the Fifth International Conference on Treatment of Addictive Behaviours recently held in Sydney. The Sobell project aims to identify factors, particularly life-events, that promote and maintain spontaneous remission from alcohol problems, and to examine the temporal stability of such remission.

We were concerned in this project with the issue of whether people who wished to resolve their alcohol problem without formal help could nevertheless be assisted to do so. Clearly, such people are unlikely to respond to exhortations to seek treatment, so the question becomes one related to the effectiveness of

self-help manuals for problem drinkers. Will self-help manuals written by professionals be taken up by problem drinkers who do not wish to avail themselves of more formal help and can manuals provide useful assistance in the process of natural recovery? In this research, all subjects studied were people who had responded to newspaper advertisements offering free self-help materials to those who wished to cut down their drinking. Respondents who received a manual based on self-management theory were compared to others who received control material.

Research on the effects of controlled drinking self-help manuals began with the work of William R Miller and his colleagues. In a series of papers (Miller, 1978, Miller & Taylor, 1980; Miller et al., 1980; Miller et al., 1981), they showed that clients given a self-help manual based on behavioural self-control principles fared on average no worse at follow-up than those receiving conventional treatment given on an individual or group basis. However, there are certain problems in the interpretation of these results, particularly as they relate to the effectiveness of self-help manuals under natural conditions of use.

First. The findings from all these studies rest on the demonstration of a failure to find differences in effectiveness between a conventional, intensive intervention and a minimal, self-help intervention; they did not show that a self-help manual was superior in effectiveness to some control intervention of similar intensity, a demonstration which is necessary before concluding that self-help manuals are effective in themselves.

Secondly, most clients in self-help groups were self-referrals to an outpatient treatment clinic and presumably highly motivated to change; the same degree of motivation cannot be assumed in problem drinkers who, for example, respond to newspaper advertisements offering help to cut down or buy self-help manuals commercially.

Thirdly, clients in the Miller studies were all seen at least once by a therapist for assessment interviewing and were given self-monitoring cards to be filled in and posted to the clinic each week. Minimal therapist contact was therefore present, rather than the manual being entirely self-administered. All these conditions infringe one of the recommendations made by Glasgow and Rosen (1978), in their review of self-help bibliotherapy in general, that self-help materials should be evaluated under conditions as similar as possible to their intended use.

For these reasons, in 1982 my colleagues and I in Dundee decided to examine the effectiveness of a self-help manual under conditions as close as possible to pure self-administration – in other words, with no therapist contact and contact with researchers kept to a minimum. Respondents to a newspaper advertisement were sent through the post either our specially-prepared self-help manual (Robertson & Heather, 1985) or a booklet giving general information

and advice about drinking problems but no specific instructions on methods of reducing drinking. In the main comparison, initial and follow-up assessments were conducted solely through the post.

The results of this study were that, at six months follow-up, those who had received the self-help manual showed a greater reduction in the amount of alcohol they reported having consumed during the previous week than those in the control group (Heather et al., 1986). This superiority of the self-help manual was maintained at a one year follow-up of the same cohort (Heather et al., 1987). We also found, to our surprise, that there appeared to be no upper limit of alcohol consumption or alcohol dependence that presented a respondent from benefiting from the materials sent; those higher on either of these criteria from a more serious problem seemed to benefit on average as much as those with less serious problems. This surprised us because we had assumed that those with more serious problems, although apparently unwilling to enter conventional treatment, would be unlikely to improve without it.

While these results suggested that controlled drinking self-help manuals were effective in helping problem drinkers reduce consumption, there were certain problems in the design of the study that precluded an unambiguous conclusion of effectiveness. These problems are described fully in the Introduction to the study (see pp. 3 – 5). Suffice it to say here that all these problems arose precisely because of our decision to conduct a naturalistic evaluation – in other words, because of the decision to increase the external validity of the study (i.e. the generalisability of any findings that emerged beyond the particular research setting) at the possible expense of its internal validity (i.e. the confidence with which valid inferences could be made given the study's design and methods). Limitations on internal validity, particularly the failure to obtain collateral confirmation of self-reports of drinking, were especially relevant to confidence about the findings described above regarding the relatively good outcomes among respondents with more serious problems.

This formed one rationale for a final study in this line of research, the one reported here. On this occasion, the decision was made to design a much tighter study to make sounder inferences possible, while accepting that the situation in which the manual was evaluated might be somewhat artificial – in other words, to increase the internal validity. The ways in which this was achieved are also described in the Introduction.

The other main rationale for the study derived from a chance observation from the previous evaluation (Heather et al., 1986; 1987). In the hope of providing dome check on the validity of findings obtained through the post, and also to gather more information from respondents than could reasonably be acquired through the post, we had conducted initial and follow-up assessments with a small sub sample of respondents by telephone. Unexpectedly, this sub sample appeared to show a better outcome at follow-up than those contacted solely by

post. One explanation for this tentative finding is in terms of the greater "demand characteristics" applying to the telephone interview situation; that is, contact by telephone introduces a greater demand on the respondent to say things he or she imagines the interviewer wants to hear. Thus, under this explanation, the putative superiority of the telephone interview sub sample is simply a spurious consequence of the interview situation.

An alternative explanation, however, is that this was a genuine finding due to the small "therapeutic" effect of conducting assessment interviews by telephone. That assessment interviews in general can have some beneficial effects has been suggested by Sobell and Sobell (1981). Further, there is some evidence from the weight reduction and smoking cessation fields that self-help interventions can be made more effective by the introduction of some degree of personal contact with therapists (Brownell et al., 1978; Glasgow et al., 1981). It is conceivable that some of the respondents in our study viewed the telephone assessment interviews as part of the intervention itself and may have benefited in some fashion as a result. A third possible explanation for the finding in question is that, in view of their ownership of a telephone, respondents in the telephone sub sample were of higher average socio-economic status than the remainder of the sample and therefore had a better prognosis for any type of intervention, although this explanation seems very tenuous.

In any event, in the study reported here, we decided to investigate the possible therapeutic effects of telephone contact added to the provision of self-help materials. Briefly, among respondents receiving the self-help manual, some had no extra telephone contact, others had the opportunity to make reports of progress to a telephone answering service, while yet others had the opportunity to telephone progress reports to a trained interviewer. Further details of the relevant procedures are given in the Method section below (pp.5 – 8). As might be expected, our hypothesis was that dome telephone contact would be better in leading to reduced consumption than none, and that personal telephone interviews would be better than reports to an impersonal answering service.

To deal first with the conclusions from this aspect of the study, we found no evidence what ever that telephone contact improved the effectiveness of self-help procedures; if anything, results in the two telephone groups were worse than in the manual-only group but the relevant differences were not statistically significant. Moreover, very little use was made by respondents of the planned opportunities for telephone contact, so that, even if telephone interviews had been of some potential benefit, a minority of the relevant respondents were in a position to receive these benefits. However, it is unlikely that telephone contact did in fact offer such benefits because there was no relationship between the degree of telephone contact a respondent had and the extent of reduction in alcohol consumption.

As will be seen in the report, our way of explaining this finding is to say that people who respond to newspaper advertisements offering help for drinking problems can be assumed to wish to preserve their anonymity and to avoid contact with personnel from helping agencies. They may be people who are especially sensitive to the stigmatizing effects of admitting an alcohol problem – people whom we rather crudely describe in the report as "closet problem drinkers". If this reasoning is correct, it may well be that the provision of self-help books is especially suited to the needs of these people.

Whatever the merits of this speculation, this study makes it clear that there is no advantage to be gained from adding telephone contact to self-help materials for problem drinkers recruited via newspapers and other media. The apparent evidence for the superiority of the telephone group in the previous study was therefore likely to have been an artefact of demand characteristics. This does not mean, however, that supplementary telephone contact may not be of benefit in minimal self-help interventions for clients who voluntarily approach helping agencies or are recruited by various other means.

The main finding from the other part of the study, that concerned with checking the validity of the previous findings in a more tightly controlled design, is also clear. The study provides good evidence for the effectiveness of a self-help manual among media-recruited problem drinkers. Respondents in groups receiving the manual were more likely to be drinking under recommended consumption levels at follow-up than those in a control group receiving a general advice and information booklet. Combining the high internal validity of this finding with the greater external validity of the finding from the previous study, the evidence justifies the widespread promotion of self-help materials as a means of increasing the rate of natural recovery among problem drinkers who do not seek treatment.

Furthermore, the present study again provides no evidence, this time with more confidence in the finding, that the benefits of self-help materials are restricted to those showing relatively less serious problems. While the more serious problems drinkers were still drinking at higher average levels at follow-up than the remainder of the sample, as a group they did not show significant improvements from before the intervention and, including those in the control group, roughly one third were drinking below recommended levels at follow-up. It should perhaps be emphasised that, while the average level of alcohol-related impairment in this sample was very high compared to the normal population, it was not as severe as that typically to be found in an inpatient alcoholism programme. Nevertheless, the present findings are consistent with previous studies of "spontaneous remission" (e.g. Saunders & Kershaw, 1979) in suggesting that even problem drinkers with quite serious problems and levels of alcohol dependence can sometimes recover without formal treatment.

CONTENTS
(to be self generated)

Tables and Figures

Summary

This study was designed to examine the validity of previous findings relating to the effectiveness of a self-help manual for problem drinkers and also to investigate the hypothesis that telephone contact supplementary to self-help manual would increase its effectiveness.

107 subjects who had responded to a newspaper advertisement offering help to cut down drinking and who had agreed to the conditions of the study were randomly assigned to : a) a control group that received a general advice and information booklet through the post (n = 32); b) a group that received a controlled drinking self-help manual through the post (n = 24); c) a group that received, in addition to the self-help manual, the opportunity to make telephone reports of progress to an answering service (n = 26); and d) a group that received, in addition to the self-help manual, the opportunity to make telephoned reports of progress to a trained interviewer (n = 25).

Initial assessment was by telephone but follow-up assessment was by personal interview. 87 (81.3%) subjects were successfully followed up, with a significantly lower proportion being followed up in the two groups receiving the opportunity for telephone contact. Collateral reports were available for 54 (62.1%) of those followed up and general correspondence between self reports and collateral reports of change in consumption was good, with only one case where a self-report of decreased consumption was contradicted by a collateral report of increased drinking.

Results showed that the overall sample reported significant reductions in level of alcohol consumption, frequency of drinking and maximum daily intake, and significant improvements in alcohol-related problems, level of alcohol dependence, physical health and well-being and degree of social interaction. Although there were no significant differences between groups in an analysis of covariance of consumption scores, a significantly higher proportion of subjects was drinking above recommended levels at follow-up in the control group than in the combined groups receiving the self-help manual. This same finding was obtained when subjects lost to follow-up were ignored in the analysis, when they were all assumed to be failures (i.e. drinking above recommended levels at follow-up) and when they were all assumed to be successes.

There was no evidence from the study that the benefits of the brief intervention (including the control intervention) were restricted to subjects reporting less serious problems, defined either in terms of level of consumption or of dependence. Although mean follow-up consumption in more seriously impaired groups was still high, roughly one-third of subjects under each definition of seriousness reported consumption below recommended levels at follow-up. There was a trend in the data for subjects reporting high

consumption at initial assessment (i.e. over 100 units/week) to benefit relatively more from the self-help manual than the control material but this was not statistically significant.

The hypothesis that telephone contact would add to the effectiveness of the self-help manual was not confirmed. Also, there was no evidence that access to an interviewer in making telephone progress reports was more effective than access to an answering service. Unexpectedly little use was made of the opportunity for telephone contact and subjects who made no use of telephone facilities tended to be those who refused a follow-up interview despite having previously agreed to one. It is concluded that there is little to be gained by adding telephone contact to self-help approaches for problem drinkers and that the most likely explanation for this is that many of those who respond to newspaper advertisements offering help to cut down drinking are especially sensitive to the stigma attached to the admission of a drinking problem and wish to avoid contact with helping agencies.

It is also speculatively concluded that self-help manuals, in addition to their general role in early intervention and secondary prevention, may have a particularly important role in assisting those "closet" problem drinkers who are unwilling to approach helping agencies.

Introduction

Heather et al. (1986; 1987) reported six month and one year follow-up results from an evaluation of a controlled drinking self-help manual sent through the post to problem drinkers recruited by newspaper advertisements. The main conclusion from this research was that there was some evidence that the self-help manual was superior to a general advice and information booklet (control condition) in enabling problem drinkers to reduce alcohol consumption.

This conclusion is encouraging in view of the interest currently being shown in brief (or "minimal") interventions among those with early or relatively less serious alcohol problems (see, e.g. Heather, 1986 a,b; 1989 a,b). With specific regard to self-help manuals, Heather (1986 b) has argued that their dissemination among problem drinkers may be seen as a form of "assisted spontaneous remission" in which natural recovery processes are assisted by structured guidance based on principles of self-management theory (Kanfer, 1980).

However, limitations of the design and method used in the previous study (Heather et al., 1986; 1987) leave a number of important issues unresolved, issues which arise mainly from the fact that an attempt was made to evaluate self-help materials under natural conditions (Glasgow & Rosen, 1978), i.e. those approximating as closely as possible to the situation in which a self-help manual is bought commercially or distributed in some other way without therapist contact or personal contact with researchers. In addition, the follow-up results produced the unexpected tentative finding that subjects interviewed by telephone showed a somewhat better outcome than those contacted solely by post and this suggests a hypothesis regarding the added effectiveness of telephone contact supplementary to self-help material. The present study was designed to investigate these issues arising from the previous study.

In greater detail, these issues, and the manner in which they are addressed in the present study, are as follows :

(i) Of the 785 individuals who originally replied to the newspaper advertisements in the previous study, the response rate of 31.3% (i.e. those who returned mailed assessment questionnaires after having received their self-help material) was disappointing. This low response rate did not invalidate the main comparison between manual and control groups, since the sample groups that remained were statistically comparable on initial measures. However, the results obviously provided no information about the effects of self-help material in the total sample and this suggests that a method should be used to increase the initial response rate in a subsequent study.

In the present study, random allocation to study group was made, and material sent by post, only after completion of an initial telephone assessment interview, thus ensuring a response rate of, by definition, 100%. For this reason, the study was confined to subjects who could be contacted by telephone.

(ii) As well as a low initial response rate, overall rates from both follow-ups in the previous study (i.e. those who returned mailed follow-up questionnaires) were also relatively low. Here difficulties for the interpretation of results were introduced, since six month and one year follow-up rates were significantly higher in the manual than in the control group. Moreover, an unexpected finding was that respondents lost to the six month follow-up were significantly more "socially stable" on a collection of relevant variables than those who were successfully contacted and it is not clear how this factor, in combination with unequal follow-up rates between groups, affected the differential effectiveness of the manual and control materials.

If lost respondents in fact did worse than those successfully followed up, as is usually assumed to be the case in conventional treatment evaluation research (Miller et al., 1970), then the observed superiority of the manual over the control group response was probably an underestimate of the true difference in effectiveness between the groups. If, on the other hand, lost respondents did better, perhaps for reasons related to their higher average social stability, then the observed significant difference between groups could be spurious.

All this suggest the need for procedures to increase the overall follow-up rate and minimise any tendencies towards unequal rates between groups. In the present study, entry to a lottery was used as an inducement to complete follow-up; all subjects entering the study had given signed consent to a follow-up interview; and telephone contact made it easier to trace subjects and arrange follow-up interviews.

(iii) Although there is some evidence that data collected by post are indistinguishable from those obtained in personal interviews (Clark & Cahalan, 1976; Hochstim, 1967), the self-report nature of the measures used in the previous study, and the relatively remote methods by which they were gathered, may raise questions about the validity of the information on which the conclusions of the previous study were based. Of particular importance here is the validity of findings suggesting that respondents with more serious problems (i.e. those drinking over 100 units/week or showing signs of late alcohol dependence) benefited from materials sent at least as much as those with less serious problems.

At the one year follow-up point, an attempt was made to interview personally and collect collateral confirmation of self-reports among a small sub sample of respondents living in the Glasgow area (see Heather et al., 1986). Unfortunately, however, it was impossible to do this with a larger and more representative sub sample owing to the large geographical distances involved. The present study was therefore confined to the Tayside and Fife areas of Scotland so that is would be possible in principle to carry out personal follow-up interviews and collect collateral data for the entire sample. Additionally, in order to provide validation of one of the criteria for a "serious" alcohol problem, a check was made on the level of dependence calculated at the initial telephone assessment by including in the personal follow-up interview a widely-used measure of alcohol dependence (SADQ : Stockwell et al., 1979), applied retrospectively to the period before entry to the study.

(iv) Respondents in the previous study were interviewed by two methods. Data in the main sub sample were collected entirely by post but there was also a smaller sub sample interviewed by telephone and paid 5 pounds per occasion for agreeing to this. The purpose of the telephone sub sample was to provide a check on the validity of findings emerging from the postal sub sample and also to collect more detailed information than could reasonably be collected through the post. However, independently of the main differences in outcome between manual and control groups, the results also suggested a superiority in outcome on general measures of adjustment and a non significant tendency towards greater reduction in alcohol consumption among respondents in the telephone sub sample over those in the postal sub sample.

There appear to be two sorts of explanation for this unexpected finding : either it was the result of the demand characteristics of the telephone interview situation or a genuine difference arising from the "therapeutic" effect of closer contact with research personnel (cf. Sobell & Sobell, 1981). In connection with the second possibility, there is some evidence from the weight reduction (Brownell et al., 1978) and smoking cessation (Glasgow et al., 1981) fields that minimal interventions may be made more effective by the addition of small amounts of contact, such as would be provided by telephoned reports of progress in cutting down drinking. To test this hypothesis in the present study, degree of telephone contact was systematically varied between study groups. This was done by including, in addition to the control and manual groups of the previous study, a group given the opportunity to make regular reports of progress over a three month period to a telephone answering service and another given a similar opportunity to report progress in telephone conversations with a trained interviewer.

To summarise, the aims of the present study were twofold: a) to attempt to replicate previous findings on the effectiveness of a controlled drinking self-help manual in enabling problem drinkers to reduce alcohol consumption by increasing the internal validity of the study design; and b) to test hypotheses concerning the effectiveness of telephone contact supplementary to a self-help manual, viz (i) that supplementary telephone contact adds to the effectiveness of a controlled drinking self-help manual and (ii) that personal contact with a researcher when making telephoned reports of progress is more effective in leading to reduced consumption than making progress reports to a telephone answering service.

Method

Advertisements

Weekly advertisements appeared in each of two local newspapers during the months of July, September and November, 1987 and February, 1988. The test of the advertisement was very similar to that described by Heather et al., (1986). It was headed "Drinking Too Much?" and offered free help and advice through the post to people "who genuinely feel they should cut down their drinking and are having some difficulty doing so". It was stressed that the project was not intended for "alcoholics" and that all information gathered would be kept strictly confidential. Respondents were invited to send a cut-out section with their name, address, sex and age to a Freepost address entitled "Self-help Project, Ninewells Medical School, Dundee". Telephone numbers were also requested where applicable.

Eligibility for project

A total of 576 responses to the advertisement were received. >From this 331 were excluded for the following reasons: (i) no telephone number given (n = 279); (ii) telephone number given but outside age-range 18-70 years (n = 16); (iii) telephone number given and within age range but with an address outside Tayside and Fife (n = 29); (iv) invalid responses (n = 7).

Excluded respondents were sent a copy of the control booklet used in the research (Grant et al., undated) or, in a minority of cases, the leaflet "That's the limit" (Health Education Council, undated). Both materials contained addresses of agencies where further help could be sought if necessary. These excluded subjects were not followed up.

Consent to project

The 245 eligible respondents were sent a letter asking their agreement to the following conditions : (i) telephone contact necessary to the completion of the project; (ii) a personal follow-up interview in their homes six months after entry into the project; and (iii) the nomination of a person who would agree to act as a collateral source of information at a short interview as part of follow-up. Respondents were also informed that agreement to the above conditions would be regarded as equivalent to entry in a "Free Prize Draw" with a first prize of 100 pounds, a second prize of 50 pounds and two third prizes of 25 pounds each, to be drawn after the completion of the follow-up. The purpose of the research was described as an attempt to discover "the best way of helping people to cut down their drinking", assurances of confidentiality were repeated, and the importance of honest and accurate information emphasised. A separate consent form was enclosed for signature, together with a Freepost envelope for return of the form.

If no reply was received, two reminders were sent at fortnightly intervals. Subjects were excluded if no reply had been received by four weeks after the initial letter had been sent. A total of 72 respondents were thus excluded from further study and sent a copy of the control booklet. A further 40 subjects replied but withheld consent and were similarly excluded, while 17 returns were valid.

Initial assessment by telephone

116 eligible and consenting subjects were telephoned by trained interviewers and completed the following questionnaires :

(i) demographic, employment and other personal information;

(ii) family history of drinking, first use of alcohol, duration of present problem, subject's concept of alcoholism etc;

(iii) a detailed inventory of drinking during the last week (or drinking during the most recent week if the last week was not typical), adapted from Chick and Duffy (1981) and yielding measures of total consumption for the week, frequency of drinking and maximum daily intake during the week;

(iv) the MAST (Selzer, 1971), together with a measure of physical dependence on alcohol (Ph Score : Miller & Marlatt, 1984), all items referring to the last six months.

The interview took roughly one hour to complete. In addition, subjects were mailed a self-completion questionnaire with a Freepost envelope. This consisted of the Life Activities Inventory (LAI) used in the previous study (Heather et al., 1986; 1987) and yielded standardized, scaled scores on the following factors : marital problems; income/employment stability; physical health and well being; residential stability; and social interaction.

At this stage, nine subjects declined to participate further in the research for a variety of reasons and were sent the control booklet.

Random allocation of self-help procedures

107 subjects who completed the initial interview were then randomly allocated (by two coin tosses) to the following four groups :

1. *Control Group (n = 32).* These subjects were sent the booklet used in the previous study (Grant et al., undated) giving information and advice about drinking problems , plus addresses of helping agencies in

Scotland. Also inclosed was the LAI and a letter reminding them of the Free Prize Draw, the forthcoming six month follow-up interview and the collateral interview.

2. *Manual Group (n = 24).* Subjects were sent a revised edition of the self-help manual used in the previous research. The test of this revised edition was similar to the previous version, with some minor improvements, but was much more lavishly illustrated in full colour (Robertson & Heather, 1985). The manual measured 24.5 by 20.5cm. and was 100 pages long. The manual gave definitions of hazardous drinking as above 35 standard units per week for men and above 20 standard units per week for women, and strongly recommended to the reader that he or she use these levels as upper limits on self-monitored weekly consumption. Other enclosures were similar to those in the Control group.

3. *Ansafone Group (n = 26).* Subjects were sent the self-help manual and the other enclosures described above, plus detailed instructions on how to use a Freefone service to make six fortnightly reports of progress to a telephone answering service. These instructions advised subjects how to convert weekly consumption of alcohol into standard units using information given in the manual and also referred to a list of alcohol-related problems in the manual which could be used as a basis for progress reports. The dates of weekends on which subjects were requested to call were prearranged. A Reporting Guide was included so that subjects could write down the information they wished to give before making the call.

4. *Telephone Interview Group (n = 25).* Procedure in this group was similar to that for the Ansafone Group except that arrangements were described for subjects to telephone trained interviewers on specified dates every fortnight for a three month period. Interviewers had been instructed to respond empathically to subjects' reported problems but to refrain from giving explicit advice. In both Telephone Interview and Ansafone Groups, the date, time, duration and contents of all calls were noted.

Six month follow-up

Six months from the date of the initial assessment interview, subjects were telephoned or mailed to make arrangements for a personal follow-up interview in their homes. A few subjects preferred to be interviewed at the research centre. The follow-up interview repeated the measures obtained at initial assessment, with the addition of the SADQ (Stockwell et al., 1979) applied to the most recent month of heavy drinking before the initial assessment. Follow-up was carried out by trained interviewers who were blind to the group to

which the subject had been allocated. At the end of the interview, subjects were asked for their views on the helpfulness of the self-help materials they had received and also whether they knew anyone else who had taken part in the project.

The collateral informant nominated by the subject was also contacted and an interview arranged. The majority of these took place in the informant's home, although a few were conducted by telephone. Informants were asked about their relationship with the subject, his or her past drinking and drinking problems, and changes in drinking and problems over the last six months.

After the last follow-up interview had been completed, the Free Prize Draw was made by a local Sheriff, using subject numbers allocated in the research. All subjects completing follow-up were included. Winning subjects were contacted and received their prizes without publicity.

Data analysis

Two types of analysis were performed to examine differences between study groups. First, an analysis of covariance was carried out on level of alcohol consumption at follow-up, using baseline level of consumption before intervention as the covariate. This type of analysis was repeated for number of alcohol-related problems in the past six months (MAST), level of alcohol dependence (Ph Score) and measures of general adjustment (LAI scores). In each case, the following planned orthogonal contrasts were used to test hypotheses about differences between groups :

Group	1	2	3	4
	-3	1	1	1
	0	-2	1	1
	0	0	-1	1

Thus the contrasts were between : (i) control subjects versus all those who received the manual; (ii) among subjects receiving the manual, those who received the manual only versus those who received in addition some form of telephone contact; and (iii) among subjects receiving some form of additional telephone contact, those who had access to the Ansafone service versus those who had access to telephone interviews with a researcher. These contrasts can be conveniently thought of as testing for differences on follow-up measures between subsets of study groups, after adjustment for level of the dependent variable at initial assessment.

Secondly, log-linear analyses were performed to examine differences between study groups at follow-up in the proportion of subjects who fell into categories

based on upper limits of weekly consumption recommended in the self-help manual (men = 35 units/week; women = 20 units/week). The same set of contrasts was made between the four study groups on these measures, using the tests described by Hall and Bird (1986), as were made on the continuous measures described above. Four sets of these analyses were carried out : (i) with subjects missing at follow-up excluded, (ii) with missing cases included as continuing hazardous drinkers, (iii) with missing cases included as drinking below hazardous levels, and (iv) confining attention to only those subjects with collateral confirmation of self-reported consumption at follow-up.

Other ad hoc analyses were carried out to examine differences in follow-up rates between groups, differences between subjects followed up and those lost to follow-up, the use made of telephone reporting arrangements, relationships between self-reports and collateral reports, and comparisons between more and less serious problem drinkers.

Results

Sample characteristics at initial assessment

Of the 107 subjects entering the study, 69 (64.5%) were male and 38 (35.5%) female. Mean age was 45.5 years (s.d = 12.7, range = 19\8-70). 61 (57.0%) were in full-time employment, 21 (19.6%) unemployed, 12 (11.2%) retired, 5 (4.6%) homemakers and one full-time student. 15 (14.0%) subjects were single, 61 (57.0%) were married or cohabiting, 10 (9.3%) were separated, 10 (9.3%) widowed and 11 (10.3%) divorced. SES breakdown was as follows: I = 2 (1.9%); II = 20 (18.7%); III = 47 (43.9%); IV = 30 (28.0%); V = 6 (5.6%); missing = 2. In terms of these demographic characteristics, the sample was roughly similar to that of the previous study, although the present sample was slightly older and included somewhat more women.

Mean alcohol consumption in the week prior to assessment was 74.1 standard units (s.d. = 43.0, range 6-225). This was approximately 11 units/week higher than the mean recorded in the previous study (=63.3) (Heather et al., 1986). Mean frequency of drinking days per weeks was 5.2 (s.d. = 1.8, range – 1-7), with 39 subjects drinking every day. Mean maximum intake per day as 20.9 standard units (s.d. = 11.4, range = 2-69).

Mean MAST score was 11.9 (s.d. = 6.6) and mean Ph Score was 7.1 (s.d. = 3.6). Categorisations for both these variables, according to the guidelines suggested by Miller and Marlatt (1984), are given in Table 1. This shows that, although few subjects reported severe levels of problems and dependence in the sample was by no means trivial, particularly since questions referred only to the past six months and not to any in the past.

Initial LAI means for those subjects remaining in the sample at follow-up are shown in Table 2, together with MAST and Ph Scores for these subjects. (LAI scores were available only for 92 subjects at initial assessment because 15 did not return mailed questionnaires). Comparison of LAI scores for the total initial sample with those recorded in the previous study (Heather et al., 1986) shows that means were very similar for Marital Problems, Physical Health and Well-being and Social Interaction. The present sample gave higher means for Income/Employment Stability and Residential Stability and these were closer to the relevant means for the telephone sub sample in the previous study, as might be expected from the fact that a telephone was a requisite for entry to the present study.

Table 1

Categories of alcohol-related problems (MAST) and physical dependence (PH Score) in the six months prior to assessment for the initial assessment sample

Mast				*Ph Score*			
Category	**Score**	**n =**	**%**	**Category**	**Score**	**n =**	**%**
Non alcoholic	0	2	1.9	No dependence	0	2	0.9
Mild problems	1 – 4	8	7.5	Mild problems	1 – 4	29	27.1
Moderate problems	5 – 10	41	38.3	Definite and significant symptoms	5 – 10	56	52.3
Significant problems	11 – 20	48	44.9	Substantial dependence	11 – 14	18	16.8
Severe problems	> 20	8	7.5	Severe dependence	> 14	3	2.8
Total		107	100.0	Total		107	100.0

Follow-up sample

87 subjects (81.3%) were successfully followed up, consisting of 27 (84.4%) in the Control Group, 23 (95.5%) in the Manual Group, 19 (73.1%) in the Ansafone Group and 18 (72.0%) in the Telephone Interview Group. The differences in the proportions successfully followed up in each group did not reach significance ($X = 6.11$, d.f. = 3, $p < 0.10$) but there is a suggestion in the figures that subjects in the two groups involving telephone contact (Groups 3 and 4) had lower follow-up rates than those in the other two groups. When Groups 3 and 4 were combined and compared with Groups 1 and 2 combined, the difference in proportions followed up was significant (89.3% vs. 72.5%; $X = 3.88$, d.f. = 1, $p< 0.05$). However, there was no significant difference in follow-up rates between all subjects who received the self-help manual (Groups 2, 3 and 4 combined) and Control Group subjects ($X = 1.15$, d.f. = 1, n.s).

Of the 20 subjects not followed up, 18 refused an interview despite having given prior agreement, one could not be contacted and one had died. Twelve of the 18 refusing interview came from one of the two groups involving telephone contact (Groups 3 and 4).

There were no significant difference on initial measures between the 87 subjects followed up and the 20 not followed up. However, those lost to follow-up reported a non-significantly lower mean alcohol consumption (62.1, s.d. = 36.4) those successfully contacted (76.4, s.d. = 44.1).

No subject followed up claimed to be aware of anyone else taking part in the project.

Self-reported changed in alcohol consumption

Table 3 shows means and standard deviations for various self-reported measures of alcohol consumption at initial assessment and follow-up for each study group and in the overall sample for those subjects with data at both assessments points. Figure 1 shows changes in mean level of consumption from initial assessment to follow-up for each study group.

The reduction in consumption in the total sample from initial to follow-up assessments was highly significant ($t = 4.7$, d.f. = 86, $p < 0.001$) but all comparisons between study groups within the analysis of covariance failed to show any significant difference in level of consumption at follow-up and there were also no significant differences due to sex of subject. However, there was a trend towards a larger reduction in consumption in the groups receiving the self-help manual (Groups 2 through 4) than in the Control Group (Group 1) (see Table 3 and Figure 1).

In view of this trend, a 95% confidence interval was constructed around the mean obtained difference between Group 1 and Groups 2 to 4 combined. The interval ranged from a lower limit of -16.2 standard units to an upper limit of 24.3 standard units. The upper limit of this interval is consistent with the self-help manual producing a reduction in consumption of 24 units per week at follow-up over and above any changes produced by the control booklet. Since such a difference would be clinically significant, it would be unwise to conclude that the self-help manual was ineffective in leading to greater reductions in consumption that the control material. There may be a difference in the population which this analysis was unable to detect. This possibility is supported by a power analysis which revealed that this sample (effectively 23 per group at follow-up) had only a 43% change of detecting a difference of 24 units at the 5% level of confidence. In order to detect such a difference with 80% power, the required number per group at follow-up would be 54 subjects, more than twice the current sample size.

Consistent with the possibility of an underlying superiority for subjects given the self-help manual were the results of a log-linear analysis. An examination of only those subjects for whom follow-up data were available indicated that

Table 2

Means at initial and follow-up assessments for measures of alcohol-related problems, alcohol dependence and general adjustment

	Control		*Manual*		*Ansafone*		*Telephone Interview*		*Overall Sample*	
	Initial	*Follow-up*	*Initial*	*Follow-up*	*Initial*	*Follow-up*	*Initial*	*Follow-up*	*Initial*	*Follow-up*
Mast	11.81	09.85	11.39	08.17	11.79	08.26	11.28	07.78	11/59	08.63*
Ph Score	06.52	05.52	07.04	05.26	06.95	04.63	07.56	05.50	06.97	05.25*
Marital Problems	821.8	808.2	745.5	819.5	857.9	863.0	821.3	843.0	807.4	828.5
Income/ Employ. Stability	475.8	473.3	422.7	445.8	478.5	495.1	442.1	445.4	454.6	465.1
Physical Health & Well-being	347.4	449.1	308.3	343.7	343.7	393.1	359.6	410.2	337.9	400.4*
Residential Stability	558.9	541.5	574.9	522.8	578.7	576.2	556.8	561.1	567.2	548.3
Social Interaction	423.6	470.2	422.3	466.1	451.0	501.2	432.7	483.5	430.8	478.7*

* Significant improvement in overall sample ($p < 0.001$)

Table 3

Means and standard deviations of measures of alcohol consumption at initial assessment and follow-up for each study group and in the overall sample

	Study Group	*Control*		*Manual*		*Ansafone*		*Telephone Interview*		*Overall Sample*	
		Mean	*s.d*	*Mean*	*s.d.*	*Mean*	*s.d.*	*Mean*	*s.d.*	*Mean*	*s.d.*
Level of Consumption	Initial Assessment	82.3	50.8	72.6	33.3	69.5	36.2	81.8	54.0	76.8	44.5
	Follow -up	63.3	54.5	46.1	46.7	47.1	48.7	50.1	46.5	52.5*	49.6
Frequency of Drinking	Initial Assessment	5.00	1.86	5.26	1.76	4.95	2.17	5.17	2.03	5.09	1.94
	Follow-up	4.30	2.25	3.96	2.08	4.05	2.37	4.56	2.06	4.21*	2.20
Maximum Daily Intake	Initial Assessment	24.1	13.0	20.4	9.07	22.4	13.7	21.2	11.2	22.1	12.0
	Follow-up	18.2	10.5	15.8	8.9	13.8	9.6	16.3	12.1	16.2*	10.3
* Significant reduction in overall sample ($p < 0.001$)											

Figure 1
Mean level of alcohol consumption at initial assessment and follow-up for each study group

Please note : a graph has to be generated ... copy, cut and past from the original document ... located on page 13 of the report

there were significantly more subjects drinking above recommended levels in the control group than in the other three groups ($X = 4.29$, d.f. = 1, $p < 0.05$, one-tailed test). Proportions of subjects in each group and in the total sample drinking above recommended levels, both at initial assessment and at follow-up, are shown in Table 4. When subjects lost to follow-up were included in the analysis and assumed to be "worst cases" (i.e. assumed to be drinking above recommended levels at follow-up), there were still significantly more subjects drinking hazardously in the control than in the manual groups ($X = 3.38$, d.f. = 1, $p < 0.05$). These data are also shown in Table 4. Further, when the opposite, "best case" assumption was made (i.e. that all subjects lost to follow-up were drinking below hazardous levels), the proportion of subjects in the control group drinking above hazardous levels was still significantly greater than the like proportion among subjects in the groups receiving the manual ($X = 4.40$, d.f. = 1, $p < 0.05$) (see Table 4).

Table 4
Proportions (%) of subjects drinking hazardously at initial assessment and at follow-up in each group and in the overall sample

	Control	*Manual*	*Ansafone*	*Telephone*	*Total*
Initial assessment (n = 107)	87.5	83.3	92.3	84.0	86.9
Follow-up (n = 87)	77.7	47.8	57.9	55.6	60.9
Follow-up (worst-case analysis) (n = 107)	81.3	50.0	69.2	68.0	68.2
Follow-up (best-case analysis) (n = 107)	65.6	45.8	42.3	40.0	49.5
Follow-up (collateral confirmation) (n = 53)	73.7	46.2	61.5	62.5	62.3

Changes on other variables

Table 2 shows means at initial and follow-up assessments in each study group and in the overall follow-up sample for alcohol-related problems (MAST), physical dependence (Ph Score) and LAI measures of general adjustment.

(Increasing scores on all LAI factors indicate improvement on the variable in question.)

It will be seen from Table 2 that the overall follow-up sample showed significant reductions in alcohol-related problems and physical dependence, and significant improvements in physical health and well-being and degree of social interaction. (To guard against the possibility of spuriously significant results from multiple tests, the .1% level has been taken to indicate statistical significance in these analyses). However, in analyses of covariance, there were no significant main effects due to study group or sex of subject and no significant interactions between group and sex.

Use made of telephone contact

Table 5 shows frequency of occasions subjects in Group 3 and 4 made use of the telephone reporting arrangements available to them, up to the maximum possible of six occasions. Also shown in Table 5 is whether these subjects were followed up or lost to follow-up. It will be seen from Table 5 that the great majority of those (78.6%) who were lost to follow-up made no use of the telephone reporting arrangements, while three lost subjects who did make use of these arrangements used them only once. Twelve of the 14 subjects in Groups 3 and 4 who were lost to follow-up were successfully contacted but refused to be interviewed, despite having previously agreed to this.

Data in Table 5 also suggest that the telephone interview situation may have been used more often by subjects in Group 4 than the telephone answering service was used by subjects in Group 3. However, when subjects who had made any use of the telephone arrangements were grouped together and compared with those who had made no use of them, the difference between groups did not reach statistical significance ($X = 2.46$, d.f. = 1, $p < 0.10$, two-tailed test).

Correlation coefficients were established between the number of occasions subjects in Groups 3 and 4 made use of telephone reporting arrangements and absolute or percentage reductions in consumption calculated from initial and follow-up self-reports. There were no significant correlations either within groups or in the two groups combined.

Collateral confirmation of self-reports

Collateral information was obtained for 54 (62.1%) of those subjects followed up. 37 collateral reports were from spouse or cohabite, 5 from close friends of the opposite sex, 6 from same-sex friends and 6 from other sources.

At the beginning of the collateral interview, questions were asked to establish how well the informant knew the subject. 48 informants (92.3% of all non-

Table 5
Use made of telephone arrangements by subjects in Groups 3 and 4

		Frequency of Use							
		0	**1**	**2**	**3**	**4**	**5**	**6**	**Total**
Ansafone Group (Group 3)	All Subjects	13	2	1	2	2	1	3	24*
	Followed up	6	2	1	2	2	1	3	17
	Lost to follow-up	7	-	-	-	-	-	-	7
Telephone Group (Group 4)	All subjects	8	3	2	5	2	2	3	25
	Followed up	4	0	2	5	2	2	3	18
	Lost to follow-up	4	3	-	-	-	-	-	7
Total in Both Groups		21	5	3	7	4	3	6	49
* missing data for 2 subjects									

missing responses) said they had known the subject for more than five years. A similar number (48) said they knew the subject "very well indeed", with four saying they knew the subject "quite well". 42 (80.8%) said they were "very familiar" with the subject's drinking habits and 10 (19.2%) said they were "quite familiar" with these habits. Thus these data indicate a close degree of acquaintance with the behaviour on which subjects' self-reports were based.

Informants were asked to rate on a 5-point scale the direction and extent of any changes in the subject's level of consumption since taking part in the project. Table 6 gives the frequency of non-missing responses for four levels of this variable (the category of "much more" not having been used by subjects). In Table 6 this collateral estimate of change in consumption is cross-tabulated with a three-way classification of self-reported percentage change in consumption, as calculated from subjects' initial and follow-up reports. The contingency coefficient for this cross-tabulation is 0.41 ($p < 0.01$). It will be seen from Table 6 that in only once case was a subject self-report of a reduction in consumption of greater than 25% contradicted by a collateral report of an increase in consumption. In ten other cases, a self-reported decrease in consumption was accompanied by a collateral report of "about the same".

Confining attention to only those subjects with collateral information, and omitting the one subject whose self-reported reduction in consumption was contradicted by the collateral report, proportions of subjects drinking above recommended levels at follow-up were recommended levels at follow-up were recalculated. These are shown in Table 4. In the log linear analysis, there were no significant differences in proportions between groups but the power of the test to detect possible significant differences between such small sub samples was obviously weak. However, it will be seen from Table 4 that there is a

Table 6
Relationship between changes in self-reported consumption and collateral reports

		Collateral report of present drinking compared with drinking at entry to study				
		Much less	***Somewhat less***	***About the same***	***Somewhat more***	***Total***
Changes in Self-reported consumption	Greater than 25% reduction	10	15	10	1	36
	Between 25% reduction & 25% increase	0	4	7	1	12
	Greater than 25% increase	0	1	2	1	4
		10	20	19	3	52

tendency for a higher proportion of subjects to be drinking above recommended levels in the control group than in the groups receiving the self-help manual.

Analysis of more serious problems

In the previous report (Heather et al., 1986), the presence of more serious problems among subjects was defined in two ways : (i) those subjects drinking over 100 units of alcohol in the past week; and (ii) those scoring positively for "late dependence" on the Edinburgh Dependence Schedule (Chick, 1980). In the present study, the first of these two criteria for more serious problems was repeated but the second was changed because the Edinburgh Dependence Schedule was not used. Instead, subjects were classified as having a more serious problem, in terms of dependence, if their Ph Score was greater than 10 (i.e. "substantial" or "severe" dependence, see Table 1).

Taking first the consumption criterion, the initial sample was divided into those drinking above 100 units at initial assessment (n = 26) and those drinking at or below this level (n = 81). Mean week's consumption for the high consumers was 132.8 (s.d. = 34.39) compared with 55.2 (s.d. = 24.5) for the low consumers. These two groups did not differ with respect to marital, employment or socioeconomic status but there was a tendency for the high consumers to contain more men (80.8%) than the low consumers (59.3%) (X =

3.98, d.f. = 1, $p < 0.05$). In addition, the high consumers showed a significantly higher mean score on the MAST (15.46 vs. 10.80, $p < 0.001$) and a somewhat higher mean Ph Score (8.39 vs. 6.73, $p < 0.05$) than the low consumers. (Because of the large number of statistical tests conducted in this analysis, it may be safer to regard only those results significant at the .1% level as indicating true differences between the groups in question).

Considering only those subjects with data at both assessment points, consumption in the "high" group (n = 22) was reduced from 135.1 units / week (s.d. = 36.4) to 82.9 units / week (s.d. = 71.6), while consumption in the "low" group (n = 65) was reduced from 57.1 units / week (s.d. – 24.9) to 42.2 units / week (s.d. = 34.1). Mean consumption in "high" and "low" consumption groups at both assessment points is shown in Figure 2. An analysis of covariance was run on follow-up consumption level with study group and high versus low consumption as independent variables and initial consumption as the covariate. There were no significant main effects or interactions, although the interaction between the control group vs. manual groups contrast and high vs. low consumption approached significance ($p < 0.10$). This suggests a non-significant tendency for high consumers to benefit relatively more from the manual than from the control material. Within the high consumption group the reduction in consumption from initial to follow-up assessments was significant ($t = 3.48$, d.f. = 21, $p < 0.001$, one-tailed test).

Of the 22 subjects followed up in the high consumption group, seven (31.8%) were drinking below recommended levels at follow-up, compared with 27 (41.5%) out of 65 in the low consumption group. Only two subjects, one each from the high and low consumption groups reported having abstained in the week before follow-up. Of the seven high consumers who reported drinking below hazardous levels at follow-up, collateral information was available for four. Three of these were described by the informant as drinking "much less" and one as "somewhat less".

The initial sample was also dichotomized on high (n = 21) and low (n = 86) dependence on the basis described above. The high dependence group had a mean Ph Score of 12.5 (s.d. = 1.44) compared with 5.83 (s.d. = 2.65) for the low dependence group. The two groups did not differ with respect to marital status, employment status, socioeconomic status or gender but the high dependence group showed a higher mean score on the MAST (19.5 vs. 10.1, $p < 0.001$) and a tendency towards a higher mean weekly consumption (91.8 vs. 69.8, $p < 0.05$).

Confining attention to subjects with data at both assessment points, consumption in the high dependence group (n = 13) was reduced from 101.8 units / week (s.d. = 57.1) to 62.1 units / week (s.d. = 54.5), while consumption in the low dependence group (n = 74) was reduced from 72.4 units week (s.d. = 40.3) to 50.8 units / week (s.d. = 48.6). Relevant means are shown in Figure 2.

An analysis of covariance was run with study group and high versus low dependence as independent variables and initial level of consumption as the covariate. There were no significant main effects or interaction.

Of the 13 subjects followed up in the high dependence group, four (30.8%) were drinking below recommended levels at follow-up, compared with 30 (40.5%) in the low dependence group. Of the two subjects who were abstaining at follow-up, one came from the high and one from the low dependence group. Of the four subjects claiming to be drinking below recommended levels at follow-up, collateral information was available for three. In two cases, the informant reported that the subject was drinking "much less" and in the other, "about the same". One of the subjects whose informant reported "much less" drinking was also in the high consumption group.

Mean SAQD score for the overall follow-up sample measured retrospectively at follow-up was 14.22 (s.d. = 10.78, range = 0-51). Ph Scores collected at initial assessment were checked against retrospective scores on the SADQ. The correlation between these two variables was 0.53 ($p < 0.001$). Although this correlation was significant, the common variance between the two measures was only 28% and many subjects obtained widely differing scores on the two instruments. It had been originally intended to eliminate from further analysis those subjects in the high dependence group whose SADQ score was less than 30, thus confining attention to subjects whose classification of "high dependence" from the PH Score was confirmed by their SADQ score. In the event, however, the number of subjects who would have been eliminated by this rule (8 from 13 followed up) would have left too small a sample for analysis.

Predictors of reduced consumption

Predictors of change in consumption from initial assessment to follow-up in the overall sample ($n = 87$) were examined using a hierarchical multiple regression. Consumption at initial assessment significantly predicted consumption at follow-up (R squared = 0.224, $p < 0.001$). However, the addition of the variables control vs. manual groups, age, sex, marital status, income, employment stability, residential stability, MAST and Ph Score did not add significantly to the ability to predict consumption at follow-up.

Figure 2

Mean consumption at initial assessment and follow-up according to two criteria (level of initial consumption and level of dependence) for the presence of serious problems

Please note : a graph has to be generated ... copy, cut and past from the original document ... located on page 20 of the report

Discussion

Internal validity of findings

The procedures used in this study to increase the internal validity of its findings, in comparison to those of the previous study (Heather et al., 1986), were largely successful. By restricting entry to the study to those subjects who had completed initial assessment, the initial response rate was made 100%; by means of various procedures, the overall follow-up rate was increased to 81.3%; collateral information was available for 62.3% of subjects followed up; and all subjects followed up received a personal interview rather than being interviewed by telephone or through the post. There was no significant difference in follow-up rates between control subjects and those receiving the self-help manual, although there was a significant difference in follow-up rates between subjects who were offered some form of supplementary telephone contact and those who were not, a finding which will be commented on below. Finally, follow-up interviewers were unaware of the group the subject had been assigned to, and double blind in the sense that subjects were unaware of any group procedure other than the one they had received.

Several studies in the alcohol field have examined the relationship between subjects' self-reports of drinking behaviour and collateral reports, chiefly those of spouses or other relatives (Guze et al., 1963; McCrady et al., 1978; Maisto et al., 1979; Miller et al., 1979; Myers, 1983; Verinis, 1983). The conclusion from these studies is that relatively high agreement between subject and collateral reports can usually be expected, particularly when collaterals are asked to make only global ratings of drinking (McCrady et al., 1978), as in the method used here.

In the present study, there was only once case in which a self-report of a decrease was accompanied by a collateral report of an increase in consumption. In ten other cases, self-reports of a decrease were accompanied by collateral reports of "about the same" but this is not regarded as sufficient ground to doubt the veracity of these self-reports, particularly since Miller at al., (1979) found that collaterals are just as likely to underestimate as to overestimate the subject's self-report. In cases where the subject and collateral disagreed because the former reported more drinking than the latter, it is unlikely that the subject would have chosen to exaggerate the level of consumption. For these reasons, the general validity of the self-report data gathered in this study is regarded as adequate for purposes of analysis.

Unfortunately, the above studies provide no guidance as to the rules to be used to eliminate subjects' data, where it is desired to do this for particular analyses, on the ground of suspect validity. The arbitrary rule adopted here was to eliminate a subject if a self-report of decreased consumption by more than 25% was contradicted by a collateral report of increased consumption and, as we

have seen, only one subject was eliminated by this rule. However, the decision to confine certain analyses to subjects with collateral confirmation of self-reports meant eliminating all those subjects without collateral information, among whom the validity of self –reports had obviously not been specifically established. This resulted in a small sub sample of subjects with collateral confirmation of self reports and low statistical power for comparisons within this sub sample.

Improvements in the overall sample

As in the previous study, alcohol consumption in the sample as a whole was significantly decreased, as was the frequency of drinking and the maximum intake per day. This was accompanied by significant improvements in alcohol-related problems, degree of physical dependence on alcohol, physical health and well-being and degree of social interaction.

In the absence of a non-intervention control group, however, these improvements cannot be attributed to the effects of the brief intervention the subjects received. It may well be that the act of responding to a newspaper advertisement offering help to cut down drinking is already an indication of sufficient motivation for beneficial change to take place and that the rate of unassisted improvement in this sample would have been high. It is also possible that subjects were enlisted into the study at a point in their drinking history when consumption was unusually high and that the improvement observed in some cases was simply the result of a reversion to a more usual pattern of drinking (i.e. regression towards the mean).

Effects of the self-help manual

One of the main reasons for conducting this second study was the attempt to replicate previous findings with respect to evidence for the effectiveness of a controlled drinking self-help manual. Although no significant differences between study groups were found in an analysis of covariance of alcohol consumption at follow-up, a significantly higher proportion of subjects were still drinking above hazardous levels in the control group receiving a general information booklet on alcohol problems than in the groups receiving a behaviourally-based self-help manual. These hazardous levels were the equivalent of drinking regularly about five standard units of ethyl alcohol per day for men and above three standards units per day for women.

Although there was no significant difference in follow-up rate between subjects who received the manual and the control group, it might still be argued that the above difference in proportions drinking hazardously may be a spurious consequence of the fact that subjects lost to follow-up were ignored in the analysis. For this reason the log linear analysis was repeated under the two opposite assumptions that all subjects lost to follow-up would have been

drinking hazardously and that they would all have been drinking non-hazardously. The significant superiority of the self-help manual was confirmed in both cases. When the analysis was confined to only those subjects for who collateral confirmation was available, group sizes were too small to allow an adequate test of possible group differences between of a similar magnitude to that which had been observed in the complete follow-up sample. However, trends in the data were consistent with the superior effectiveness of the self-help manual found in the total follow-up sample.

Tests of differential proportions of subjects drinking above hazardous levels may be a more clinically relevant indicator of effectiveness in this research context than analysis of variance or covariance. Nevertheless, it remains to be explained why the proportional analysis revealed significant differences while the parametric test on continuous data did not. One reason for this may be the observed high variances of consumption scores (see Table 3) which may have masked real differences in effectiveness between control and manual groups.

Another possible explanation is that, because they had been given a target to aim for, subjects in the groups given the self-help manual may have succeeded in reducing consumption to just under recommended levels whereas subjects in the control group, although they may have shown substantial reductions in consumption, were still drinking slightly over recommended levels at follow-up. An inspection of the distribution of consumption data at follow-up lends some support to this idea. For example, among subjects who had received the self-help manual, eleven out of 58 reported drinking at follow-up within five units under the recommended limit for their sex, whereas no subject in the control group fitted this description.

Whichever explanation is preferred, it is still the case that trends in the continuous data and the establishment of confidence intervals around the difference in mean consumption between the control and manual groups are consistent with the conclusion of the superior effectiveness of the self-help manual.

With regard to the magnitude of effect of the self-help manual, 53% of subjects who received the manual were drinking above hazardous levels (based on only those followed-up), compared with 78% in the controls. This would appear to be a clinically significant effect. On a cost-effectiveness basis, it would justify the widespread promotion of self-help materials by special advertisements in newspapers or by other means with the intention of assisting the efforts of excessive drinkers who have decided to do something about their drinking. It would also justify the commercial sale of self-help manuals, particularly since the greater external validity of the study by Heather et al. (1986) increases the generalisability of the combined findings of the two studies.

Even if the "worst case" assumption is made that all those who were lost to follow-up did badly, the added benefit from the self-help manual compared with the control material is probably still cost-effective (63% above hazardous levels compared with 81% in the controls). However, the "worst case" assumption is unlikely to be correct since there is evidence that problem drinkers who voluntarily terminate participation in a follow-up or who refuse to be interviewed, as was the case with the great majority of those lost to follow-up here, tend to show outcomes as favourable on average as other subjects in the study (Sobell et al., 1984; MacKenzie et al., 1987).

Change among subjects with more serious problems

One of the unexpected finding of the previous study was that subjects with more serious problems, defined either in terms of levels of consumption or dependence, appeared to benefit from the brief intervention as least as much as those with less serious problems. In the design of the present study, collateral information was regarded as particularly relevant to the confirmation of improvements among subjects with evidence of more serious problems.

In the present study, subjects drinking over 100 units at initial assessment were compared to those drinking at or below this level and subjects showing "substantial" or "severe" dependence were also compared with those showing lesser degrees of measured alcohol dependence. In cases of both dichotomies, subjects classified as more seriously impaired reported a significantly higher number of alcohol-related problems in the past week than the other subjects.

Subjects who reported drinking over 100 units / week showed a significant reduction in consumption at follow-up, but there was no evidence that these subjects showed a relatively greater decrease in consumption those initially drinking at lower levels. Moreover, despite a non-significant tendency in the data in this direction, there was no firm evidence that high consumers benefited more from the self-help manual that from the control material. A similar conclusion applied to subjects reporting a "substantial" or "severe" level of dependence at initial assessment : there was no significantly greater reduction than among subjects with lower levels of dependence at initial assessment.

Among subjects with more serious problems, mean levels of consumption at follow-up were well above recommended levels (83 units / week for the high consumption group and 51 units / week for the high dependence group). On the other hand, just under one-third of subjects in each of these groups reported having reduced consumption to below hazardous levels although the number of subjects involved in these analyses was low.

The high level of follow-up consumption among more seriously impaired subjects combined with the fact that roughly one-third of subjects in each of

these groups reported having reduced consumption to below hazardous levels although the number of subjects involved in these analyses was low.

The high level of follow-up consumption among more seriously impaired subjects combined with the fact that roughly one-third were drinking below recommended levels suggests a high variance in follow-up consumption levels among these subjects, with some individuals reducing to relatively low levels and other staying at the same level or even increasing consumption. Inspection of the data shows that this is indeed the case (see Table 2). It further suggests that those subjects with more serious problems who show no improvement from the brief intervention might need a more intensive intervention in order to benefit. Unfortunately, multiple regression analysis failed to provide significant predictors of positive response o the intervention and there is at present no means of distinguishing those respondents to a self-help project who are likely to benefit from it from those who are not. This is an area where further research is required. It may be that successful prediction of response to this type of brief intervention can be achieved by including variables not measured here, such as the "stage of change" the subject has reached (Prochaska & DiClemente, 1986) or personality variables such as internal versus external locus of control (Donovan & O'Leary, 1979).

On balance, a figure of 30% successful response at six month follow-up among subjects with more serious problems is encouraging. This is particularly so in view of the fact that the advertisement for the project and the opening pages of the self-help manual deliberately tried to exclude high dependence subjects from the study and suggested that they should seek more formal treatment. Thus, even a limited rate of positive response among those who resisted this advice and continued with a self-help approach may be regarded as of some value on the grounds that these individuals were unlikely to receive help from any other source. However, it would be necessary to examine the stability of these reductions in consumption over time before firmer conclusions could be drawn.

Effects of telephone contact

Another surprising suggestion from the previous study was that subjects interviewed by telephone had a better outcome than those contacted solely by post. The present study was therefore designed to investigate the hypothesis that supplementary telephone contact would add to the effectiveness of a self-help manual and, further, that a personal interview by telephone would be superior in effectiveness than the opportunity to report progress to a telephone answering service.

Neither of these hypotheses gained any support from the study. Although the relevant differences were not statistically significant, subjects in the two telephone contact groups tended to have poorer outcomes than those in the

group given the self-help manual only. Although there was a non-significant tendency in the data for the telephone interview to be more frequently used by subjects than the answering service, there was no evidence of any difference in effectiveness between the two types of service and no relationship between use made of telephone services and outcome.

Further, inspection of data on use of the telephone reporting arrangements suggests that telephone contact was unwelcome to a substantial proportion of subjects. 21 out of 49 subjects made no use at all of telephone opportunities and a further five used them only once. These subjects tended to be those who refused to be interviewed at follow-up despite having previously given agreement to this and it was chiefly for this reason that the two telephone groups showed a significantly lower proportion of subjects successfully followed up than the other two groups.

These observations may be combined with those from the previous study to suggest a hypothesis about the general characteristics of problem drinkers who respond to newspaper advertisements offering help to cut down drinking. Heather et al;. (1986) found that subjects who were lost to six month follow-up, who amounted to nearly half the initial sample, were significantly more "socially stable" (i.e. more likely to be employed and married, and higher on income/employment stability and residential stability). This may mean that these subjects, being more "respectable" than others, were more than usually sensitive the stigma of admitting a drinking problem and that this is why they responded to a newspaper advertisement rather than sought help through more conventional means. It should be remembered here that the average level of impairment in this study, while not matching that of a typical inpatient treatment population, was comparable in many ways to a typical outpatient population.

Similarly, in the present study, it may be that those subjects who made no use of telephone contact and tended to refuse follow-up interview were also sensitive to stigma and therefore wished to minimise their contact with the agency offering help for problem drinkers. It is possible that some of these subjects made a rapid recovery which they did not attribute to the effects of the materials sent them and which resulted in feelings of embarrassment in relation to their participation in the self-help project.

In summary, it would seem clear that there is little to be gained by adding the possibility of telephone support to self-help approaches for problem drinkers. The most likely explanation for this negative finding is that many problem drinkers who respond to newspaper advertisements to seek help for their problem rather than try more conventional means are likely to be those especially sensitive to the stigma of admitting a problem and therefore unwilling to take part in closer contact with helping agencies.

This does not mean, however, that telephone contact may not be a useful addition to other forms of brief intervention, especially where problem drinkers have taken the initiative to contact an agency to seek help. Moreover, the converse of the suggestion that many users of self-help manuals are especially sensitive to stigma is the idea that such manuals may have an especially important role in helping agencies, although this suggestion should be more directly investigated.

Conclusions

1. A previous finding that a self-help manual is effective in enabling problem drinkers to reduce consumption to safer levels was supported by the present results. A significantly greater proportion of subjects drinking below recommended levels for "non-hazardous" drinking was found among subjects who had received a self-help manual than among those who had received a general information and advice booklet.

2. Confidence in the effectiveness of the self-help manual is increased by the greater internal validity of the present findings compared with those of the previous study. In view of the estimated extent of the self-help manual's effect in the present study and of the greater external validity of the earlier study's findings, the evidence justifies the widespread promotion of self-help manuals as a means of increasing rates of natural recovery from alcohol problems.

3. As in the previous study, there was no evidence to suggest that the potential benefits of a brief intervention (including that represented in the control group) are confined to those showing less serious problems, defined either in terms of consumption levels or degrees of alcohol dependence. There is no evidence wither that more serious problem drinkers benefit relatively more than other subjects. However, the study provides no grounds for concluding that, within the range of problem drinkers sampled, there exists an upper limit of consumption or dependence above which self-help manuals cannot be effective. Roughly one-third of subjects in "serious" problem drinker categories reported drinking under recommended levels at follow-up but it is not possible at present to predict which serious problem drinkers will benefit from brief interventions and which will not. Despite a non-significant tendency in the data, there was no firm evidence that subjects reporting higher consumption at initial assessment benefited relatively more from the self-help manual than the control material.

4. There was no evidence that supplementary telephone contact adds to the effectiveness of a self-help manual and no evidence that telephone progress reports to an interviewer were more effective than those to an answering service. Unexpectedly little use was made of opportunities for telephone contact during the study. This may be because many individuals who respond

to newspaper advertisements offering help to problem drinkers are especially sensitive to the stigma of admitting an alcohol problem and wish to minimise contact with helping agencies. For this reason, the self-help approach may be particularly helpful to those who might be described as "closet" problem drinkers.

References

Brownell, K D., Heckermann, C L & Westlake, R J (1978). Therapist and group contact as variables in the behavioural treatment of obesity. *Journal of Consulting and Clinical Psychology 46,* 593-4.

Chick J (1980). Alcohol dependence : methodological issues in measurement; reliability of the criteria. *British Journal of Addiction, 75,* 176-86.

Chick K & Duffy J. *Drinking Survey.* Edinburgh : Alcohol Research Group, University of Edinburgh.

Clark, W B & Cahalan D (1976). Changes in problem drinking over a four-year span. *Addictive Behaviours, 1,* 251-9.

Donovan D M & O'Leary M R (1979). Control orientation among alcoholics : a cognitive social leaning perspective. *American Journal of Drug & Alcohol Abuse, 6,* 487-99.

Glasgow, R E & Rosen G M (1978). Behavioural bibliotherapy : a review of self-help behaviour therapy manuals. *Psychological Bulletin, 85,* 1-23.

Glasgow R E., Schafer L & O'Neill K (1981). Self-help books and amount of therapist contact in smoking cessation programs. *Journal of Consulting & Clinical Psychology, 49,* 659-67.

Grant M, Plant M & Saunders W (undated). *Drinking and Alcohol Problems in Scotland.* Edinburgh : Scottish Health Education Group.

Guze SB, Tuason V B, Stewart M A & Picken B (1963). The Drinking History: a comparison of reports by subjects and their relatives. *Quarterly Journal of Studies on Alcohol, 24,* 249-60.

Hall W & Bird K D (1986). Simultaneous multiple comparison procedures for categorical data. *Australian & New Zealand Journal of Psychiatry, 20,* 350-9.

Health Education Council (undated). *That's the Limit.* London : Health Education Council.

Heather N (1986a). Minimal treatment interventions for problems drinkers. In G Edwards (ed) *Current Issues in Clinical Psychology* (vol IV) London : Plenum Press.

Heather N (1986b). Change without therapists " the use of self-help manuals by problem drinkers. In W R Miller & N Heather (eds). *Treating Addictive Behaviours : Processes of Change*. New York : Plenum Press.

Heather N. (1989). Psychology and brief interventions. *British Journal of Addiction, 84*, 357-70.

Heather N (1989b). Brief intervention strategies. In R K Hester & W R Miller (eds) *Handbook of Alcoholism Treatment Approaches*. New York : Pergammon Press.

Heather N, Whitton B and Robertson I. (1986). Evaluation of a self-help manual for media-recruited problem drinkers : six month follow-up results. *British Journal of Clinical Psychology, 25*, 19-34.

Heather N, Robertson I, MacPherson B, Allsop S and Fulton A (1987). The effectiveness of a controlled drinking self-help manual : one year follow-up results. *British Journal of Psychology. 26*, 279-87.

Hochstim, J R (1967). A critical comparison of three strategies of collecting data. *Journal of the American Statistical Association 62*, 976-89.

Kanfer F H (1980). Self-management methods. In G H Kanfer & A P Goldstein (eds). *Helping People Change* (2nd edition). New York : Pergammon.

MacKenzie A, Funderburk F R, Allen R P and Stefan R L (1987). The characteristics of alcoholics' frequently lost to follow-up. *Journal of studies on Alcohol, 48*, 119-23.

Maisto S A, Sobell L C & S0blee M B. (1979). Comparison of alcoholics' self-reports of drinking behaviour with reports of collateral informants. *Journal of Consulting and Clinical Psychology, 47*, 106-112.

McCrady B S, Paolino T J Jr, Longabaugh R (1978). Correspondence between reports of problem drinkers and spouses on drinking behaviour and impairment. *Journal of Studies on Alcohol, 39*, 1252-7.

Miller B A, Pokorney A D, Valles J & Cleveland S E (1970). Biased sampling in alcoholism treatment research. *Quarterly Journal of Studies on Alcohol, 31*, 97-107.

Miller W R (1978). Behavioural treatment of problem drinkers : a comparative outcome study of three controlled drinking therapies. Journal of Consulting & Clinical Psychology, 46, 74-86.

Miller W R & Marlatt G A (9184). *Manual for the Comprehensive Drinker Profile*. Odessa, FL : Psychological Assessment Resources Inc.

Miller W R & Taylor C A (1980). Relative effectiveness of bibliotherapy, individual and group self-control training in the treatment of problem drinkers. *Addictive Behaviours, 5*, 13-24.

Miller W R, Crawford L & Taylor C A (1979). Significant others as corroborative sources for problem drinkers. *Addictive Behaviours, 4*, 67-70.

Miller WR, Taylor C A & West J C (1980). Focused versus broad spectrum behaviour therapy for problem drinkers. *Journal of Consulting & Clinical Psychology, 48*, 590-601.

Miller W R, Gribskov C & Mortell R (1981). The effectiveness of a self-control manual for problem drinkers with and without therapist contact. *International Journal of the Addictions, 16*, 829-39.

Myers T (1983). Corroboration of self-reported alcohol consumption : a comparison of the accounts of a group of male prisoners and those of their wives/cohabitees. *Alcohol & Alcoholism 18*, 67-74.

Prochaska J O & DiClemente C (1986). Toward a comprehensive model of change. In W R Miller & N Heather (eds), *Treating Addictive Behaviours : Processes of Change*. New York : Plenum Press.

Robertson I & Heather N (1985). *So You Want to Cut Down Your Drinking? A Self-help Guide to Sensible Drinking*. Edinburgh : Scottish Health Education Group

Saunders W M & Kershaw P W (1979). Spontaneous remission from alcoholism : a community study. *British Journal of Addiction, 74*, 251-65.

Selzer M L (1971). The Michigan Alcoholism Screening Test : the quest for a new diagnostic instrument. *American Journal of Psychiatry, 127*, 1653-8.

Sobell LC (1990). *Natural recovery from Alcohol problems : a controlled study*. Paper presented at Fifth International Conference on Treatment of Addictive Behaviours, University of Sydney, 4-9 February.

Sobell L C, Sobell LC & Maisto S A, (1984). Follow-up attrition in alcohol treatment studies : is "no news" bad news, good news or now news? *Drug & Alcohol Dependence 13*, 1-7.

Sobell, M B & Sobell L C (1981). Frequent follow-up data gathering and continued care with alcoholics. *International Journal of the Addictions 16*, 1077-86.

Stockwell T, Hodgson R, Edwards G, Taylor C & Rankin H (1979). The development of a questionnaire to measure severity of alcohol dependence. *British Journal of Addiction, 74*, 79-87.

Tuchfeld B S (1981). Spontaneous remission in alcoholics : empirical observations and theoretical implications. *Journal of Studies on Alcohol, 42*, 626-41.

Verinis J S (1983). Agreement between alcoholics and relatives when reporting follow-up status. *International Journal of the Addictions, 18*, 891-4.