MINIMAL INTERVENTIONS FOR PROBLEM DRINKERS: A STUDY OF EFFECTIVENESS AND AN ANALYSIS OF THE NURSE'S ROLE

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ABSTRACT

The study described in this thesis consists of two main parts.

The first was a study of brief interventions for problem drinking. 998 general hospital in-patients, who were receiving treatment for conditions which were not primarily alcohol-related, were screened to identify potential problem drinkers. 24.5% reported levels of alcohol consumption which were in excess of the recommended "sensible limits" as suggested by the Health Education Authority (1989). 15% were regular consumers of alcohol who had not previously received treatment for an alcohol problem.

The potential problem drinkers were assigned to one of four experimental groups. Patients in one group received a health education booklet about the effects of alcohol and how to reduce consumption to within recommended sensible limits. The second group were given this information verbally. The third group were given both the booklet and the verbal advice. The fourth group received no intervention.

Follow-up data were collected one year later, at which time the mean level of alcohol consumption reported by the entire sample was significantly less than at entry to the study. This was also the case for the mean number of alcohol-related problems. These reductions were supported by reductions in the mean levels of gamma-glutamyl transferase and aspartate transferase but not in mean erythrocyte volume. No statistically significant treatment effects were found for any of the outcome variables.

The second part of the study was a descriptive survey of nurses' practice of assessing patients' alcohol consumption. The nurses were also asked about their knowledge of factors which are necessary to enable them to give appropriate advice to problem drinkers. The results suggested that, although nurses acknowledged such a role, limitations in their knowledge prevented them from being effective in both detecting problem drinkers and in delivering health education.

CHAPTER ONE

INTRODUCTION

1.1 RATIONALE FOR THE STUDY

The adverse effects of excessive alcohol consumption on physical, psychological and social well-being are well documented (Royal College of Psychiatrists, 1986; Royal College of General Practitioners, 1986; Royal College of Physicians, 1987; Findlay, 1991). Many patients with alcohol-related problems do not present themselves for treatment until their problems are compounded by advanced physical, psychological and social complications (Skinner and Holt, 1983). As a result, treatment is often unsuccessful and costly in terms of National Health Service and voluntary organisation resources (Heather, 1986).

Traditionally treatment of patients with drinking problems has remained within the domain of specialist psychiatric services. However, a number of studies have noted the high frequency of alcohol-related problems among patients attending general hospitals (Jarman and Kellet, 1979; Lockhart et al, 1986; Ryder et al, 1988; Watson et al, 1991) and the increased morbidity and mortality among heavy drinkers (MacIntyre, 1979; Pequignot, 1978; Kristenson et al, 1980; Saunders et al, 1981). McDonnell and Maynard (1985) estimated that the overall financial burden of excessive alcohol use to the National Health Service in England and Wales was £94.35million per annum. Of this sum, £17.90M was accounted for in treatment costs of alcohol-dependent patients to the psychiatric services. £7.87M was the estimated cost of alcohol dependency and alcohol-related liver disease to non-psychiatric hospital services and a further £68.58M was attributed to the cost of in-patient care for other alcohol-related problems.

Minimal interventions following early detection have been shown to be a cost-effective means of treatment (Holder et al, 1991). Such treatments include simple advice aimed at giving information about health risks associated with heavy drinking and advice about sensible drinking. The advice may be given verbally and may be supplemented with relevant reading material (Chick et al, 1985). Research has also demonstrated the effectiveness of self-help manuals in helping individuals to change drinking behaviour (Miller and Taylor, 1980; Heather et al, 1986). The term "minimal intervention" is relative and is generally taken to mean some form of treatment which

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is less intensive in terms of time than traditional methods of treatment. An additional characteristic of this approach is that it is less specialist in nature and can be administered by health care workers whose primary specialist interest is not necessarily that of substance abuse (Babor et al, 1986).

The development in recent years of a problem-solving approach in nursing has heightened awareness in nurses of the importance of accurate and comprehensive assessment as the prerequisite for the planning and implementation of effective care. Having more frequent interactions with patients than any other member of the health care team, the general hospital nurse is ideally placed, given the appropriate tools, to both identify and administer this type of brief intervention to individuals whose alcohol consumption is outwith safe limits but who are not yet established as dependent drinkers (McBrien, 1983). Despite this situation, general nurses appear reluctant to give advice to such patients (Rowland and Maynard, 1989).

The promotion of health and the prevention of illness were recognised as an aspect of the role of the nurse in the Strategy for Nursing, Midwifery and Health Visiting in Scotland which was circulated to all registered nurses and midwives in Scotland in 1990 (Scottish Home and Health Department, 1990). This aspect of nurses' work is also documented in the literature (Storey, 1986; Close, 1987; Macleod-Clark et al, 1987).

The philosophy of nurse education has changed with the introduction of Project 2000 courses in September, 1992 in Scotland. In addition to preparing nurses to care for the ill, the promotion, restoration and maintenance of health are central themes of the new curriculum (UKCC, 1986). This increased focus on health is likely to result in further emphasising health education and health promotion as part of the role of nurses in the future. If nurses are to be successful in this area, their practice needs to be rooted in sound knowledge. While several authors have advocated a role for nurses in the management of alcohol problems among general hospital patients, there is a dearth of evidence of nurses' practice and their relevant knowledge in relation to this.

The target set by the World Health Organization in a policy statement for Europe is "to reduce alcohol consumption by 25%, with particular attention to reducing harmful use" (World Health Organization, 1991).

At national level in Scotland, the target is to achieve a reduction by the year 2000 of 20% in alcohol consumption for the proportion of the population whose drinking is in excess of recommended sensible limits (Scottish Office Home and Health Department, 1991; 1992).

At local level, Greater Glasgow Health Board has affirmed that its target is to achieve a reduction in drinking in those who exceed the recommended limits but, because of lack of historical data, has declined from quantifying the extent of the proposed reduction (Greater Glasgow Health Board, 1992). This strategy document produced by the Greater Glasgow Health Board acknowledged the opportunity which admission to hospital affords for health promotion. Furthermore, it gave a commitment that the Health Board will provide appropriate support and advice on healthy living and disease prevention to those in hospital.

Recommendations have been made regarding sensible limits of alcohol consumption for men and women (Royal College of Physicians, 1987; Health Education Authority, 1989). These limits are up to 21 units per week for men and 14 units per week for women. One standard unit is equivalent to 8 grammes of ethanol.

The project described in this thesis combines the analysis of data concerning certain components of health promotion with an exploration of relevant nursing practice. The purpose of the study is twofold; namely to extend the current knowledge about minimal intervention for potential problem drinkers, and to examine the role of the nurse in relation to the assessment of patients' alcohol consumption and the advice given to patients whose drinking is problematic.

To date, much of the research in the area of minimal interventions for problem drinkers has been the controlled evaluation of the effectiveness of giving a combination of appropriate information and advice which has been augmented by written material in the form of a pamphlet or a more detailed self-help manual. Miller and Taylor, (1980) compared the use of a self-help manual with more intensive treatment. Other authors have compared the merits of information-giving leaflets with self-help manuals which are based on a cognitive-behavioural approach. It appears that very little work has been done to analyse the relative effectiveness of the separate elements of minimal intervention. These elements consist of personal intervention by a health care professional in which information is given about alcohol-related health risks and advice about how to reduce consumption levels, the provision

of reading material or a combination of these two treatments. It is proposed that the first part of this study should address these issues.

The second aspect of the study concerns the role of the nurse in this area. There is little knowledge available of the current practice of nurses in the assessment of alcohol consumption in general hospital patients and the provision of advice for problem drinkers in general hospital wards. However, as has been stated, the nurse is well-placed to identify problem drinking in her patients. In addition, given that one of the features of minimal intervention strategies is that they can be delivered by knowledgeable generalist health workers rather than highly specialised practitioners, nurses are an appropriate group to provide such treatment. It was therefore decided to investigate this aspect of nurses' work. Underpinning the effectiveness of a role which involves giving advice, is the possession of knowledge of matters such as safe levels of consumption, alcohol-related health problems and measures which can be adopted to help people to reduce alcohol consumption. As part of the investigation described in this thesis, a survey was designed to assess nurses' knowledge of these factors.

1.2 AIMS OF THE STUDY

The aims of the study are to:

1) select or modify an existing tool for the purpose of identifying problem drinkers among general hospital in-patients.

2) evaluate the relative effectiveness of:

    (a) a health education booklet designed for the specific purpose of giving advice to people whose drinking is in excess of recommended safe limits;

    (b) personal advice about the effects of excessive alcohol consumption and how to reduce consumption;

    (c) a combination of the booklet and the advice;

    (d) no treatment.

3)   investigate nurses' knowledge of

   (a)   standard units of alcohol;

   (b)   sensible limits of alcohol consumption;

   (c)   alcohol-related health problems.

4)   investigate nurses' practice in relation to

   (a)   assessment of their patients' alcohol consumption;

   (b)   giving advice to problem drinkers about their drinking.

5)   investigate whether nurses have the access to health education literature to give to problem drinkers.

CHAPTER TWO

REVIEW OF THE LITERATURE

2.1   INTRODUCTION

The methodologies described in published reports of brief intervention studies vary widely. Differences include the settings in which the studies were carried out and the populations from which the subjects of the studies were derived. Variations in recruitment criteria, personnel involved in the delivery of the interventions and, indeed, different definitions of the terms "brief", "minimal" and "early intervention" all contribute to difficulties in evaluating and comparing the results of work carried out in this field.

In order to present a critique of the relevant literature in a coherent way, the studies have been categorised according to the settings in which they were conducted. The studies will be reviewed as:

> general population studies,
> general practice studies,
> general hospital studies.

The literature relevant to the education needs and the role of the nurse in management of problem drinkers among general hospital in-patients will also be reviewed.

2.2   MINIMAL INTERVENTION STUDIES

2.2.1   General Population Studies

Studies of minimal interventions for alcohol problems have been conducted in the general population in the main in two ways. Firstly, subjects have been recruited to such studies as a result of their participation in general health screening programmes. Secondly, studies have been conducted to evaluate the effectiveness of such treatments by recruiting subjects from newspaper advertisements. These advertisements typically offer help and advice to people who wish to cut down their drinking but have experienced difficulty in past attempts to do so.

2.2.1.1 Health Screening Studies

In 1974, a seven-year general health screening programme was established to detect cardiovascular risk factors in young and middle-aged men in the population of Malmö in Sweden. The investigations included biochemical analyses of liver enzyme profiles of all participants. Problems associated with alcohol use was assessed by the Michigan Alcoholism Screening Test (Selzer, 1971). Kristenson et al (1983), and Kristenson and Hood (1984), reported a study of the subgroup of those men, aged 41 to 48 years, whose gamma-glutamyl transferase (GGT) levels were found to be in the top decile of the total sample on two consecutive occasions. The authors described the effects of an intervention programme of advice about alcohol consumption on 473 men's subsequent sickness and in-patient hospitalisation rates.

The subjects were randomly allocated either to a treatment or a control group. The treatment and control groups consisted of 261 and 212 men respectively. Those in the control group received a letter advising them to restrict their alcohol consumption and were informed that they would be invited to attend for a further blood test to analyse GGT levels in two, four and six years time.

The men who had been assigned to the treatment group were seen at three-monthly intervals by a physician, and once a month by a nurse. At these consultations the men were encouraged to reduce their consumption of alcohol. GGT levels were measured monthly and the results were used to provide feedback and also to monitor progress. The frequency of the consultations was reduced when the GGT was stabilised at an acceptable level.

The mean number of days of absence due to sickness in both groups were compared two and four years following the intervention. The men in the treatment group had significantly fewer sickness days than the control group at both follow-up times (Kristenson et al, 1983; Kristenson and Hood, 1984). In the 1984 paper it was reported that, during the five years following screening, the intervention group spent 1,012 days in hospital compared with the 2,612 days which the control group spent as hospital patients. This was interpreted as meaning that the men in the treatment group had lower rates of morbidity than those in the control group who had not received treatment.

The authors concluded that the intervention had resulted in drastic reductions in the need for hospitalisation. However, no regression analyses were carried out and the statistical analyses which were applied to the data are not adequate to demonstrate a causal link between the intervention and the differences in the numbers of sickness or hospitalised days in the intervention and control groups. Nevertheless, the results appear impressive.

Comparisons of the GGT values of both the control and treatment groups at both the two and four year follow-up estimates were significantly lower than at the initial screening, but no significant difference was found between GGT levels in the control and intervention groups (Kristenson et al, 1983). These changes did not, therefore, lend support to the implication that the greater morbidity in the control group was caused by alcohol consumption.

The authors rightly cautioned against generalising these results to other populations and countries. Instead they advocated testing the effectiveness of similar treatments elsewhere. It is possible that different results would be found in the United Kingdom where unemployment rates may be higher than in Sweden, consequently masking the number of days of sickness. Attitudes of the British public to work, absence and alcohol consumption may also differ from those of Scandinavians.

Despite these comments, the results suggest support for the thesis put forward by Edwards et al (1977) that brief treatments may have a place in the treatment of alcohol problems. However, there is a need to investigate the effectiveness of such approaches to potential problem drinkers of a wider age range and to women, as well as in different cultural and health care settings.

Romelsjö et al (1989) conducted a similar study in Stockholm, Sweden on a smaller scale as part of a cross-sectional general health study. Following assessment of alcohol consumption, patients were referred to their General Practitioner (GP) who conducted a health examination, further assessed their consumption of alcohol and investigated their history of treatment for alcohol-related problems. Patients were allocated randomly to a control or an intervention group. The sample consisted of 42 subjects in the control group and 41 in the intervention group. Both groups were treated as in the study by Kristenson et al (1983, 1984). The intervention was conducted by the GP.

One year later improvements were observed in both groups in self-reported alcohol consumption, GGT levels, and a measure of alcohol-related problems. However, the changes did not reach the level of significance, nor was there a significant difference between the groups. The follow-up data had been collected by the patients' general practitioner who had carried out the preliminary health examination for both groups and had also conducted the intervention. It is possible that the fact that the follow-up data had not been collected by an independent interviewer had affected the patients' responses at the follow-up assessment.

2.2.1.2 Media-Recruited Studies

Several studies have been conducted to evaluate the effectiveness of brief treatments for alcohol problems in the general population by recruiting subjects from newspaper advertisements.

Miller and Taylor (1980) employed this method to recruit 56 subjects to compare outcomes in clients who were given either self-help reading material only, or between six and eighteen treatment sessions from a therapist. There was no control group which received no treatment. Improvements were seen in clients in all groups but no treatment effect was demonstrated. Collateral data supported this finding and GGT levels, although lower at follow-up for the total sample, failed to endorse the superiority of any one of the treatments evaluated. The total number of clients followed up was 41. Numbers for each group at follow-up were not given but they may have been insufficient to allow statistically significant differences in the outcome variables to have been detected.

Similar results were reported by Sanchez-Craig et al (1989) in their study of media-recruited clients in Toronto, Canada. They explored whether additional interpersonal contact was more effective than bibliotherapy on its own by evaluating the effects of personal counselling and counselling when combined with two types of reading material on patterns of alcohol consumption after three, six and twelve months. There was no control group which received no treatment.

It was found that, after one year, although there was no significant difference in the reduction in heavy drinking between the treatment groups, the women participants reported significantly greater improvements than the men. At the three-month follow-

up, significantly more of the women, who had received reading material had achieved moderate drinking, than those who had only been treated by a therapist.

This difference was no longer evident at one year. All groups had reported a significant reduction in the mean number of heavy drinking days. However, a reduction in the number of heavy drinking days may only indicate a change in the pattern of alcohol consumption and need not necessarily equate with a reduction in overall level of consumption.

In a study conducted in the Dundee area of Scotland, Heather et al (1986) compared the effectiveness of a 56 page self-help manual and a simple booklet for individuals who had responded to a newspaper advertisement offering help to heavy drinkers. The booklet gave information and advice about drinking problems and addresses of local treatment agencies. In addition to giving this information, the self-help manual described measures which could be adopted to help reduce consumption and gave details about how to use a drinking diary to calculate consumption and monitor drinking. The only clients whose treatment included personal contact was a sub-sample of subjects who had been interviewed initially by telephone.

The authors found that the group who had received the self-help manual reported a significantly greater reduction in the previous week's mean alcohol consumption at the six month follow-up than those who had been given the booklet. However, the authors reported only the results of a one-tailed test. It is not known whether a two-tailed test would also have reached the level of statistical significance. The significant difference between the groups in reported alcohol consumption was not maintained at the one-year follow-up (Heather et al, 1987).

The group who had received the self-help manual also reported significantly more control of drinking problems and greater improvements in physical health (Heather et al, 1986). Changes in these variables at the one-year follow-up were not reported (Heather et al, 1987). The telephone sub-sample reported significantly fewer marital problems, improved control of drinking and greater residential stability than the group whose contact had been only postal. The authors concluded that personal contact, though minimal, may have contributed to the difference (Heather et al, 1987).

Blood alcohol concentration (BAC) and GGT levels were analysed at the one-year follow-up for the 52 clients who lived in the Glasgow area (Heather et al, 1987).

Biological markers were therefore available in 18% of the total sample who were followed up. The results of the blood alcohol concentration corroborated the majority of self-reports but the relationship between reported alcohol consumption and GGT was less conclusive. However, the report gave no indication of how representative these clients were of the total sample. The results should therefore be interpreted with caution.

Only 31.3% of those who had responded to the advertisement demonstrated their agreement to participate in the project by returning assessment questionnaires. 16.8% and 14% of the original respondents participated in the six-month and one-year follow-up assessments respectively. This low response rate raises questions about the validity of the results in that the responses of the majority of recipients to both forms of literature could not be determined. It is distinctly possible that those who had self-selected themselves into the study may have responded differently to those who did not opt in.

The questionnaire used for assessment purposes was the Life Activities Inventory (LAI) which is a 50-item instrument. It was developed in Denver, Colorado and validated for use with problem drinkers in South Dakota (Heather et al, 1986). It therefore cannot be assumed to function in the same way in the different cultural settings of Scotland and the U.S.A.

In a further study, Heather et al (1990) addressed some of the problems concerning the validity of the results of the earlier work (Heather et al, 1986; 1987). In addition, they further investigated the finding that supplementary contact by telephone had contributed to improved outcomes. This additional interpersonal contact did not appear to influence changes in reported alcohol consumption between entry to the study and the six-month follow-up. The results confirmed the earlier finding of the superiority of the self-help manual over the booklet in helping drinkers to achieve sensible drinking. Advice about sensible levels of drinking had been suggested in the manual but not in the booklet. It may be that this information had been learned and recalled by the subjects who had received the manual. No data about changes in the prevalence of alcohol-related problems at follow-up were presented. Changes in actual drinking behaviour cannot reliably be assumed to have occurred.

Although no biological markers were analysed, data from the collateral reports confirmed the subjects' self-reports. Such data, however, are subject to the same reservations as self-report data.

None of the media-recruited studies included a control group which received no treatment. The groups who received the booklets in the Heather et al and Sanchez-Craig studies acted as control groups with which to compare the results of those who received the self-help manuals. Sanchez-Craig et al (1989) justified the lack of a non-treatment control group on the grounds that it is unethical to refuse treatment to people who had responded to an advertisement for treatment. It can be argued, however, that it is unethical to conduct a study without such a group because there is no way of measuring the extent of the effectiveness of the treatment or whether changes may have occurred spontaneously, irrespective of treatment. The study designs would have been enhanced by the inclusion of a control group which would have allowed the relative effectiveness of the reading materials to have been evaluated against a "no treatment" condition.

A criticism which may be levelled at media-recruited research projects is that the newspaper advertisements did not refer to the fact that those who responded to the advertisement would be participating in a research project. This suggests that informed consent was not sought. However, Heather et al (1990) were careful to point out that participants' agreement had been requested by letter.

The subjects who had been recruited by newspaper advertisements were self-selected, in that they had responded to the advertisement of their own free will, as far as was known. Their motivation to change may well be different from those whom a nurse in a hospital ward might identify as a problem or potential problem drinker.

In Sanchez-Craig et al's studies, (1989; 1991) the treatment was offered from an Addiction Research Foundation. In the Dundee study (Heather et al, 1986; 1987), the newspaper advertisement referred respondents to a Scottish Health Education Group Freepost number. The clients were therefore representative of a different population from that which is available for opportunistic screening in a hospital setting. As such, their motivation to achieve a change in their drinking and expectations of treatment may have been different from that of hospital in-patients.

2.2.2   General Practice Studies

The DRAMS (Drinking Reasonably and Moderately with Self-control) minimal intervention package which had been developed by the Scottish Health Education Group for use by General Practitioners was evaluated by Heather et al (1987a). The study failed to demonstrate statistically significant treatment effects between a non-treatment control group, those who were given verbal advice and the group who were given a combination of reading materials and consultations with the GP.

Wallace et al (1988), on the other hand, described a large controlled study which showed positive effects of minimal intervention by general medical practitioners on the drinking habits of heavy drinkers among their patients.

A self-administered questionnaire for the purpose of screening for inclusion in the study was sent by post to the patients from half of the practices which participated in the study.   In the remaining 24 practices, the questionnaires were handed out personally to patients who attended the surgeries.   Most were distributed by the receptionist, but some patients received questionnaires from nurses and GPs (Wallace et al, 1987).   The response rate of the mailed questionnaires ranged from 65% to 83%. The response rates from the questionnaires which had been personally distributed varied from 45% to 99%.

The authors justified combining the data on the grounds that there were no systematic differences between the responses of patients who had received the questionnaires by the different means (Wallace et al, 1987).   However, the wide range in response rates from the practices where the questionnaires were given to patients personally, suggests that there may have been some differences in the subjects' motivation to participate. It is possible that this may also have influenced their responses to the intervention, a factor which was not considered in the analysis of outcome variables.

Patients who had reported drinking in excess of the recruitment limits during the previous week were assigned by random allocation to treatment and control groups.

Patients in the control group received no information from the GP relating to their drinking unless it was at his or her own request.

The intervention which the treatment group received consisted of an interview by their GP about the pattern and amount of alcohol consumption and evidence of alcohol-related problems and dependence. They were then shown how their level of drinking compared with that of the general public. Advice was given about the potentially harmful effects of their current level of drinking. They were given a copy of the booklet entitled, "That's the Limit : A Guide to Sensible Drinking", and a drinking diary. All patients in the treatment group were given an appointment to return one month later when the drinking diary was reviewed and feedback given on the results of blood tests which had indicated damage due to drinking. Subsequent appointments were given at the GPs' discretion.

All participating patients in both control and treatment groups were given advice about smoking, diet and exercise and received a health education booklet entitled "Beating Heart Disease".

Follow-up assessments were conducted by practice research nurses at six and twelve months. Efforts were made to prevent the nurses from knowing which patients had received the intervention. At the first follow-up the men in the treatment group reported a significantly greater reduction in alcohol consumption than those in the control group. This improvement was maintained at the one-year follow-up. The mean reduction in the women's reported consumption was greater in the treatment group than in the controls but this did not reach the level of statistical significance at the first follow-up. The difference was, however, significant at the one-year follow-up.

At the one year follow-up there was a reduction in the mean level of the men's GGT values which was significantly greater in the treatment group than in the control group. The largest change in alcohol consumption had occurred during the first six months of the study. It might therefore have been anticipated that the greatest reduction in GGT activity would have coincided with this fall in reported drinking but this was not the case. In the women there was no significant change in GGT from its initial value at either follow-up time.

There were no significant changes in asparate transaminase (AST) or erythrocyte mean cell volume (MCV) between the groups at either follow-up from the values obtained initially for men or for women.

This was a large study which demonstrated the effectiveness of a minimal intervention from patients' GP in achieving a reduction in alcohol consumption in heavy drinkers. A factor which, however, was not considered is the possible bias which was introduced by the two different methods of recruitment to the study initially.

Anderson and Scott (1992) conducted a similar study to that which Wallace et al had reported in 1988 on the effectiveness of general practitioners' advice to heavy drinkers.

The results showed that significantly more of the men in the treatment group had reduced their weekly alcohol intake to less than 22 units than the controls, although the treatment effect failed to reach statistical significance when the previous week's reported alcohol consumption was analysed at the one year follow-up. There were no significant changes in the laboratory tests for the men over the duration of the trial or between the treatment and control groups.

There was no evidence of a treatment effect or changes in the laboratory tests either over the duration of the trial or between the treatment and control groups for the women (Scott and Anderson, 1990).

2.2.3   General Hospital Studies

There have been few published accounts of studies which have been conducted to demonstrate the effectiveness of minimal intervention approaches for problem drinkers in general hospital wards. One such study was undertaken by Chick et al (1985). The subjects of this study were men whose ages ranged from 18 to 65 years and who were patients in medical wards of a general hospital. All were either in employment or had recently been employed, and were either married or had at least one close social relationship.

The inclusion criterion which related to alcohol consumption was the acquisition of at least two positive responses to the interview schedule which is shown in Appendix 1. Points could be accrued for a variety of reasons which included excessive levels of alcohol consumption or experience of any two alcohol-related problems during the previous two years. This method of recruitment raises the possibility that the detection rate of 22% may have included some patients who had resolved their problems within recent months and yet were identified on the grounds that they had

admitted to experience of alcohol-related problems within the time-frame in which the questions had been based.

Patients who satisfied the recruitment criteria were allocated either to a treatment or a control group. Treatment consisted of one counselling session which lasted for up to one hour, sometimes in the presence of the patient's spouse (Chick et al, 1983). They were also given a booklet containing information about the effects of alcohol on health and advice about how to reduce consumption. The patients in the control group received no verbal or written advice.

The treatment was defined as having been effective if patients reported no alcohol-related problems at follow-up one year later. Patients who had reported no such problems at entry or at follow-up were deemed to have improved if alcohol consumption had fallen by 50% or more. In all cases the biological markers or a relative's report were required to support the self-report data.

Results were presented of measures taken at intake and one-year follow-up. Differences in the outcome of "global categories" between the treatment and control group was assessed by the chi square test. The results of other statistical analyses were presented without mention of the test or tests used. It is therefore not known whether the analyses used were appropriate for the data.

Both groups of patients reported a statistically significant reduction in the previous week's mean alcohol consumption. Patients in both groups also reported a fall in mean problem scores. The difference at follow-up was significant in the group who had been counselled but it was noted that at entry to the study, the mean problem score of patients in the treatment group was significantly higher than that of the control group ($p = .014$). The authors attempted to overcome this by calculating the change in problem score as a percentage of its initial value. However, the fact that the treatment group contained a disproportionately high number of subjects with alcohol-related problems compared with the control group meant that there was less likelihood that the control group would have been able to reduce their problem scores to the same extent.

The mean MCV levels at follow-up were unchanged in both groups. GGT activity was shown to have fallen at follow-up to a statistically significant level only in the treatment group and, although this measure also fell in the controls, no statistical

comparison of the extent of the difference between the groups was reported. Instead, the GGT levels of individual patients were used to support the self-report data if the GGT had been above normal limits initially but had fallen by at least 20% at follow-up. Similarly, MCV levels which had been above 96 fl at intake and had fallen by at least 2 fl, were taken to endorse improvement.

When "global categories" of outcome were examined, the patients in the treatment group were considered to have definitely improved to a greater extent than the control group . 52% of the treatment group and 34% of the controls were regarded as having improved. Chi square analysis showed that a significantly higher proportion of patients in the treatment group had improved. However, it is not clear from the article exactly what constituted "global categories".

In excluding women, unemployed men and those who live alone or are over 65 years, the study failed to address the effectiveness of such interventions for a relatively large proportion of the general hospital patient population.

Reference was made to the fact that collateral evidence was used to support the patient's account of his drinking and the experience of alcohol-related problems. However, this was the case for only some of the participating patients. No mention was made of this potential source of bias in the results. Furthermore, the counselling session was conducted in the presence of the patient's spouse when possible (Chick et al, 1983). The authors did not indicate in how many cases this had occurred. This may have had a profound influence on both the responses of the patients and the relatives to the follow-up interview.

Elvy et al (1988) reported a study in which patients in surgical and orthopaedic wards of a New Zealand hospital were screened for alcohol problems prior to random allocation to a treatment or control group. The patients in the treatment group were seen by a psychologist and offered referral to an alcohol counsellor. Treatment consisted of confrontation by the psychologist with the patients' self-reported alcohol problems based on the interview data. They were told that their drinking was leading to inappropriate and unacceptable behaviours and that they would need help to overcome their difficulties. They were then asked if they would accept further assessment and possible treatment. Those who accepted referral were seen in the hospital by a counsellor from a treatment agency.

At the one-year follow-up assessment there was no significant difference between the groups in the amount of alcohol consumed. However, the group who had been referred reported significant improvements compared with the control group in the problem score, length of time since last drink, satisfaction with the level of consumption, problems at work, personal happiness, optimism about the future and happiness with sex life.

At 18 months, the control group also reported improvements and statistically significant differences between the referral and control groups persisted only in the variables which related to desire to drink less, satisfaction with the level of consumption and happiness with sex life. There were significant improvements for the referral group in the amount of money spent on drinking, sleeping patterns and in feeling content at the 18-month assessment which had not been evident at the 12-month follow-up. Results for GGT levels were available for 63% of the total sample at the initial assessment but comparisons with follow-up data were not reported because insufficient data were available. The lack of such corroborative data detracts from the validity of the study.

Only 62% of the patients in the treatment group accepted the offer of counselling. This may be because the confrontational style adopted by the psychologist appeared rather judgmental and authoritarian. It is possible that such an approach would be less appropriate for a nurse working in a different cultural situation, such as in the United Kingdom.

In a study whose design was similar to that of Kristenson et al (1983), Persson and Magnusson (1989) compared the number of registered days of sickness claimed by individuals who had been recruited to a minimal intervention study from out-patient departments of a Swedish general hospital.

2114 out-patients were invited to participate in the screening procedure. The recruitment criteria consisted of a raised GGT or a self-report of alcohol consumption in excess of the limits for entry to the study, which was more than 200g ethanol per week for males, or more than 150g ethanol per week for women. 78 patients fulfilled the criteria. At 3.7%, this detection rate is very low and may reflect insensitivity of the questionnaire which was used to ascertain the level of alcohol consumption.

They found that during the two years following intervention, the group who had received brief counselling on an out-patient basis about their drinking, reduced their number of sickness days while the control group had an increase in the number of sickness days. The Wilcoxon sum of ranks test was used to demonstrate that the difference was significant. The number of patients for whom data were analysed was 20 and 26 in the intervention and control groups respectively. No mention was made of reasons for the high attrition rate and it is possible that the number of sickness days of those who were excluded from the follow-up analysis could have significantly affected the results.

As in Kristenson et al's study, the assumption was made that the number of days for which sickness benefit was claimed was associated with alcohol consumption. However, the data and analysis conducted in this study did not justify such inference. As no follow-up information was available for the control group about levels of alcohol consumption and biological measures, comparisons of the relevant data were precluded.

A study reported by Keech (1992) was conducted to assess the effectiveness of counselling patients who attend the Accident and Emergency Department of Salisbury General Hospital with alcohol-related accidents. The brief interventions were administered by the nurses who normally work in the department and their advice was supplemented by written information which is given to patients in the form of a leaflet. Evaluation of the project has not yet been reported.

A large multi-centre study of brief interventions for alcohol problems was conducted by a team of researchers and was co-ordinated by the World Health Organization. The results were edited in a report by Babor and Grant (1992). Ten centres collaborated in the study in order to evaluate cross-national variation in outcome as a result of such interventions. The participating centres were in Australia, Bulgaria, Costa Rica, Kenya, Mexico, Norway, the Soviet Union, Wales in the United Kingdom, Zimbabwe and the United States of America.

1,655 subjects were recruited from a variety of settings which included general hospital wards, emergency departments, primary health care, health screening agencies, educational institutions and the workplace. Recruitment to the study was by means of a self-complete Health and Lifestyle questionnaire in which respondents were invited to state their usual levels of alcohol consumption. The specific area of

interest of the questionnaire was disguised by the inclusion of items which related to diet, smoking, exercise and stress.

Following recruitment to the study, subjects were assigned to one of three experimental groups prior to the administration of a 20 minute interview. The experimental groups consisted of a control group who received no treatment following the interview. The second group were given five minutes of "simple advice" about drinking and were given a leaflet which was entitled "Sensible Drinking". Members of this group were also informed of the follow-up interview. The third group ("brief counselling condition") were given more extensive advice in a 20 minute counselling session and were given a 30 page problem-solving manual about controlled drinking. At the end of the interaction the participants in all three groups were asked to complete a further questionnaire (the Health and Daily Living Questionnaire) and were informed that they would be re-interviewed six months later.

The professional background of the personnel who administered the screening instruments, treatments and follow-up procedures varied from centre to centre. The studies were therefore not parallel. However, the authors pointed out that the aim was to test the effectiveness and "generalizability" of brief interventions across different social and cultural setting and in a variety of health care venues.

Reductions in reported levels of alcohol consumption were seen in all groups with the exception of the "simple advice" groups in two of the ten centres and in the control groups in one centre. In the studies which were conducted in five of the centres, significant treatment effects were found. When the data from eight of the centres were pooled and analysed, statistically significant reductions in reported levels of consumption were found in both treatment and the control groups between entry to the study and follow-up. The control group reported significantly less change than the intervention group, but there were no differences between the groups who were given simple advice and brief counselling.

Blood samples were only available at follow-up in one centre. Details were not given but it was reported that the results indicated that significant reductions were found in GGT levels of both the intervention and control groups at follow-up.

Rowland and Maynard (1993) found that an alcohol education programme consisting of a tape-slide presentation supplemented by a Health Education Authority booklet

did not affect alcohol consumption or associated harm in a group of patients recruited from medical and orthopaedic wards of a district general hospital.

Bien at al (1993) reported a review of brief interventions for alcohol problems. Methodological problems, such as inadequate sample size, biasing sample selection and variation in forms of treatment, were considered and the studies were rated accordingly. The authors concluded that such treatments are as effective as more extensive forms of treatment and more effective than no treatment. However, the scores which were assigned to the studies were difficult to interpret as the details of the rating scales were scanty. Although the authors suggested that the methodological rigour of these studies compared favourably with studies of "larger treatment outcome", no data relating to the latter were given.

2.2.4 Discussion

In reviewing the literature on the effectiveness of brief treatments for alcohol problems, it became apparent that there are pitfalls in making direct comparisons of results because of the differences inherent in the studies.

Criteria for inclusion in studies, notably in relation to the level of alcohol consumption, varied from study to study with the result that the participants in the studies were by no means a homogeneous group. In addition, the standard unit of alcohol by which alcohol consumption is commonly calculated varies from country to country (Turner, 1990; Miller et al, 1991).

The differences in the settings in which the studies were carried out clearly have implications about the motivation of participating subjects. It is highly likely that subjects recruited as a result of their response to an advertisement, in which treatment for an alcohol problem was offered (Miller and Taylor, 1980; Heather et al, 1986; Sanchez-Craig et al, 1989) differ from those recruited while they were patients in hospital, such as in the studies of Chick et al (1985) and Elvy et al (1988). In replying to the advertisement, the media-recruited subjects recognised the existence of an alcohol problem. Prochaska and DiClemente (1984) described the stage of contemplation, when an individual is aware that a personal problem exists, as the precursor to the stage in which behaviour change can be achieved. It was possible, therefore, that those individuals who had volunteered for treatment, having recognised

the need for help, would respond more favourably than those who were recruited through opportunistic screening.

Despite this, improvements were also observed in studies of hospital and general practice patients who were recruited by other methods. These improvements, however, were not confined to those patients who had received the minimal interventions which were the subject of evaluations. Patients in the control groups also reported reductions in alcohol consumption and related problems (Chick et al, 1985; Wallace at al, 1988; Anderson and Scott, 1992; Babor and Grant, 1992; Rowland and Maynard, 1993).

Moreover, because the studies to which subjects were recruited by media advertisements failed to include control groups, the extent to which the volunteer nature of the recruits influenced outcome cannot be assessed. Caution should be exercised in concluding that the results which suggest significant effects for minimal intervention can necessarily be generalised to both the general population and to individuals who are seeking health care for a variety of reasons which may or not be alcohol-related.

The interventions which were evaluated also differed, both in content and also in the personnel who delivered the treatments. The Scandinavian studies employed a series of consultations with physicians and nurses who used the patients' GGT results to support their advice that the participants should cut down their drinking (Kristenson et al, 1983; Romelsjö et al, 1989; Persson and Magnusson, 1989). In the studies conducted by Chick et al (1985), Wallace et al (1988), Scott and Anderson, (1990), Anderson and Scott (1992), and Babor and Grant (1992) the treatment consisted of verbal advice or counselling which was supplemented by reading material. The verbal advice or counselling component of the intervention varied from a one-hour session with a specialist nurse (Chick et al, 1985) to a fifteen minute consultation with the patient's GP (Anderson and Scott, 1992) and either a five or fifteen minute session with a practice nurse (Hodgson, 1992).

The intervention described by Elvy et al (1988) was the offer by a psychologist of referral to a specialist counsellor from an alcohol treatment agency. Other studies compared the effectiveness of different forms of reading material (Heather, 1986; Heather et al, 1987). Heather et al (1990) and Sanchez Craig et al (1989, 1991) explored whether additional interpersonal contact was more effective than

bibliotherapy on its own. They concluded that treatment need not depend on highly specialised practitioners.

The methods used to collect data for the evaluation of brief interventions also differed from study to study. Methods of data collection included self completion questionnaires, interviews, data from collaterals, biological measures and statistical information pertaining to rates of sickness. Follow-up interviews were conducted in a variety of settings and by a variety of personnel. In the majority of studies conducted in general practice, the interviews were conducted in GP surgeries but in the study conducted by Heather et al (1987a), some patients were seen at the surgery, some at home and some were sent self-completion questionnaires. In another study where the intervention had been administered in hospital, the place of interview varied from hospital, to the patient's home or workplace (Elvy et al, 1988). In other studies, interviews were at some times conducted in private, or sometimes in the presence of a spouse (Chick et al, 1985; Heather et al, 1987). In a few studies the follow-up interviews were carried out by the same person as had given the treatment which was the subject of the evaluation. Such discrepancies diminish the quality of the follow-up data. Since the judgements which are made about the effectiveness of the interventions depend on the data collected at follow-up, it is essential that all possible precautions should be taken to ensure the reliability, quality and procedural rigour of measurement of crucial outcome measures.

Cultural norms and values in relation to alcohol use vary from country to country. This is likely to affect the views and expectations of the subjects of the studies and may be instrumental in influencing the results to a significant extent, particularly where self-report data is the sole source of outcome measure.

It appears that brief interventions may have a place in the repertoire of treatment modalities for problem drinkers. However, the issues described in this discussion preclude the adoption of such approaches without further investigation. In addition, no report has been published to date of an analysis of the relative effectiveness of personal advice, giving health education literature or a combination of both of these elements. There is therefore a need to investigate the effectiveness of these individual components of minimal intervention.

2.3 THE ROLE OF THE NURSE IN ASSESSMENT AND TREATMENT OF PROBLEM DRINKERS AMONG GENERAL HOSPITAL IN-PATIENTS

The role of the nurse is undergoing change as health promotion and the prevention of illness, disease and disability are increasingly being recognised as an important aspect of nurses' work. This has arisen in response to awareness of the importance of lifestyle factors to health.

While several authors have advocated a role for nurses in the management of alcohol problems among general hospital patients, there are few published accounts of studies which have been conducted to investigate this area of nurses' work.

Gwinner (1981) pointed out that nurses have an important part to play in the identification, prevention and treatment of problem drinking. He made the point that nurses should routinely ask patients about their alcohol consumption in the same way as they ask about diet and smoking. He also suggested that they should be prepared to offer advice about drinking. However, in order to achieve this he stated that they require basic information about drinking behaviour. According to Gwinner, this should include knowledge about health problems associated with drinking excessively and accepted sensible limits of alcohol consumption for men and women. In addition, they should be aware of local sources of specialist help for problem drinkers.

Reporting on a National Staff Committee for Nurses and Midwives on alcohol abuse, Slack (1982) endorsed Gwinner's view that nurses are well placed to detect problem drinking among patients. She suggested that opportunities for intervention may be missed because nurses may fail to recognise problem drinking in their patients and because they do not acknowledge that the treatment of alcohol problems is part of their remit. She also claimed that nurses lack appropriate training in basic and post-registration education programmes. In addition, she suggested that nurse managers ought to recognise the potential savings in resources which could be gained by effective interventions for this group of patients.

Close (1988) emphasised the importance of assessment skills to successful health education. According to Close one possible barrier to successful health education may be that its value as an intervention is not recognised and that it is not ascribed a high enough priority. She also suggested that nurses require knowledge of the subject

in question and that interpersonal communication skills are essential in order that the relevant knowledge is imparted and received by the patient in an appropriate form.

The promotion of health and the prevention of illness, disease and disability were recognised as being an integral part of the role of the nurse by the Chief Nursing Officer for Scotland in a mission statement about the purpose and philosophy of nursing, midwifery and health visiting in Scotland (Scottish Home and Health Department, 1990). Several other authors have acknowledged that health education and health promotion should be an integral part of the nurse's role (Storey, 1986; Close, 1987; MacLeod-Clark et al, 1987; Mitchell, 1988).

Cole (1990) underlined the view that nurses ought to assess their patients' patterns of alcohol consumption. When describing how to assess patients' drinking he makes the assumption that most nurses are aware of what constitutes a unit of alcohol. This has not, however, been demonstrated.

Kemm and Rowe (1992) described a study in which a cohort of first year student nurses and general hospital out-patients were asked to give the alcohol equivalence of a variety of different drinks. The results indicated that substantial gaps exist in knowledge of this subject. Subjects were also asked about low-risk consumption levels. Correct answers for men and women were given by only 30% and 27% of the sample respectively. It may be that qualified nurses also have difficulty in recognising potential problem drinking in their patients because of deficiencies in their knowledge to enable them calculate alcohol consumption accurately and to compare their patients' levels of consumption with those which are associated with hazardous drinking levels.

This was borne out by Romelsjö et al (1989), who suggested that the nurses who had screened patients for a minimal intervention study, had failed to detect heavy drinking in many cases where patients reported high levels of alcohol consumption. The authors attributed this to the nurses' lack of ability to convert the patients' reports of consumption of different beverages into standard units of alcohol.

As part of a study of early identification and treatment of problem drinkers, Rowland and Maynard (1989) recruited nurses to screen patients for early alcohol problems. The nurses were given training in the use of the screening instrument and were shown an alcohol education programme. After participating in the screening of patients, 28

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(76%) of the nurses agreed to complete an evaluation questionnaire. A further 18 nurses who had not been involved in the screening also completed questionnaires. The authors did not say whether these 18 nurses had received training or whether they constituted a control group. 53% of the nurses in their study reported routinely asking patients on admission to hospital about alcohol consumption compared with 96% who reported asking about diet. As the analysis reported did not discriminate between the nurses who had received the education programme and undertaken the screening and the 18 nurses who did not, an opportunity to evaluate the effects of training and experience was lost.

Long and Gelfand (1992) surveyed 950 practising nurses in New York State, U.S.A. to establish nurses knowledge of alcohol-related problems. Only 31.3% of the nurses responded to the survey, suggesting that the results may not have been representative of the nursing population. The content of the survey was largely concerned with testing nurses' knowledge of the disease concept of alcoholism. While the disease model of alcoholism may reflect the view of alcohol problems in the U.S.A., it may not be regarded as appropriate in the United Kingdom. Most of the nurses who had participated in the study reported positive attitudes to alcohol and problem drinkers but 50% gave inaccurate responses to questions which related to assessment. The author concluded that the basic nurse education curriculum should include a greater emphasis on alcoholism and that supervised clinical practice should focus on assessment skills and the identification of patients at risk patients for the disease of alcoholism. Since the frequencies of responses to many of the items were not reported, it is not possible to know what proportion of nurses provided accurate information and therefore whether the author's conclusions were justified.

2.3.1   Discussion

It appears that, while it has been advocated that nurses in the U.K should take an active role in both assessing patients' alcohol consumption and in giving appropriate health education, little is known about whether they possess the necessary skills to enable them to carry this out. This review of published work has exposed a gap in the literature concerning general hospital nurses' knowledge of alcohol problems and their practice in relation to the recognition of problem drinking and of giving advice to patients whose levels of alcohol consumption may be harmful to their health.

CHAPTER THREE

METHODOLOGICAL CONSIDERATIONS

3.1 INTRODUCTION

It was clear from the review of the literature that it was important to give careful consideration to the methods which could be used to identify problem drinkers, administer the interventions and collect follow-up data when designing the study of minimal interventions.

A method of collecting data was also required to permit analyses of general hospital nurses' assessment of patients' alcohol consumption, and factors which influence the advice which they give to problem drinkers.

It was necessary to address these issues before proceeding with the collection of data. This Chapter presents a brief outline of the designs of the studies and a detailed discussion of the methodological considerations which arise in studies of this nature.

3.2 STUDY DESIGNS

As discussed in Chapter One, the study described in this thesis consisted of two main investigations. One was designed to assess the relative effectiveness of three forms of minimal intervention for those general hospital in-patients whose level of alcohol consumption was above those recommended for sensible drinking by the Health Education Authority. The other part of the study involved an exploration of factors which influence the role of the nurse in the treatment of problem drinkers in general hospital wards.

3.2.1 Study of Minimal Intervention for Potential Problem Drinkers in General Hospital Wards

The study of minimal intervention for alcohol problems was conducted as a quasi-experimental longitudinal study. In the first stage, patients in the general medical, surgical, orthopaedic and short-stay wards of the Western Infirmary, Glasgow were invited to participate in the screening procedure. This consisted of a structured

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interview designed to identify potential problem drinkers among general hospital patients. Blood samples were taken for analysis of GGT, AST and MCV.

Those patients who fulfilled the inclusion criteria were invited to participate in the second stage of the project which involved the administration of the intervention.

On consenting to participate, they were allocated to one of the following four treatment groups:

> Group 1 were given a health education booklet which contains advice about the effects of alcohol and how to reduce consumption to within recommended safe limits.

> Group 2 were given individualised brief advice about the effects of alcohol consumption on health and about how to reduce consumption.

> Group 3 were given both a booklet and the advice.

> Group 4 were given no intervention.

The third stage involved the collection of follow-up data one year later. All patients who agreed to follow-up, were re-interviewed one year after the initial screening. The structured interview schedule which had been used for screening purposes was administered with the inclusion of some items about the participants' health over the previous year. Analyses of GGT, AST and MCV were repeated.

3.2.2 Exploratory Study of Factors which Influence the Role of the Nurse in the Treatment of Problem Drinkers in General Hospital Wards

This investigation was conducted as a descriptive survey of nurses who worked in general hospital wards. The method, design, results and analyses of the survey are reported in Chapter Eight.

3.3 METHODOLOGICAL ISSUES

3.3.1 Study of Minimal Intervention for Potential Problem Drinkers in General Hospital Wards

In considering the design of the minimal intervention study it became apparent that several methodological issues would need to be addressed. Firstly, it was necessary to devise a means of identifying patients for inclusion in the study; secondly, the study design required to be such that the interventions could be administered so that the introduction of bias was minimal; and thirdly, data were required of a type that would enable the effectiveness of the interventions to be measured.

3.3.1.1 Identification of Potential Problem Drinkers

Many screening instruments exist for the detection of problem drinkers. Most of these rely on various forms of self-report technique, including face-to-face personal interviews, interviews by computer and self-completion questionnaires. In addition, laboratory tests have also been used in the assessment of biological indicators of excessive alcohol consumption.

A requirement of the screening procedure for this study was that it should have the capacity to discriminate between drinkers whose current and recent patterns of consumption were potentially harmful from those individuals whose drinking was unlikely to have detrimental effects on their health. The screening procedure should be valid in that, as far as possible, it could provide an accurate measure of alcohol consumption and the prevalence of alcohol-related problems.

3.3.1.2 Interview schedule

The instrument which was considered to be most appropriate for the purpose of identifying early problem drinkers in general hospital wards was a structured interview schedule which was designed by Dr Jonathan Chick, Consultant Psychiatrist at the Royal Edinburgh Hospital. It was designed specifically for use in his study of minimal intervention for early problem drinkers in medical wards of a general hospital (Chick et al, 1985). It has also been used in studies of the prevalence of problem drinking in general hospital in-patients (Ryder et al, 1988; Watson et al, 1991; Rowland and Maynard, 1993). It has therefore been used to detect individuals who represent a very

similar clinical and cultural population, in the same kind of setting as was proposed for this study. A further point of similarity was that it was administered by a nurse in Chick et al's study. This was also the case in this study.

The structured interview schedule devised by Chick et al is shown in Appendix I. It contains thirty-seven items designed to elicit information concerning levels of alcohol consumption and related health, social and work problems. The first part of the schedule consists of items which relate to patterns of alcohol consumption and whether the patient's presenting medical condition is alcohol-related. The latter part consists of more detailed items about the occurrence of alcohol-related problems. Assessment of the level of alcohol consumption is made by the inclusion in the interview schedule of a retrospective diary of the previous week's alcohol consumption. It has been suggested that measurement of alcohol consumption in this way provides a reliable method of detecting individuals who consume a high level of alcohol (Millwood and McKay, 1978; Redman et al, 1987).

A further requirement of the screening instrument was that it should be acceptable to its users. It has been suggested that the way in which people respond to questioning may be a function of their interpretation of the situation in which the questions are set, as well as a means of expression which serves to protect their self-esteem (Davies, 1987). This has implications for the validity of the responses, and also for the subsequent interpersonal relationship between the respondents, who are patients, and the staff who ask the questions. Patients who are in hospital for reasons other than for treatment of alcohol-related problems may find questions about such problems irrelevant or unnecessarily intrusive. Such views may influence their responses with the result that the data collected may be biased.

To be ill and in hospital is a stressful event for many individuals (Franklin, 1974). It was therefore important, for ethical reasons, that the wording of items was sufficiently sensitive as to reduce the possibility of causing additional stress. It is possible that being asked to respond to some of the items of the interview schedule could give rise to additional stress to patients and also to the development of tension between the patient and the nurse who administered the interview. Elevated stress levels may increase the risk of the questions being misinterpreted. It was therefore important that the questions are clear and unambiguous. Furthermore, the wording of several of the items depends on the respondent's awareness of the presence of alcohol-related disease which may be asymptomatic; for example, one item asks "Have you ever had

any liver trouble?". Such factors may influence the reliability of individual items, and consequently of the instrument as a whole.

A disadvantage of the interview schedule designed by Chick et al (1985) is that it is too long to be readily incorporated into routine nursing assessment procedures. In order to demonstrate its reliability and to determine if it would be possible to reduce its overall length without compromising its internal consistency, a psychometric analysis of the interview schedule was undertaken. The results are presented in Chapter Four.

In order to evaluate the concurrent validity of the refined interview schedule, it was decided to compare its performance with the Alcohol Use Disorders Identification Test (AUDIT; Babor et al, 1989) which is a screening test devised for the World Health Organization. This test has undergone rigorous validation (Saunders and Aasland, 1987).

3.3.1.3   Laboratory tests

Laboratory tests have been used to demonstrate the presence of biological markers which are associated with heavy drinking. Levels of alcohol consumption have been shown to correlate with the concentration of certain liver enzymes in the blood. Changes in erythrocyte mean cell volume (MCV) are also associated with heavy drinking. Such tests have the advantage of objectivity but they are invasive and carry with them the potential to cause physical harm.

The evidence from the literature that biological markers can be used as reliable indicators of excessive alcohol consumption is equivocal. A reliable indicator should have good sensitivity and good specificity. A test's sensitivity is a measure of its capacity to detect high alcohol intake in heavy drinkers with a low percentage of false negatives; its specificity refers to its ability to differentiate heavy drinkers from low or moderate drinkers with a low percentage of false positives.

In a study of hospitalised alcoholic patients, the level of serum gamma-glutamyl transferase (GGT) was increased in 73% of cases (Rosalki and Rau, 1974). Similar rates of elevated GGT levels in men who were classified as heavy drinkers were reported by Kristenson et al (1980). Wu et al (1974) showed that MCV was raised in 90% of patients with a history of chronic alcoholism.

O'Farrell and Maisto (1987) reviewed studies of self-report and biological measures of alcohol consumption. In fourteen studies, the correlation between alcohol consumption and GGT levels ranged from -0.03 to 0.54. The range of correlation coefficients derived from results reviewed of seven different studies of the relationship between MCV and alcohol consumption was narrower (0.20 to 0.44), suggesting a greater degree of agreement between the findings.

Whitehead et al (1978) studied the relationship between alcohol intake and GGT, aspartate transaminase (AST), serum triglyceride and MCV in a cohort of men attending annual medical assessment as a condition of employment. They found that all biochemical and haematological tests showed a progressive rise with alcohol intake. Significant differences in results for GGT, AST and MCV were observed between heavy and light drinkers. Of the liver enzymes, GGT was considered to be the most sensitive indicator of alcohol consumption. The authors were not explicit, however, about the method used to measure alcohol consumption.

Bernadt et al (1982) compared the sensitivity and specificity of several laboratory tests to detect excessive drinking among psychiatric patients. Alcohol consumption was calculated in standard units and was assessed by means of an interview whose concurrent validity and inter-rater reliability had been demonstrated. The indicators which demonstrated the highest correlation with alcohol consumption were GGT and MCV. However, the correlation coefficients were only 0.23 and 0.25 respectively. GGT failed to detect 64% of those who reported drinking excessively and missclassified 13% of normal drinkers. Sensitivity of AST was not as good as for GGT but it was a more specific test. MCV was found to have wrongly classified as heavy drinkers only 1% of the sample. However, all excessive drinkers were missed.

Superior sensitivity of GGT was demonstrated by Chick et al (1981), in a sample of working men and by Lloyd et al (1982) in a study of the identification of problem drinkers among general hospital in-patients. Chick et al (1981), however, found MCV to have higher specificity than GGT.

Lockhart et al (1986) compared various tests, including GGT, AST and MCV, to screen patients for alcohol-related causes of admission to medical wards of a general hospital. They concluded that asking about recent drinking levels provided the most reliable information. MCV detected 43% of alcohol-related admissions. The corresponding rate for GGT was 55%. MCV missclassified only 4% of admissions

which were not alcohol-related. The superior sensitivity of GGT over MCV measurements was at the expense of its lower specificity of 77%. AST was elevated in 67% of alcohol-related admissions and was within normal limits for 73% of admissions which were not alcohol-related.

Rosalki et al's and Kristenson et al's work suggests that elevated GGT levels may be a useful tool in detecting heavy drinkers. It seems likely, however, that it is not sufficiently sensitive to identify moderate drinkers whose level of alcohol consumption places them at risk of developing alcohol-related health problems but in whom physiological changes have not yet occurred.

An association between these markers and alcohol intake clearly exists. However, the debate concerning their value as quantitative indicators of early problem drinking has not been resolved. A test which is less than 100% specific in detecting excessive alcohol consumption means that individuals who are not heavy drinkers will be identified as being so. It is possible that the consequences of such misclassification may, for these people, outweigh the potential benefit derived by those who are correctly detected. It could be argued, therefore, rather than being used as case-finding tools, these screening tests should only be used as indicators to alert health care professionals to the possibility that the individual's alcohol consumption may be excessive and that further investigation should be carried out.

It has also been suggested that, instead of using them as screening tests, results of laboratory tests should be used as outcome measures to evaluate the effectiveness of treatment (Anderson et al, 1988).

Other biochemical tests which have been used as markers of alcohol consumption include the ratio of alpha amino-n-butyric acid to leucine and acetaldehyde-haemoglobin adducts but these have been shown to be unreliable (Shaw and Lieber, 1982; Chick et al, 1982; Homaiden et al, 1983). These tests have the further disadvantage of not being routinely undertaken for clinical reasons. They are also more costly than GGT, AST and MCV which are investigated routinely for the majority of hospital in-patients.

It was decided that, as part of the study described in this thesis, GGT, AST and MCV levels should be recorded to provide data with which to further investigate the association between them and self-report data of alcohol consumption. In addition,

levels of GGT, AST and MCV will be measured before administration of the intervention and also one year later to provide comparison data.

3.3.1.4 Administration of the Intervention

Following recruitment to the study, patients were to be assigned to one of four treatment groups. If allocation to the groups were random it would be possible for patients occupying adjacent beds to be assigned to different treatment groups. As a consequence, it would be possible for contamination across groups to occur because of patients in different groups discussing their treatments. It was therefore decided to conduct each treatment in one type of ward for a finite period of time, after which the groups were rotated such that each treatment was conducted in each type of ward for the same length of time. This process is illustrated diagrammatically in Chapter Seven, in which the study design is described in detail.

3.3.1.5 Collection of Follow-up Data

The third stage involved the collection of follow-up data. The screening interviews and the administration of the interventions were conducted by the author of this thesis. It is possible that, if the follow-up interviews were also conducted by the same researcher, the subjects might respond to questions in ways they believed would please the interviewer. This was recognised as a potential source of bias which might be reduced if the interviewer who conducted the follow-up interviews was not known to the patient.

An additional concern was the fact that bias might also be introduced if the interviewer were aware of the treatment which the interviewee had received. Bias could occur either because the interviewer could prompt the interviewee to respond in certain ways, or as a result of the interviewer misinterpreting the interviewee's responses in a direction which would favour the outcome for the interviewers' preferred form of treatment. This could occur either deliberately or unintentionally. Having acknowledged this potential problem it was decided that an independent research assistant who was blind to the study design should be appointed to conduct the follow-up interviews.

However, it is known that individuals respond differently to different interviewers (Davies and Baker, 1987). It was therefore necessary to design a study which would

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demonstrate the level of reliability of the interview schedule when administered by the interviewer who had conducted the initial interviews and also when administered by the follow-up interviewer. Details of this reliability study are reported in Chapter Five.

3.3.2 Exploratory Study of Factors which Influence the Role of the Nurse in the Treatment of Problem Drinkers in General Hospital Wards

As stated in Chapters One and Two, it has been acknowledged in the literature that nurses have a role in the identification, prevention and treatment of problem drinking. The purpose of this study was to ascertain whether such a role has been adopted by practising nurses, and to identify some of the factors which could influence their effectiveness in this area of their work.

It was therefore decided to investigate whether nurses routinely assess patients' alcohol consumption, and whether their knowledge of standard units of alcohol is adequate to enable them to calculate levels of consumption accurately.

A further area of interest was whether nurses give advice to patients whose level of consumption they regard as being excessive, and whether they perceive this to be a legitimate part of their role. In order to be able to offer advice about health risks associated with drinking, nurses require knowledge about alcohol-related health problems, and also of the levels of consumption with which increased risks of harm are associated. It was therefore important to ascertain whether nurses possess this knowledge. Because of the implications for nurse training, it was also considered important to investigate the sources of the nurses' knowledge of these factors.

It was decided that a postal survey of nurses who worked in general hospital wards in Glasgow could provide a quick, economic and systematic means of collecting the data. An additional advantage of postal surveys is that they have the potential to reduce biased responses by offering anonymity and confidentiality (Shelley, 1984). A questionnaire was drawn up for distribution to clinical, ward-based nurses working in general hospitals.

It was necessary to select a stratified sample because nurses who work with patients in general hospitals can be employed in one of four posts (i.e., clinical nurse specialist, charge nurse, staff nurse and enrolled nurse).

In order to define a sample which would be representative of each post held by ward-based nurses, information regarding the number and posts of nurses employed in each of these hospitals was sought from the Personnel Department of Greater Glasgow Health Board (GGHB).

At the time a total of 3519 nurses were employed at ward level at the six hospital sites. Of these, 302 nurses worked in intensive care units and 410 worked in operating theatres and recovery room areas. They were excluded from the survey because it is inappropriate for nurses in these areas to advise patients about their drinking habits. 166 and 54 nurses were employed in obstetric and paediatric units respectively within general hospitals. They were excluded on the grounds that they were not involved in general nursing. The total number of nurses excluded from the survey was 928. The population therefore comprised 2595 ward-based general hospital nurses.

It was decided to send a questionnaire to every tenth nurse of each designation on the duty rosters at each of the six hospitals. Permission for access to duty rosters was sought from the Senior Nurses of each of the six general hospitals in the Greater Glasgow area so that the questionnaires could be distributed accordingly.

3.4   CONCLUSIONS

In light of the methodological considerations it was decided that the project should be investigated by means of a series of studies designed to address the issues raised in this Chapter.

These studies are:

(1)   A psychometric analysis of the properties of the interview schedule which was devised by Chick et al (1985) to detect problem drinkers in a general hospital in-patient population.

(2)   A study of the reliability of the interview schedule when used by two different interviewers.

(3)   A study of the identification of potential problem drinkers among general hospital patients using self-report and biological data.

(4)   An evaluation of the effectiveness of three forms of minimal intervention for potential problem drinkers.

(5)   An investigation of factors which influence the role of nurses in the treatment of potential problem drinkers in general hospital wards.

CHAPTER FOUR

PSYCHOMETRIC ANALYSIS OF THE SCREENING INTERVIEW

4.1   INTRODUCTION

This chapter describes the psychometric analysis of the interview schedule which was designed by Chick et al (1985) to detect early problem drinkers among general hospital patients for their study of minimal intervention. The objective of the analysis was to confirm the reliability (internal consistency) of the interview schedule for use as a screening instrument in the study which is discussed in Chapter Six. A further purpose of the analysis was to determine whether the overall length of the schedule could be reduced without diminishing its performance. The analysis consisted of carrying out cluster and factor analyses of the data derived from schedule, and then estimating the alpha-coefficients of each cluster or factor as described by McKennell (1970) and Nunnally (1978).

Cluster analysis was undertaken to identify the main dimensions of the interview schedule and the factor analysis was carried out to confirm the cluster analysis. The aim of the procedure was to produce subsets of items where the correlation of items within each subset was high, but the correlation between the subsets was low.

Alpha-coefficient is an index of reliability described by Cronbach (1951) and gives an indication of the internal consistency of the instrument. It is an expression of the degree to which the items of a subset of an instrument measure the same dimension. The alpha co-efficient can also be used to evaluate the reliability of the remaining items if the subset is shortened (McKennell, 1970), and is thus an aid in making decisions about test length. In this situation the alpha co-efficient of the subset is calculated; then the item which has the lowest average correlation with the other items of the group is discarded prior to computing the formula for the estimation of alpha for the remaining items. Subsequent items can be discarded in the same way with alpha co-efficients being calculated for the diminishing number of items in the subset. This procedure is described by McKennell (1970). Adopting this method allows decisions to be made about whether to retain or omit items from the instrument on the grounds of their contribution to the reliability of the instrument as demonstrated by the values for alpha, consistent with the need to keep test length to a minimum.

4.2   METHOD

4.2.1   Sample

An opportunity sample of 160 individuals was invited to participate. 20 employees of a local distillery were also invited; and in order to ensure that the sample included some subjects who had recently experienced alcohol-related problems, 20 patients who were attending the alcohol treatment unit of a psychiatric hospital were invited to participate, giving a total sample of 200 subjects.

4.2.2   The Interview Schedule

The structured interview was schedule designed by Chick et al (1985) and is shown in Appendix 1.

For the purposes of this study it was necessary to adapt it to a self-complete format so that the subjects could be surveyed quickly. This involved including instructions about selecting and encircling appropriate responses to the questions.

Items 2 and 3 of Chick et al's original interview were designed to identify patients who fulfilled exclusion criteria for their study and to provide survey data on hospital in-patients. These items were therefore omitted from the questionnaire. The reference to hospital admission was omitted from Item 4.

Item 9 was omitted because data on the subjects' weight would be meaningless in the absence of other information such as height and calorie intake from dietary sources. The item about whether the subject's present illness was alcohol related was also omitted as the majority of subjects in this instance were likely to be well.

Item 25 was excluded because of the possibility that this question could be misinterpreted in the absence of an interviewer to clarification if necessary.

Respondents were asked to indicate their sex but other sociodemographic data were not sought as the purpose of the study was to establish the reliability of items relating to the frequency and level of alcohol consumption and the occurrence of alcohol-related physical and social problems. For the same reason the item relating to

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information about respondents' relatives who had alcohol-related problems was also omitted.

Chick et al's schedule asked about experiences associated with drinking during the past two years. It was decided that the time-frame for the responses should be reduced to one year because the instrument was intended to identify individuals with recent or current experience of alcohol-related problems.

The wording of Items 6 and 7 was changed to facilitate self-completion of the questionnaire. The alternative phrasing is given in Items 5 and 6 of the revised schedule which was used in this analysis (Appendix 3). The wording of Item 32 was altered in order to overcome ambiguity.

Items 15 and 18 of Chick et al's schedule included the prefixes, "Have you been off work / had any trouble at work because .... ". In order to enable individuals who are not in paid employment, the wording of this item in the revised instrument was changed to read "Have you been unable to carry out your normal daily routine / life because ....." (Items 9 and 12 of the revised questionnaire) .

The end result was a questionnaire which contained 29 items and a retrospective drinking diary for the previous week's alcohol consumption, providing 35 variables in all. The questionnaire was administered to a pre-test group with information which explained that the study was being undertaken to investigate the relationship between alcohol consumption and health. Instructions about how to complete the questionnaire were also given. An assurance concerning its anonymity was given. A stamped addressed envelope in which the questionnaire could be returned was enclosed. Minor changes were made to the wording of the instructions and the layout of the questionnaire as a result of the pre-test. The instructions and revised questionnaire are shown in Appendices 2 and 3.

4.2.3 Procedure

Using the Statistical Package for the Social Sciences (SPSSX) a Pearson correlation matrix was produced. Correlations ranged from ±0.01 to 0.99 (Appendix 4). A cluster analysis was then derived using the McQuitty Elementary Linkage Analysis (McQuitty, 1957). This technique produces clusters quickly from the correlation matrix, assigning each variable to a cluster on the basis of its highest single

correlation. Those items whose inter-correlations were less than 0.30 were omitted from the cluster analysis in accordance with the Kaiser criterion. Since the analysis produced clusters which were interpretable a principal components factor analysis, which is more robust than the cluster analysis, was carried out on SPSSX. The minimum significant loading was again set at 0.30. A listing of 8 factors with eigenvalues over 1.0 was derived. The factors were rotated by varimax. When an item loaded on more than one factor it was retained only in the factor where it loaded highest.

Alpha co-efficients were computed for each factor and for the remaining subsets after items were successively discarded according to the method described by McKennell (1970).

4.2.4   Results

159 (79.5%) completed questionnaires were returned.

An eight factor solution was derived which accounted for 72.4% of the total variance. The structure of the factors when rotated by varimax and their loadings are shown in Table 4.1.

The values for the alpha co-efficients after discarding successive items are shown for each factor in Table 4.2.

TABLE 4.1

Factor Analysis of the Questionnaire

Items(abbreviated wording)		Loading
FACTOR 1		
29.	Involvement with the police	.849
16.	Morning drinking	.843
22.	Warning at work	.830
28.	Deprives family by spending money on alcohol	.716
15.	Severity of tremor	.694

13b	Severity of restlessness	.671
20.	Asked to leave a bar,club or party	.652
13a	Restlessness	.634
26.	Money worries	.615
14.	Tremor	.609
9.	Heartburn	.538
18.	Difficulty in cutting down	.524

Factor 1 accounted for 52.7% of the common variance
(38.2% of the total variance).

FACTOR 2

24b	Spouse has threatened to leave/left home	.881
24a	Has threatened to leave/left home	.861
21b	Sticks to limits	.840
23.	Domestic arguments	.670
12.	Hangovers	.655
10.	Liver problems	.545
2.	Consumed alcohol in previous week	.303

Factor 2 accounted for 11.8% of the common variance
(8.6% of the total variance)

FACTOR 3

17.	Difficulty in stopping getting drunk	.768
19.	Hallucinations	.764
21a	Sets limits	.705
25.	Family violence	.626

Factor 3 accounted for 8.7% of the common variance.
(6.3% of the total variance)

FACTOR 4

27.	Debt	.799
11.	Accident	.560

Factor 4 accounted for 7.2% of the common variance.
(5.2% of the total variance)

FACTOR 5

4a	Previous week's alcohol consumption	.949
4b	Maximum consumed on 1 day in previous wk	.936
5.	Maximum consumed on 1 occasion in last yr	.482

Factor 5 accounted for 5.5% of the common variance.
(4.0% of the total variance)

FACTOR 6

6.	No. of occasions max. amount was consumed	.669
3.	Frequency of drinking experiences	.657
4c	No. drinking days in previous week	.642

Factor 6 accounted for 5.0% of the common variance.
(3.6% of the total variance)

FACTOR 7

8.	Ulcer	.638
7.	Weight problem	.599
	Sex	-.425

Factor 7 accounted for 4.7% of the common variance.
(3.4% of the total variance)

FACTOR 8

1.   Has drunk alcohol   .841

Factor 8 accounted for 4.4% of the common variance.

(3.2% of the total variance)

The above eight factor solution accounted for 72.4% of the total variance.

TABLE 4.2

Factors And Alpha Co-Efficients Of Subsets Of Items

		Number of items in the subset	Alpha-coefficient
FACTOR 1			
18.	Difficulty in cutting down	12	.95
9.	Heartburn	11	.95
29.	Involvement with the police	10	.95
14.	Tremor	9	.96
20.	Has been asked to leave a bar or club	8	.96
22.	Warning at work	7	.96
26.	Money worries	6	.96
13a	Restlessness	4	.95
15.	Severity of tremor	5	.93
28.	Deprives family by spending money on alcohol	3	.92
16.	Morning drinking	2	.89
13b	Severity of restlessness	1	-
FACTOR 2			
2.	Consumed alcohol during previous week	7	.89
10.	Liver problems	6	.93
12.	Hangovers	5	.94
23.	Domestic arguments	4	.95
24b	Spouse has threatened to leave/left home	3	.96
24a	Has threatened to leave/left home	2	.94
21b	Sticks to limits	1	-

FACTOR 3

25.	Family violence	4	.71
19.	Hallucinations	3	.67
17.	Difficulty in stopping getting drunk	2	.60
21a	Sets limits	1	-

FACTOR 4

27.	Debt	2	.63
11.	Accident	1	-

FACTOR 5

5.	Maximum consumed on 1 occasion in last yr	3	.81
4b	Maximum consumed on 1 day in previous wk	2	.99
4a	Previous week's alcohol consumption	1	-

FACTOR 6

6.	No. of occasions max. amount was consumed	3	.71
4c	No. drinking days in previous week	2	.82
3.	Frequency of drinking experiences	1	-

FACTOR 7

	Sex	3	.48
8.	Ulcer	2	.62
7.	Weight problem	1	-

FACTOR 8

1.	Has drunk alcohol during last year	1	-

4.3   DISCUSSION

Decisions were taken on whether to retain or discard items from the instrument for either statistical or substantive reasons.   Statistical justification was related to the value of alpha co-efficient which had been computed for the sub-sets of items, whereas substantive reasons were based on the comments of the respondents who returned the questionnaire and consideration of individual items.

4.3.1   Factor 1

The alpha co-efficients for each factor are given in Table 4.2. The alpha co-efficient was .96 for the subset of Items 26, 13a, 15, 28, 16 and 13b. This suggests that Items

18, 9, 29, 14, 20 and 22 do not contribute to the internal consistency of the factor and can be omitted without cost to its reliability. Item 15 relates to the severity with which tremor is experienced and is one of those items which is to be retained for statistical reasons. Item 14, to which a positive response indicates the frequency with which the subject has experienced tremor within the past year, should therefore also be retained because of its association with Item 15.

In Item 28 the individual is asked if money has been spent on alcohol which should have been spent on the family or on other things. It can be argued that if any money were spent on alcohol then it could have been spent on other things. A positive response to this item is therefore strongly dependent on the individual's interpretation of the question and, in particular, the word "should". It was therefore decided to omit Item 28. The area of financial problems associated with drinking is addressed by the retention of Item 26.

4.3.2   Factor 2

Because the alpha co-efficient for Items 24b, 24a and 21b was higher at a value of .96 than for any other subset, these items were retained. Item 2 was retained on substantive grounds because responses to this item constitute one of the principal outcome measures of the main study. Item 23 was retained because of its association with Items 24a and 24b. Items 10 and 22 were therefore the only items to be omitted from subsequent uses of the instrument.

4.3.3   Factor 3

The alpha co-efficient for this group of items is well below that of Factors 1 and 2. Moreover, the factor explains only 6.3% of the total variance. Since they clearly do not contribute to the overall reliability of the scale Items 25, 19 and 17 were discarded. Item 21a was retained because of its association with Item 21b which was discussed in the previous paragraph.

4.3.4   Factor 4

The alpha co-efficient for the group of items is significantly lower than that of Factors 1 and 2 and explain only 5.2% of the total variance. Item 27 was discarded on statistical grounds. Item 11 was retained because of the high rate of patients who are

reported as having received treatment for alcohol-related accidents in hospital casualty departments, the short-stay ward of the casualty department being one of the areas where the main study was conducted.

4.3.5   Factor 5

Item 5 was discarded because the alpha co-efficient of the remaining two items of the subset indicates that a higher degree of reliability is achieved when measuring the underlying dimension if Item 5 is omitted.

4.3.6   Factor 6

Item 6 was discarded for the same reason as for Item 5 in Factor 5. Moreover, it could be discarded on substantive grounds because this item cannot stand on its own without Item 5.

4.3.7   Factor 7

There were no statistical reasons for retaining any of the items of this factor. However it was necessary to identify the gender of the participants in the main study because the Health Education Authority literature which was used as a treatment suggests different weekly limits of alcohol consumption for men and women. The Item "sex" was therefore retained. Because gastric problems are known to be frequently associated with early problem drinking (Holt et al, 1981) Item 8 was retained.

4.3.8   Factor 8

This item was retained because only those subjects who responded positively were invited to participate in the main study.

4.4   CONCLUSIONS

As a result of the analysis and the substantive reasons for retaining or discarding items the length of the interview schedule was reduced by 16 items. This has the merits of being considerably more economic in terms of interview time and reduces the possibility of bias due to fatigue.

The shortened interview resultant schedule is shown in Appendix 5. A system for scoring the schedule is given in Appendix 6.

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CHAPTER FIVE

A STUDY OF THE INTER-RATER RELIABILITY OF THE INTERVIEW SCHEDULE

5.1 INTRODUCTION

The study which will be described in Chapter Seven was undertaken to evaluate the relative effectiveness of three forms of minimal intervention as treatment for alcohol problems. The study involved the comparison of pre- and post-test data which were derived from the subjects' responses to an interview schedule and from biological laboratory data.

The initial interviews were conducted by the author as described in Section 6.2.1 of Chapter Six. The author also administered the interventions which were the subject of the evaluation described in Chapter Seven. In order to prevent the possibility of the occurrence of interviewer bias as discussed in Section 3.3.2.4 of Chapter Three, it was necessary for a different person to carry out the follow-up interviews. A research assistant was appointed for this purpose and was trained in the use of the schedule to enable her to conduct the follow-up interviews. Following the training period, a study was conducted to assess the inter-rater reliability of the interview schedule when administered by both the author and the follow-up interviewer. The training which the follow-up interviewer received and the study of the inter-rater reliability of the interview schedule are the subjects of this Chapter.

5.1.1 The Research Assistant

A grant was awarded by the Research Support Group of the Greater Glasgow Health Board for the appointment of a part-time research assistant to conduct the follow-up interviews.

The assistant who was appointed held the same professional clinical qualifications as the author. In addition, she held a Diploma in Community Psychiatric Nursing. As one of the Diploma subjects was Research Appreciation, this qualification was considered to be an advantage. Moreover, her experience of treating clients in their own homes was a further asset since the follow-up interviews were conducted in

patients' homes. This experience was not, however, in the specialist field of alcohol problems.

5.1.2 Training

The research assistant was informed of the purpose of the research project. The importance of the interviews, in providing the data which would enable an evaluation to be made of the effectiveness of the three different forms of intervention, was emphasised.

Administration of the interview schedule was rehearsed. Consistency and objectivity were stressed as being vital to the scientific value of the project, as was the necessity for strict adherence to the protocol.

5.2 STUDY DESIGN

It was necessary to conduct this study in conditions which were as similar as possible to those under which the initial interviews had been carried out. Since the subjects of these initial interviews were patients in hospital, it was decided that the interviews which would provide data for the measurement of the inter-rater reliability of the interview schedule should also be administered to a sample of general hospital in-patients.

A study was designed in which the interview schedule was administered by each interviewer to the same subjects with an interval of seven days between interviews. In the ideal study design, the interval between interviews should be long enough for the subjects to forget the specific responses which they gave to the first interviewer, and enable them to respond to the second as if they were being interviewed for the first time. Because the average length of hospital stay for in-patients in the general medical, surgical and orthopaedic wards was less than one week, it was not possible to recruit a subject pool with an inter-test period of more than seven days. It was felt that an interval of seven days was adequate for the purpose of the study.

A sample of 40 patients agreed to be interviewed. Patients were interviewed in the medical, surgical and orthopaedic wards of the Western Infirmary, Glasgow. Patients in the short-stay ward were not approached as their hospital stay was confined to a maximum of 48 hours.

Approval was granted by the West Ethical Committee of Greater Glasgow Health Board. All participating patients were asked for informed consent in writing. Copies of the letter from the Secretary of the Ethical Committee and the consent form which was used are shown in Appendices 7 and 8 respectively.

The patients were informed that the purpose of the study was to evaluate the training of an interviewer to enable her to work on a study which was being conducted with another group of patients. They were informed that their participation would involve answering 12 questions concerning their consumption of alcohol and their health and that the interview would be repeated one week later by a second interviewer. They were assured that both interviewers were trained nurses but no indication was given as to which of the interviewers was being assessed. Patients were also assured that all information would be treated in strict confidence.

The study was conducted during November 1991. Each interviewer interviewed 20 different patients. One week later they interviewed those patients previously interviewed by the other. The reason for this design was to control for the possibility of bias being introduced by the order in which the patients were exposed to the interviewers.

Both interviewers wore identical nurses' uniforms while conducting the interviews so as to reduce the possibility that the interviewees' responses might be affected by the interviewers' outward appearance.

The interview schedule is shown in Appendix 5. Most items refer to the frequency with which alcohol-related problems were experienced during the previous year. One further important variable was the quantitative measure of alcohol consumption. This was calculated from a self-reported retrospective drinking diary for the week prior to admission to hospital.

5.3   STATISTICAL ANALYSIS

The data were analysed using the Statistical Package for the Social Sciences (SPSSX) using the main-frame computing facilities of the University of Strathclyde. Conditions of the Data Protection Act were observed.

Pearson's product moment correlation co-efficients were computed to assess the degree of association between the patients' reports to each interviewer of the amount of alcohol consumed during the week prior to admission to hospital. However, the extent to which two variables differ from each other cannot be measured by tests of correlation. Two-way analysis of variance was therefore applied to the data to establish whether statistically significant differences existed between the mean values which patients reported to each interviewer as their level of alcohol consumption during the week prior to admission to hospital, and also whether statistically significant differences existed between the mean values for this variable between the first and second interviews. Three effects were analysed. These were; firstly, the interviewer effect; secondly, the effect of the order in which the patients were interviewed by the two interviewers; and thirdly, the interaction which, because of the design, represents the sequence effect for each interviewer, i.e. whether the order effect is the same for each interviewer. Because of the cross-over design, the interviewer and order effects are within-subjects effects, and the between-subjects effect is the interaction or sequence effect.

Two-way analysis of variance was also applied to the patients' interview scores for alcohol-related problems which were computed from their responses to each of the items of the interview schedules.

Data derived from Items 14, 15a and 15b of the interview schedule, which related to domestic arguments, were not analysed because they were found not to be adequate. Response options for these three items included the opportunity for subjects to respond in one of three ways. For example, Item 14 posed the question, "Have there been arguments at home (or where you live) in the past year which have been caused by your drinking?" Possible responses to this item were, "Yes", " No" or "N.A.". The "N.A." option was intended for those who lived on their own so that they could give a "Not Applicable" response.

However, the research assistant had assigned a "No" response to this item in those cases where the response should have been "N. A." because the interviewee lived alone, as well as when a "No" response was appropriate for those respondents who had not been involved in arguments at home caused by alcohol during the past year. For the same reason, she had assigned "No" responses instead of "N.A." responses to Items 15a and 15b which related to the respondent or his or her spouse leaving home because of domestic arguments caused by alcohol.

It was therefore decided to conduct further training and to re-evaluate the inter-rater reliability of these items in a separate study.

5.4   RESULTS

The Pearson's product moment correlation co-efficient for the patients' alcohol consumption according to the retrospective drinking diary was high ($r = .95$; $p < .0001$).

The mean values for the patients' reported levels of alcohol consumption for the week prior to admission to hospital and the statistical analysis which was carried out are shown in Tables 5.1 and 5.2. The patients in Group 1 were the twenty subjects who were seen first by Interviewer A. Those in Group 2 were interviewed by Interviewer B first.

TABLE 5.1

Mean Values For Level Of Alcohol Consumption
Mean Alcohol Consumption (Units)

	Interviewer A	S.D.	Interviewer B	S.D.
Group 1	16.80 (1st interview)	19.18	15.40 (2nd interview)	21.75
Group 2	10.08 (1st interview)	8.28	10.15 (2nd interview)	8.92

TABLE 5.2

Manova Results For Responses To Both Interviewers

	Sum of squares	Degrees of Freedom	Mean of Squares	F-ratio	Significance
Within-subjects effects:					
Within cells	555.68	38	14.62		
Order effect:	21.01	1	21.01	1.44	.238
Interviewer effect:	2.81	1	2.81	.19	.663
Between-subjects effects:					
Within cells	18240.07	38	480.00		
Interaction between sequence and interviewer:	632.81	1	632.81	1.32	.258

Responses to the remaining items of the interview schedule have a limited number of possible categories. There were no differences in the responses of patients to both interviewers to the item which related to the experience of gastric problems. Cross-tabulations of the responses to both interviewers for all other items are given in Tables 5.3 to 5.9.

TABLE 5.3
Cross-Tabulations Of Responses To Item 8 (Accidents)

Interviewer A

		NO	YES
Interviewer B	NO	39	1
	YES	-	-

There were 39 agreements and 1 difference.

TABLE 5.4

Cross-Tabulations Of Responses To Item 9 (Sticks to Limits)

Interviewer A

		0	2	3
Interviewer B	0	36	2	-
	2	-	1	1

There were 37 agreements and 3 differences.

TABLE 5.5

Cross-Tabulations Of Responses To Item 10 (Warning at Work)

Interviewer A

		0	1	4
Interviewer B	0	37	1	1
	2	1	-	-

There were 37 agreements and 3 differences.

TABLE 5.6

Cross-Tabulations Of Responses To Item 11 (Feelings of Restlessness)

Interviewer A

		0	1	4
Interviewer B	0	37	1	1
	3	-	-	1

There were 37 agreements and 3 differences.

TABLE 5.7

Cross-Tabulations Of Responses To Item 12 (Tremor)

Interviewer A

		0	2.4	4
Interviewer B	0	38	-	-
	2.4	-	1	1

There were 39 agreements and 1 difference.

TABLE 5.8

Cross-Tabulations Of Responses To Item 13 (Morning Drinking)

Interviewer A

		0	3	4
Interviewer B	0	38	-	1
	3	-	1	-

There were 39 agreements and 1 difference.

TABLE 5.9

Cross-Tabulations Of Responses To Item 16 (Money Worries)

Interviewer A

		NO	YES
Interviewer B	NO	38	1
	YES	1	-

There were 38 agreements and 2 differences.

Since a high level of agreement between interviewers was found, further analysis of the data was not considered to be necessary.

5.5   DISCUSSION

The correlation co-efficient of .95 for the patients' reported levels of alcohol consumption demonstrated that the responses of patients to each interviewer when asked to recount the amount of alcohol which they had consumed during the previous week were highly associated. The results of the two-way analysis of variance for this variable showed that there was no statistically significant difference between the means of the levels reported to each interviewer. Neither was there a statistically significant difference between the means of the levels of consumption reported by patients at the first and second interviews. In addition, no interaction between interviewer and order was found. This indicates that there was neither an interviewer effect nor an effect for the order in which the interviews had been conducted.

A high level of agreement was found between the subjects' responses to all remaining items of the interview schedule which were analysed, indicating a high degree of inter-rater reliability. However, it is noted that the low variability in the data may, in part, account for the congruity.

5.6   EVALUATION OF ITEMS 14, 15A AND 15B

Because of the differences in the way the interviewers had coded the responses of the patients to Items 14, 15a and 15b, it was decided to conduct a further experiment to re-assess the performance of the interview schedule when administered by the two interviewers. For reasons of economy of time, it was decided to test the schedule with a group of student nurses. Permission was granted by the Director of Nurse Education for the West College of Nursing, Glasgow for the study to be conducted using a class of 30 student nurses as the interviewee sample.

The students were informed that the study was being conducted as part of the process of refining the interview schedule for use in a clinical situation and that their participation would be appreciated. They were informed that their participation was voluntary and that they were under no obligation to take part. In order to protect the students' anonymity, first names and surname initials only were used. 29 students agreed to participate.

As had been the case with the sample of hospital in-patients, one half of the class of students was interviewed by each interviewer. One week later they were interviewed by the interviewer who had not interviewed them on the previous occasion.

5.6.1 Results

The results of the responses of the 29 students to the items which related to domestic arguments are given in Table 5.10.

TABLE 5.10
Cross-Tabulations Of Responses To Item 14 (Domestic Arguments)

Interviewer A

Interviewer B	0	1	2	Not Applicable
0	22	1	-	-
1	1	2	-	-
2	-	-	1	-
Not Applicable	-	-	-	2

There were 27 agreements and 2 differences.

Two subjects gave "Not applicable" responses to both interviewers on both occasions to Items 15a and 15b. 27 subjects responded negatively to both interviewers on both occasions to the item which asked if either they or their partners had threatened to, or had actually, left home as a result of arguments which had been caused by their drinking.

5.6.2 Discussion

The results of the study of the performance of the interview schedule when administered to a group of student nurses by both the author and the research assistant demonstrated a high degree of agreement on this occasion.

5.7   CONCLUSIONS

No statistically significant interviewer effects were found between the responses of the interviewees to any the items of the interview schedule. It was therefore decided that the follow-up interviews could proceed in the knowledge that it had been demonstrated that data derived from the interview schedule when administered by the research assistant and the author could be considered to be reliable.

CHAPTER SIX

A STUDY OF THE IDENTIFICATION OF POTENTIAL PROBLEM DRINKERS AMONG GENERAL HOSPITAL PATIENTS

6.1   INTRODUCTION

The study which is described in this Chapter was undertaken to identify potential problem drinkers among a general hospital in-patient population.   A screening procedure was used to identify the subjects.   This screening procedure consisted of laboratory measures and the interview schedule which had been refined as a result of the psychometric analysis described in Chapter Four.

In addition to its use as a recruitment tool for the study which is described in the next Chapter, the screening procedure provided a means of collecting baseline data with which outcome measures could be compared in order to assess the effectiveness of the interventions.

6.2   METHOD

6.2.1   Interview Schedule

The interview schedule was described in Chapter Four and is shown in Appendix 5. The data derived from the interview schedule were self-reports.   They included a quantitative evaluation of the level and pattern of alcohol consumption, and a score which was computed from the frequency with which experience of alcohol-related problems was reported.   Additional items were included to provide demographic information about the subjects

6.2.2   Exclusion Criteria

The study was confined to patients between the ages of 18 and 80 years.   Patients whose ages were outwith these limits were therefore excluded from the study.

6.2.3   Identification Criterion

Potential problem drinking was defined as weekly alcohol consumption levels in excess of the Health Education Authority's recommended sensible limit of 21 units for men and 14 units for women. The Royal College of Psychiatrists (1986), the Royal College of General Practitioners (1986) and the Royal College of Physicians (1987), endorsed these limits as general guidelines for sensible drinking. However, the authors of these reports acknowledged the fact that individuals vary in the rate at which alcohol is metabolised, according to such factors as body weight and liver and renal function, and that the guidelines are general recommendations which should not be interpreted as absolute limits.

The alcohol content of different beverages is given as standard units of alcohol in the Health Education Authority booklet entitled "That's the Limit - a Guide to Sensible Drinking". One standard unit contains 8 - 10 grammes of ethanol (Royal College of Psychiatrists, 1986). A weekly consumption of 21 standard units of alcohol is equivalent to a daily intake of 24 - 30 grammes ethanol. 30 grammes per day is the level of consumption which has been claimed to be associated with a significant increase in the risk of developing alcohol-related health problems (Saunders and Aasland, 1987).

In this study, patients were identified as potential problem drinkers if they reported having consumed alcohol in excess of these levels (i.e., males, 21 units; females, 14 units) during the week prior to the interview. If that week's consumption had been atypical, they were asked to give an account of a normal week's consumption.

6.2.4   Assessment of Concurrent Validity of the Interview Schedule

Concurrent validity of the interview schedule was assessed using the Alcohol Use Disorders Identification Test (AUDIT) which was devised for the World Health Organization as a screening test for the detection of problem drinkers (Saunders and Aasland, 1987; Babor et al, 1989). This instrument was validated in a multi-centre study which included Australia, Bulgaria, Kenya, Mexico, Norway, and U.S.A. The study sample included general hospital and general practice patients. The mean values for sensitivity and specificity of the instrument were 80% and 89% respectively. When administered to a sample of alcoholics in each centre, the mean value for sensitivity increased to 98% (Saunders and Aasland, 1987).

The AUDIT was administered to all patients who satisfied the inclusion criterion.

6.2.5 Biological Measures

Laboratory measures were used to provide objective data on biological indicators which are associated with alcohol consumption. These measures were estimation of erythrocyte mean cell volume (MCV), and two liver enzymes; namely gamma-glutamyl transferase (GGT) and aspartate transaminase (AST).

The author received training in the procedure of venesection and was granted a Certificate of Competence from the Greater Glasgow Health Board to withdraw samples of venous blood from participating patients for the analysis of MCV, GGT and AST.

6.3 DESIGN

6.3.1 Location

The study was conducted in the Western Infirmary, Glasgow. This is a large general teaching hospital whose catchment area includes both residential and deprived inner city areas. In addition to general medical and surgical wards, the hospital provides a variety of other specialist services.

The project was undertaken in the general medical, general surgical, orthopaedic and short-stay wards since these are clinical areas where problem drinking among in-patients has been noted (Chick et al, 1985; Elvy et al, 1988; Lockhart et al, 1986; Watson et al, 1991; Rowland and Maynard, 1993).

6.3.2 Approval for the Study

Approval to conduct the study was granted by the West Ethical Committee of the Greater Glasgow Health Board. The letter from the Secretary of the committee is shown in Appendix 7. In addition, all clinical consultants gave consent for their patients to be invited to participate. Nurse managers, whose areas of responsibility included care of patients in these wards, also gave approval. The Heads of the Haematology and Biochemistry Departments agreed to analyse the blood samples.

6.3.3   Procedure

From 14 January 1991, a consecutive series of patients who were admitted to the care of clinical consultants of the Western Infirmary, Glasgow in the general medical, surgical, orthopaedic and short-stay wards, were invited to participate in the screening procedure.   These patients were receiving treatment for conditions which were not primarily alcohol-related.

Informed consent for inclusion in the study was sought from all participating patients. Patients were told that the purpose of the study was to investigate the relationship between alcohol consumption and health and that all patients between the ages of 18 and 80 years were being invited to participate.   They were informed that their participation would involve their answering some questions about their consumption of alcohol.   They were also asked if a blood sample could be taken, if this had not already been done for clinical reasons.   Finally, they were asked if they would give the author permission to read their medical and nursing records.   A copy of the explanatory statement which the patients were invited to read and sign is shown in Appendix 8.

On agreement to participate, patients were interviewed by the author.

Every attempt was made to ensure that the manner in which the interviews were conducted was consistent.   Consistency of dress was achieved by the author, a registered nurse, wearing the uniform of staff nurse when interviewing patients.   This also had the advantage that the research was conducted in conditions which were as close as possible to those of normal nursing practice.

GGT, AST and MCV results were obtained from the medical case records of those patients for whom these analyses had been undertaken for clinical reasons.   Patients whose medical condition had not warranted these investigations were asked if they would agree to the author withdrawing a sample of venous blood for the necessary analyses.

6.3.4   Sample Size

Two main issues were considered when deciding how many patients should be recruited to the study.   The first of these issues concerned the statistical power which

would be required to detect a difference in reported alcohol consumption before and after administration of the intervention. The second issue concerned the projected estimation of the number of patients who would be available for the collection of follow-up data.

Advice was sought from a statistician on the size of the sample required. The data were to be analysed using analysis of variance. Using a formula described by Cohen (1977) it was calculated that a sample of 100, with 25 subjects in each treatment group, was required to give the trial 80% power to detect a reduction in alcohol consumption of 25% at a significance level of 5%.

In the study conducted by Chick et al (1985), 85% of patients were followed up one year later. The follow-up rate of 84% which was reported in the York District Hospital Study (Rowland and Maynard, 1993) was very similar. It was, therefore decided that an attrition rate of 15% might realistically be expected. In order to err on the side of caution, it was decided that a sample of 125, allowing for an attrition rate of 20%, would be adequate to detect a difference of 25% in reported consumption levels. This was the extent of the reduction for which the World Health Organization had set as its target for Europe (World Health Organization, 1991).

The study of minimal interventions which is described in Chapter Seven of this thesis required that the subjects, who were identified as potential problem drinkers in this study, be assigned to one of four experimental groups. Since 125 is not divisible by 4, it was necessary, for the purpose of allocating patients to one of four groups, to derive a sample of 128 subjects.

6.4 STATISTICAL ANALYSIS

The Statistical Package for the Social Sciences (SPSSX) was used to compute and analyse the data. The conditions of the Data Protection Act were observed.

The frequency with which patients reported abstinence, irregular patterns of alcohol consumption and previous treatment for an alcohol problem were computed. In addition, the proportion of patients whose reported consumption was greater than the required level for identification as potential problem drinkers was calculated. The distribution of patients who were newly identified as potential problem drinkers in the different types of ward was analysed.

The ranges, mean values, medians and standard deviations were computed for the data pertaining to patterns of reported alcohol consumption, alcohol-related problems and biological and bio-graphical data from those patients who were identified as potential problem drinkers.

The frequency with which nurses' notes indicated a record of the patients' alcohol consumption was also analysed.

T-tests were applied to the data to determine whether there were statistically significant differences between the mean number of alcohol-related problems experienced by those patients who were identified as potential problem drinkers and those who reported drinking less than the "sensible limits". T-tests were also applied to the biological laboratory data from these patients. Since the distribution of levels of alcohol consumption, GGT and AST in the general population are known to be lognormal, logarithms of the values of these variables were computed in order that parametric statistics could be applied to these data.

The Pearson's product moment correlation coefficient was computed to determine the degree of association between the scores for alcohol related problems, derived from the interview schedules, and the AUDIT screening test scores of those patients who reported drinking in excess of the sensible limits. Pearson's product moment correlation co-efficients were also computed for the reported levels of alcohol consumption and the biological data.

6.5 RESULTS

6.5.1 Number of Patients Admitted to the Wards where the Study was Conducted

A total of 1221 patients between the ages of 18 and 80 years were admitted to the care of the clinical consultants on the staff of the Western Infirmary in the general medical, general surgical, orthopaedic and short-stay wards between 14 January and 24 April 1991.

223 of these patients were not interviewed. Of these 223 patients, 95 were unavailable for interview because they were undergoing treatment, clinical investigations or were too ill to be interviewed; 48 had communication problems such

as deafness, dysphasia, mental confusion or illness which precluded a reliable interview, or spoke little or no English; 25 patients had been discharged from hospital and 12 had died before there was an opportunity for them to be approached by the researcher. 16 were admitted to the hospital for a second time during the data collection period but had been approached during their first admission. 27 refused to be interviewed. Of the 1221 patients, 998 agreed to participate in the study and were therefore interviewed.

6.5.2 Levels of Alcohol Consumption of Patients who Agreed to be Interviewed

Of the 998 patients who agreed to participate, 201 (20.1%)had not drunk alcohol during the preceding year and 552 (55.3%) reported drinking less than the level at which subjects were identified as potential problem drinkers. 245 (24.5%) reported drinking in excess of the guidelines for low-risk drinking (i.e., more than 21 units per week for males, and more than 14 units per week for women). 81 (8.1%) of these patients had previously had treatment for an alcohol problem from a professional or voluntary organisation. An additional 21 (2.1%) were bout or seasonal drinkers. 143 (14.3%) patients were therefore newly identified as potential problem drinkers.

It had been decided to recruit 128 patients, each treatment group consisting of 32 subjects. Recruitment ceased when the minimum number of patients allocated to each of the experimental groups was 32. The data were then entered into a data-file for analysis by SPSSX. At that time it was noted that the publication "That's the Limit: a Guide to Sensible Drinking" states that one measure of spirits is the equivalent of 1.5 standard units. This highlighted the fact that an error had been made in estimating the level of alcohol consumption, in that one measure of spirits had been calculated as being equivalent to 1.0 standard unit of alcohol.

When levels of alcohol consumption were estimated according to the information given in the publication, an additional 10 patients were found to have reported drinking in excess of the limits for inclusion in the study, giving a total of 153 (15.3%) newly identified potential problem drinkers. The effects of this amendment were analysed and are reported in Section 7.4.2.1.

6.5.3   Abstainers

Of the 201 patients who reported that they had not drunk any alcohol during the previous year, 58 were life-long abstainers. Of these 58 individuals, 14 did not drink for religious reasons. A further four of the 201 patients reported abstinence for religious reasons but were not life-long abstainers. 71 of the 201 patients no longer drank because of previous alcohol problems and 34 were abstinent on other health grounds. 25 said that they were not interested in drinking or did not like alcohol, and 9 said that they did not drink for financial reasons.

6.5.4   Characteristics of Newly Identified Potential Problem Drinkers

The range of values, means, medians and standard deviations derived for age, patterns of alcohol consumption, GGT, AST and MCV are given in Table 6.1.

TABLE 6.1

Range Of Values, Means, Medians And Standard Deviations For Age, Alcohol Consumption, GGT, AST And MCV Of Potential Problem Drinkers

	Range	Mean	Median	S.D.
Age	18-77yrs	42.5	40.0	16.8
Consumption	15-315 units/wk	43.1	33.0	37.5
Max. drunk in 24 hrs	2-92 units	17.9	15.0	12.9
No. drinking days	1-7 days	3.6	3.0	2.1
GGT (5-50 IU/l)*	6-780 IU/l	58.1	31.0	93.7
AST (10-35 IU/l)*	3-470 IU/l	39.0	26.6	52.7
MCV (96-98 fl)*	65.4-115.3fl	93.3	92.9	5.9
Score	0-29	6.6	5.0	6.4
AUDIT score	1-35	14.6	12.0	7.3

***Values for normal ranges are indicated in parentheses**

Of the 153 patients who were newly identified as potential problem drinkers, 115 (75.2%) were men and 38 (24.8%) were women. The level of consumption for the previous week reported by the men ranged from 22 standard units of alcohol to 315 units. The mean value was 47.6 and the median was 35.0. The equivalent range

reported by the women was *15 to 140* standard units. The mean value for the women's consumption was *31.3* and the median was *20*.

6.5.5 Wards in which Potential Problem Drinkers were Identified

33 (21.6%) of the newly identified potential problem drinkers were recruited from the medical wards, 43 (28.1%) from surgical wards, 18 (11.2%) from orthopaedics and 59 (38.6%) from the short-stay ward.

6.5.6 Record of Alcohol Consumption in Nursing Notes

The nursing notes of those patients who were newly identified as potential problem drinkers were examined for records of patients' reported levels of alcohol consumption. 32.4% of nursing notes made no mention of alcohol consumption. 39.8% included descriptive comments, such as "social" or "heavy drinker". 27.8% quantified alcohol consumption, 15.6% of the sample having recorded weekly levels of alcohol consumption which were within 4 standard units of the patients' assessment to the author.

6.5.7 Concurrent Validity of the Screening Interview

The linear relationship between the alcohol problems score derived from the screening interview and the score derived from AUDIT was measured by the Pearson product moment correlation co-efficient ($r = 0.80$, $p<0.001$).

6.5.8 Biological Measures

Pearson product moment correlation co-efficients were computed for the reported alcohol consumption for the previous week with the log-transformations of GGT and AST, and with MCV. This analysis was applied to the data of the 153 subjects who were identified as potential problem drinkers. It was also applied to the data of a random sample of 100 light drinkers. They were defined as such if they reported drinking less than the level necessary for identification as problem drinkers. Results of these analyses and the correlation co-efficients for the data of the potential problem drinkers combined with those of the random sample of light drinkers are given in Table 6.2.

TABLE 6.2

Correlation Coefficients Of Levels Of Alcohol Consumption With Log-GGT, Log-AST And MCV For Light Drinkers, Potential Problem Drinkers And Pooled Data From Light And Potential Problem Drinkers

	Light Drinkers			Problem Drinkers			Pooled Data		
	r	()*	n	r	()*	n	r	()*	n
Log GGT	-.03	.40	100	.24	.006	103	.17	.01	203
Log AST	.06	.31	100	.25	.007	85	.20	.006	185
MCV	.11	.19	100	.25	.01	111	.27	.001	211

( )* p-value

T-tests which were applied to the data pertaining to the logarithms of GGT and AST, and to MCV of those patients who reported drinking less than the sensible limits (i.e., light drinkers) and of those who were identified as potential problem drinkers. The results are shown in Table 6.3.

TABLE 6.3

Differences In Log-GGT, Log-AST And MCV Between Light And Potential Problem Drinkers

	t	p-value
Log GGT	-1.83	.07
Log AST	-1.81	.07
MCV	-3.06	.003

6.5.9   Problem Scores

A statistically highly significant difference (t = -20.44; p < .001) was found when the t-test was applied to the alcohol-related problem scores of those patients who reported drinking less than the level required for identification as a potential problem drinker and those patients whose alcohol consumption was reported as being above that level.

Of the patients who reported drinking more than the recommended "sensible level", 80.0% responded positively to at least one of the items of the interview schedule which related to experience of alcohol problems during the last year. The corresponding percentage of patients who reported experience of at least one alcohol problem during the previous year but who reported levels of alcohol consumption lower than the limit required for identification as a potential problem drinker was 22.5%.

The frequency with which alcohol problems were reported by the patients who were newly identified as potential problem drinkers are shown in Table 6.4.

TABLE 6.4
Alcohol-Related Problems

Ulcer made worse by alcohol	7 (4.6%)
Alcohol-related accident	31 (20.3%)
Fails to stick to limits	24 (16.0%)
Work problems	23 (15.0%)
Restlessness	26 (17.0%)
Tremor	46 (30.1%)
Morning drinking	45 (29.4%)
Domestic arguments	27 (17.6%)
Threatened to/actually left home	8 (5.2%)
Spouse threatened to/actually left home	18 (11.7%)
Money worries	11 (7.2%)
Alcohol-related diagnosis	34 (22.2%)

6.6 DISCUSSION

6.6.1 Rate of Detection of Problem Drinkers

As outlined in Section 6.2.3 of this Chapter, patients were identified as potential problem drinkers according to the amount of alcohol which they had reported drinking during the previous or a typical week. The level of drinking above which increased risk of health problems is associated is described by the Health Education Authority as being in excess of 21 units per week for men or 14 units for women.

Of the 998 patients who were interviewed, 24.5% reported drinking in excess of these limits. Problems exist in making direct comparisons between studies because of different samples and methods of detection. However, this rate was similar to that found by Rowland and Maynard (1993) who detected 23.2% of patients drinking above these levels when screened on admission to the general medical, surgical and orthopaedic wards of York District Hospital. Chick et al (1985) identified 22% of male patients in medical wards as problem drinkers. Lockhart et al (1986) found that 25% of patients who were admitted as medical emergencies to a large London teaching hospital reported levels of alcohol consumption in excess of 20 units per week. However, Lockhart et al made no distinction between men and women's levels of consumption.

6.6.2 Concurrent Validity of the Screening Interview

The correlation co-efficient of 0.80 reported in Section 6.5.7 indicated a high degree of association between the patients' alcohol problems score which was derived from the screening interview schedule and their score for the World Health Organization alcohol screening instrument, AUDIT. This finding is indicative of an acceptable level of concurrent validity of the interview schedule which was used in this study. It further adds credence to the construct validity which was demonstrated by the study reported in Chapter Four.

6.6.3 Reliability of the Screening Interview

The highly significant difference between mean scores for alcohol problems as derived by the screening interview of the potential problem drinkers and those whose alcohol consumption was light suggests that the screening interview is a reliable tool for the detection of alcohol problems among relatively heavy drinkers.

6.6.4 Biological Measures

The results which are shown in Table 6.2 show that there was very little association between any of the biological markers and the level of alcohol consumption reported by those patients who reported drinking levels below the criterion for identification as a potential problem drinker (i.e., light drinkers). The correlation co-efficient between each of the markers and reported level of alcohol consumption in the sample of potential problem drinkers, although higher in each case, remained modest. When the

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CHAPTER SEVEN

A STUDY OF MINIMAL INTERVENTIONS FOR POTENTIAL PROBLEM DRINKERS AMONG GENERAL HOSPITAL PATIENTS

7.1   INTRODUCTION

This Chapter describes a study which was designed to evaluate the relative effectiveness of three forms of minimal intervention as treatments for alcohol problems. The subjects of the investigation were the patients who had been newly identified as potential problem drinkers as described in Chapter Six. The study described in this Chapter involved the administration of the minimal interventions and the collection of follow-up data. Evaluation of the effectiveness of the interventions was achieved by comparing the follow-up data with baseline data which were presented in Chapter Six.

7.2   EXPERIMENTAL DESIGN

7.2.1   Allocation Of Patients To Treatment Groups

Following the administration of the screening procedure which was described in Chapter Six, the patients who had been newly identified as potential problem drinkers were invited to participate in the study of minimal interventions. Those who agreed to participate and to be re-assessed one year later were allocated to one of the following four experimental treatment groups:

Group 1 Patients in this group were given a copy of the Health Education Authority booklet entitled "That's the Limit: a Guide to Sensible Drinking". This is a 14 page pamphlet which contains advice about the effects of alcohol and how to reduce consumption to within recommended safe limits.

Group 2 Patients in this group were given brief advice about the effects of alcohol consumption on health and about how to reduce consumption. The advice was given in a one-to-one interpersonal interaction and was based on the information derived from the screening interview. The session lasted for approximately ten to fifteen minutes.

Group 3 were given both the booklet which was given to Group 1 and the advice as described for patients in Group 2.

Group 4 were given no intervention.

These minimal interventions were administered by the author.

As discussed in Chapter Three, patients who were recruited to the study by means of the screening procedure were allocated to the experimental treatment groups according to the ward in which they were receiving clinical care, rather than by random allocation. The reason for this was to avoid the possibility of contamination of the subjects by patients in different groups discussing their treatments. A timetable was drawn up whereby each treatment was conducted in each type of ward for a finite period of time. The timetable is shown in Table 7.1.

TABLE 7.1

Timetable For The Allocation Of Patients
To Experimental Treatment Groups

	Surgical	Medical	Orthopaedic	Short-stay
14/1/91 - 10/2/91	Booklet	Advice	Both	Control
11/2/91 - 10/3/91	Control	Booklet	Advice	Both
11/3/91 - 7/4/91	Both	Control	Booklet	Advice
8/4/91 - 24/4/91	Advice	Both	Control	Booklet

7.2.2   Follow-Up Procedure

The patients who had been newly identified as problem drinkers were invited to participate in a follow-up assessment.

The follow-up procedure consisted of conducting follow-up interviews and the collection of blood samples for analysis of gamma glutamyl-transferase (GGT), aspartate transferase (AST) and mean cell volume (MCV). The follow-up interview

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consisted of the structured interview schedule which had been used in the initial screening procedure with the addition of some items relating to the participants' health during the previous year. This schedule is shown in Appendix 11. The follow-up assessments were conducted in the patients' own homes by the research assistant who had received training in the use of the interview schedule. She was "blind" to the experimental treatment group to which the patients had been assigned. As described in Section 5.2 of Chapter Five, the research assistant was a trained community psychiatric nurse and was therefore experienced in interviewing patients in their own homes. The study which is described in Chapter Five had demonstrated the reliability of the interview schedule when administered by the author, who had conducted the initial interviews, and the research assistant, who conducted the follow-up interviews. She was also trained in the procedure of venesection to enable her to withdraw the blood samples.

One year after the initial interviews, each of the patients who had agreed to participate in the minimal intervention study was sent a letter informing them of arrangements for the research assistant to conduct the follow-up procedure (Appendix 12).

7.2.3   Approval For The Study

Approval for the study was granted by the West Ethical Committee of Greater Glasgow Health Board, the clinical consultants and nurses with responsibility for medical and nursing care of participating patients. Written, informed consent was sought from all patients who were invited to take part in the study. The letter confirming approval of the Ethical Committee and the consent form are shown in Appendices 9 and 13 respectively.

7.3   STATISTICAL ANALYSIS

The data derived from the screening procedure were analysed in order to ascertain whether the patients in the experimental treatment groups differed from each other in relation to their levels of alcohol consumption, experience of alcohol problems and biographical details. Continuous variables were analysed by one-way analyses of variance, and the chi-square test was applied to categorical variables.

The continuous variables which were analysed included the patients' ages, their reported level of alcohol consumption during the previous week, the number of

drinking days they had reported during the previous week and the biological data. Because the reported levels of alcohol consumption were skewed, logarithms of these data were computed to enable parametric methods of statistical analyses to be applied. The logarithms of GGT and AST levels were also computed. The MCV values were analysed as reported by the Haematology Department since these are normally distributed.

The categorical variables which were analysed by the chi square test were the sex, occupation, marital status and social class of participating patients. Social class was derived from the postal codes of patients' home addresses using the postal code social class analysis which is used by the Greater Glasgow Health Board (Annual Report of the Director of Public Health, Greater Glasgow Health Board, 1990). This is based on information from the Office of Population Censuses and Surveys.

The effectiveness of the interventions was assessed by applying two-way analyses of variance (MANOVA) to the pre- and post-test data. The outcome measures which were analysed in this way were the variables which pertained to reported levels of alcohol consumption, patients' interview scores for alcohol-related problems and the biological data. For these analyses, data on levels of alcohol consumption, GGT and AST were transformed to logarithms.

The data were analysed using the Statistical Package for the Social Sciences (SPSSX) at the University of Strathclyde on a main-frame computer. Conditions of the Data Protection Act were observed.

7.4   RESULTS

7.4.1   Allocation Of Patients To Treatment Groups

153 patients had been newly identified as potential problem drinkers in the study which was reported in Chapter Six. Of these 153 patients, three refused to participate in the study of minimal interventions.

The experimental treatment groups to which patients were allocated are shown in Table 7.2

TABLE 7.2

Number Of Patients Assigned To Each Experimental Group

(n=150)

		n
Group 1	(Booklet only)	37 (24.7%)
Group 2	(Advice only)	34 (22.6%)
Group 3	(Advice + booklet)	32 (21.3%)
Group 4	(Control)	47 (31.3%)

The reason for the greater number of subjects in the control group is that, as described in Section 6.5.2 of Chapter Six, an additional 10 patients were found to have reported levels of alcohol consumption which were in excess of the limits for inclusion in the study when this was estimated according to the information given in the Health Education Authority publication. These patients were allocated to the control group and were not contacted until the following year, at which time they were invited to give informed consent to participate in the follow-up stage of the study. Results of the analyses which were conducted to assess the implications of this amendment are given in the footnote to Section 7.4.2 of this Chapter.

7.4.2   Characteristics Of Patients Recruited To The Study

The results of the one-way analyses of variance on data derived from the initial screening procedure are given in Table 7.3. These data relate to biographical information, levels of alcohol consumption, experience of alcohol-related problems and the biochemical and haematological results. They include data from the additional 10 patients who had been recruited to the control group for the reason described in Section 7.4.1. Table 7.4 shows the results of the chi-square analyses of the categorical data derived from the initial interviews.

TABLE 7.3

One-Way Analyses Of Variance Of Characteristics Of Patients Recruited By Experimental Group

	Sum of Squares	Mean Squares	D.F.	F-ratio	Significance
Age (between groups)	456.59	152.20	3	.53	.66
Age (within groups)	41416.30	287.61	144		
Previous week's consumption (log)					
Between groups	.03	.01	3	.18	.91
Within groups	8.96	.06	145		
Log GGT (between groups)	.62	.21	3	1.31	.27
Log GGT (within groups)	15.57	.16	99		
Log AST (between groups)	.09	.03	3	.47	.70
Log AST (within groups)	5.93	.06	91		
MCV (between groups)	77.86	25.95	3	1.00	.39
MCV (within groups)	2741.36	25.86	106		
Score (between groups)	131.81	43.94	3	1.14	.33
Score (within groups)	5576.07	38.45	145		

TABLE 7.4

Chi Square Analyses Of Sex, Marital Status And Social Class Of Patients Recruited By Experimental Group

	χ^2	D.F.	Significance
Sex	4.25	3	.24
Marital status	13.64	9	.14
Occupation	17.31	21	.69
Social class	21.04	24	.64

7.4.2.1 Footnote

The additional ten patients, referred to in Section 7.4.1, had been allocated to the control group. When one-way analyses of variance and the chi square test were

applied to the significant differences between the groups were found. The data, therefore, were analysed for the sample of 140 and also for the sample of 150. No significant differences were found between the groups in either instance. It was therefore decided to include the data from the additional 10 subjects in the subsequent analyses.

7.4.3   Follow-Up Rate

102 patients were seen at follow-up. This constituted 66.7% of the patients who had been newly identified as potential problem drinkers by the screening procedure one year previously.

Attempts were made to contact all those who had been recruited to the study, but 7 had moved from the area, 23 could not be traced, 8 had died and 10 refused to be re-interviewed. The chi square test showed that there were no statistically significant differences between each treatment group in the numbers of patients who did not participate in the follow-up interviews (χ^2 = 9.4; degrees of freedom = 9; p = .40).

The numbers of patients in each of the treatment groups interviewed both at entry to the study and at follow-up are shown in Table 7.5.

TABLE 7.5
Composition Of Experimental Groups At Entry To Study And At Follow-Up

	Entry to study (n=150)	Follow-up(n=102)
Group 1 (Booklet only)	37 (24.7%)	27 (26.5%)
Group 2 (Advice only)	34 (22.6%)	23 (22.5%)
Group 3 (Advice + booklet)	32 (21.3%)	21 (20.6%)
Group 4 (Control)	47 (31.3%)	31 (30.4%)

7.4.4   Characteristics Of Patients Who Were Followed Up

The analyses presented in Tables 7.3 and 7.4 were repeated on the data from the initial screening procedure excluding data from those subjects for whom follow-up data were not available. The purpose of the analyses was to establish whether differences existed between the experimental treatment groups in baseline data

relating to levels of alcohol consumption and experience of alcohol-related problems. The results are presented in Tables 7.6 and 7.7.

TABLE 7.6

One-Way Analyses Of Variance Of Characteristics Of Subject Followed-up By Group

	Sum of Squares	Mean Squares	D.F.	F-ratio	Significance
Age (between groups)	126.52	42.17	3	.16	.92
Age (within groups)	24273.83	262.47	92		
Previous week's consumption (log)					
Between groups	.002	.0007	3	.01	.99
Within groups	6.38	0.7	93		
Score (between groups)	135.63	45.21	3	1.32	.27
Score (within groups)	3175.92	34.15	93		
Log GGT (between groups)	.04	.01	3	.09	.96
Log GGT (within groups)	10.12	.15	67		
Log AST (between groups)	.07	.02	3	.33	.81
Log AST (within groups)	4.13	.07	62		
MCV (between groups)	71.83	23.94	3	1.01	.39
MCV (within groups)	1750.49	23.66	74		

TABLE 7.7

Chi Square Analyses Of Sex, Marital Status And Social Class Of Subjects Followed-up By Group

(n=102)

	χ^2	D.F.	Significance
Sex	5.53	3	.14
Marital Status	5.10	9	.83
Occupation	15.30	21	.81
Social Class	20.05	24	.69

7.4.5   Analysis Of Pre- And Post-Test Data: Level Of Alcohol Consumption

The mean values for each group of reported levels of alcohol consumption during the week prior to the initial and follow-up interviews respectively are presented in Table 7.8. These data are presented graphically in Figure 7.1

TABLE 7.8

Mean Values Of Initial And Follow-Up Levels Of Alcohol Consumption

	n	Initial Mean (S.D.)	Follow-up Mean (S.D.)
Booklet	27	45.7 (57.6)	33.7 (27.4)
Advice	23	41.0 (21.0)	28.9 (29.8)
Advice + booklet	21	44.6 (30.8)	24.0 (17.1)
Control	31	45.2 (42.9)	30.5 (30.0)
Entire Sample	102	44.3 (41.1)	30.0 (26.9)

FIGURE 7.1
Pre- And Post-Test Levels of Alcohol Consumption by Experimental Group
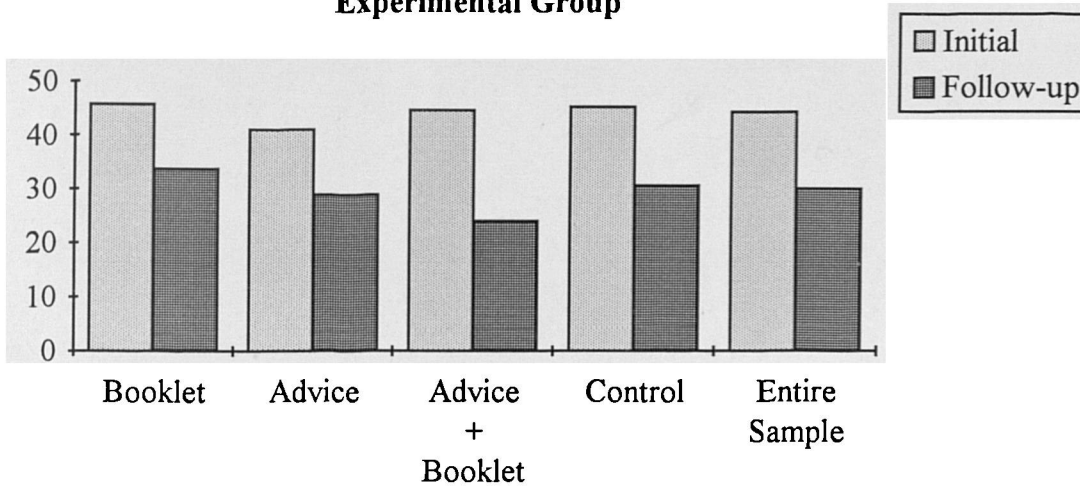
The results of the two-way analysis of variance of the data pertaining to the reported level of alcohol consumption during the week prior to interview are presented in Table 7.9.

TABLE 7.9

Two-Way Analysis Of Variance Of Pre- And Post-Test Levels Of Alcohol Consumption (Logarithms)

MANOVA:	Sum of Squares	Degrees of Freedom	Mean Squares	F-ratio	Significance
Between groups:					
Within cells	13.12	93	.14		
Group	.10	3	.03	.23	.88
Within groups:					
Within cells	5.01	93	.05		
Time	1.88	1	1.88	34.86	<.001
Groups by time	.12	3	.04	.72	.54

The results which are presented in Table 7.9 of the two-way analysis of variance of reported levels of alcohol consumption showed that there was a highly statistically significant effect for time across all four groups ($p < .001$). There was no significant effect for group, nor was there an interaction between group and time. This indicates that, although the mean value for the sample as a whole was significantly lower at follow-up than at the initial screening, no one group reported a significantly greater reduction than any of the others.

7.4.6   Analysis Of Pre- And Post-Test Data: Frequency Of Alcohol-Related Problems

The mean number for each group of alcohol-related problems experienced during the previous year as reported at the initial and follow-up interviews are presented in Table 7.10.

TABLE 7.10

Mean Number Of Alcohol-Related Problems Reported At Initial And Follow-Up Interviews

	n	Initial Mean (S.D.)	Follow-up Mean (S.D.)
Booklet	27	8.2 (7.0)	5.3 (6.2)
Advice	23	5.6 (6.6)	3.4 (4.7)
Advice + Booklet	21	8.6 (6.4)	5.1 (4.2)
Control	31	5.6 (5.1)	3.5 (4.5)
Entire Sample	102	6.9 (6.3)	4.3 (5.0)

The data which are presented in Table 7.10 are shown as a bar chart in Figure 7.2.

FIGURE 7.2
Pre- and Post-Test Levels of Alcohol-Related Problems By Experimental Group
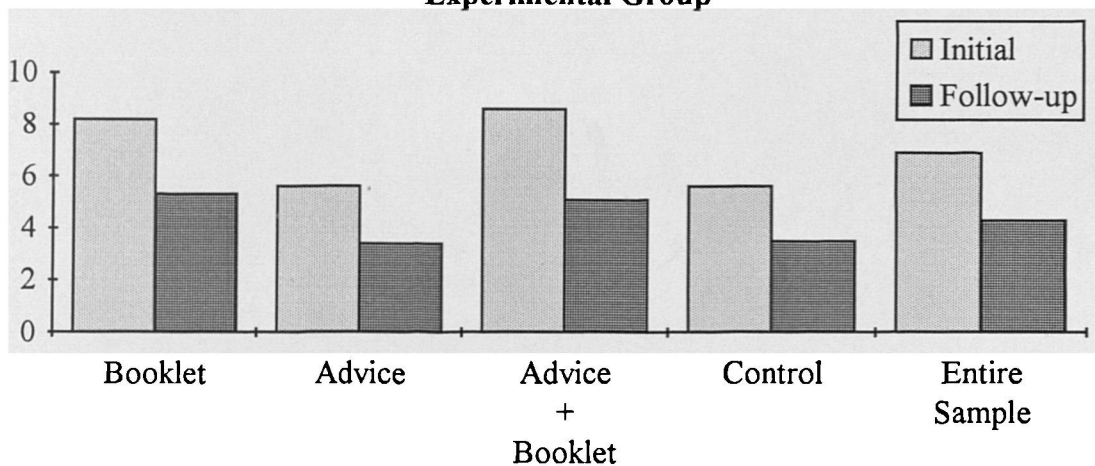
The results of the two-way analysis of variance of the data pertaining to the interview score for alcohol-related problems are presented in Table 7.11.

TABLE 7.11

Two-Way Analysis Of Variance Of Pre- And Post-Test Reports Of Alcohol-Related Problems

MANOVA:	Sum of Squares	Degrees of Freedom	Mean Squares	F-ratio	Significance
Between groups:					
Within cells	4335.95	98	44.24		
Group	270.73	3	90.24	2.04	.11
Within groups:					
Within cells	1461.12	98	14.91		
Time	333.09	1	333.09	22.34	<.001
Groups by time	20.56	3	6.85	.46	.71

The results of the two-way analysis of variance presented in Table 7.11 show that there was a statistically significant effect for time in the scores for alcohol-related problems as derived from the interview schedule across all four groups (p <.001) but that, again, there was no effect for group and no interaction.

7.4.7   Analysis Of Pre- And Post-Test Data: GGT Levels

The mean pre-test and post-test values for each group of GGT are presented in Table 7.12. These data are presented graphically in Figure 7.3.

TABLE 7.12

Mean Pre- And Post-Test GGT Values

	n	Initial Mean (S.D.)	Follow-up Mean (S.D.)
Booklet	17	45.3 (37.3)	47.5 (47.4)
Advice	17	43.6 (58.6)	23.9 (15.9)
Advice + Booklet	17	49.2 (53.6)	43.3 (61.6)
Control	19	57.1 (70.9)	46.8 (48.1)
Entire sample	70	49.0 (55.9)	40.5 (46.3)

FIGURE 7.3

Pre- And Post-Test Levels Of GGT By Experimental Group
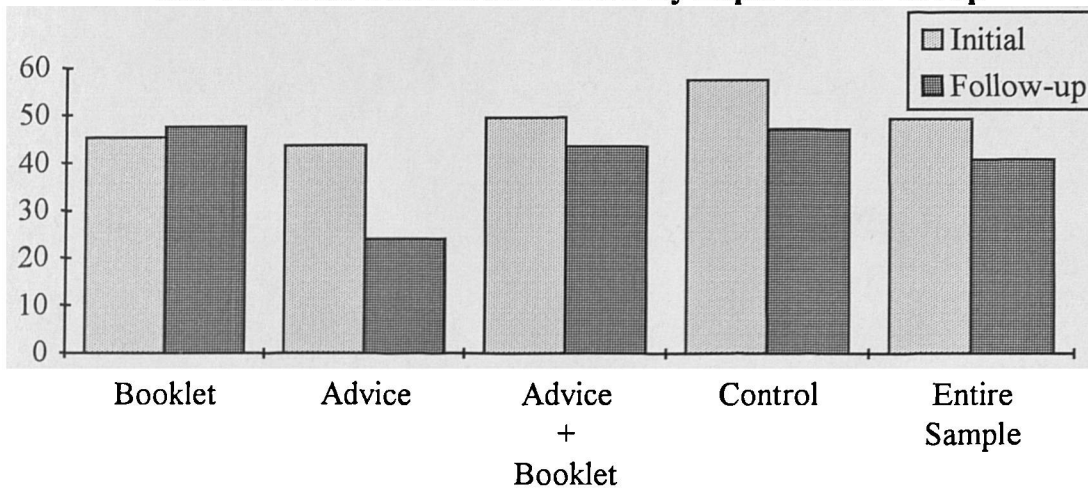
The results of the two-way analysis of variance of the data pertaining to the biological measures are presented in Tables 7.12, 7.14 and 7.16. The mean values which are presented for GGT and AST were derived from the raw data. The analyses of variance were computed from the logarithms of the data.

TABLE 7.13

Two-Way Analysis Of Variance Of Pre- And Post-Test Values For GGT

(Logarithms)

MANOVA:	Sum of Squares	Degrees of Freedom	Mean Squares	F-ratio	Significance
Between groups:					
Within cells	18.08	66	.27		
Group	.51	3	.17	.62	.60
Within Groups:					
Within cells	2.41	66	.04		
Time	.24	1	.24	6.67	.01
Groups by time	.15	3	.05	1.33	.27

The results of the analyses of the data on GGT showed a reduction in the mean values of the logarithms of this variable for all groups except that which received only the booklet. The analysis of variance showed that there was a statistically significant

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effect for time for the entire sample. There was, however, no effect for group and there was no interaction.

7.4.8   Analysis Of Pre- And Post-Test Data: AST Levels

The mean pre-test and post-test values for each group of AST are presented in Table 7.14 and as a bar chart in Figure 7.4.

TABLE 7.14

Mean Pre- And Post-Test AST Values

	n	Initial Mean (S.D.)	Follow-up Mean (S.D.)
Booklet	17	36.2 (16.7)	33.5 (23.8)
Advice	17	57.8 (107.3)	24.6 (6.9)
Advice + Booklet	18	35.0 (14.5)	24.2 (7.0)
Control	13	35.2 (20.0)	30.4 (15.0)
Entire sample	65	41.3 (56.4)	28.1 (15.0)

FIGURE 7.4
Pre- And Post-Levels of AST By Experimental Group
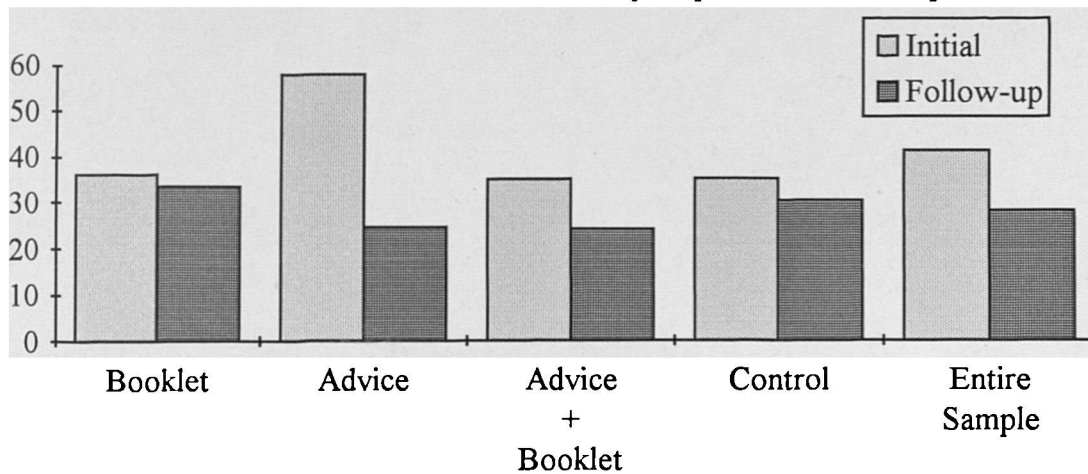
TABLE 7.15

Two-Way Analysis Of Variance Of Pre- And Post-Test Values For AST
(Logarithms)

MANOVA:	Sum of Squares	Degrees of Freedom	Mean Squares	F-ratio	Significance
Between groups:					
Within cells	4.18	61	.07		
Group	.06	3	.02	.27	.85
Within groups:					
Within cells	2.19	61	.04		
Time	.35	1	.35	9.66	.003
Groups by time	.12	3	.04	1.08	.37

The two-way analysis of variance showed no effect for group when applied to the logarithms of the values for AST. However, a significant effect for time was found.

7.4.9 Analysis Of Pre- And Post-Test Data: MCV Levels

The mean pre-test and post-test values for each group of MCV are presented in Table 7.16. These data are presented graphically in Figure 7.5.

TABLE 7.16

Mean Pre- And Post-Test MCV Values

	n	Initial Mean (S.D.)	Follow-up Mean (S.D.)
Booklet	18	93.0 (4.2)	92.0 (5.7)
Advice	16	93.7 (4.3)	92.4 (3.3)
Advice + booklet	18	93.0 (5.1)	93.4 (4.8)
Control	24	94.0 (5.4)	93.9 (5.4)
Entire sample	76	93.5 (4.8)	93.0 (4.9)

FIGURE 7.5
Pre- And Post-Levels Of MCV By Experimental Group
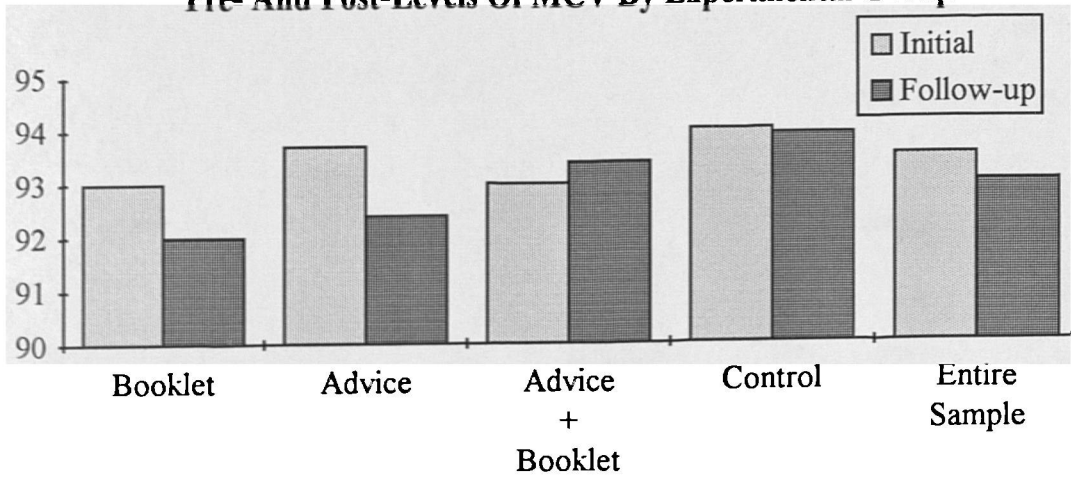
TABLE 7.17
Two-Way Analysis Of Variance Of Pre- And Post-Test Values For MCV

MANOVA:	Sum of Squares	Degrees of Freedom	Mean Squares	F-ratio	Significance
Between groups:					
Within cells	3156 41	72	43.84		
Group	52.36	3	17.45	.40	.75
Within groups:					
Within cells	336.32	72	4.67		
Time	11 64	1	11.64	2.49	.12
Groups by time	16.26	3	5.42	1.16	.33

No effects for either time or group were evident when two-way analysis of variance was applied to the values for MCV. The mean values for the entire sample showed a rise over time

7.4.10   Health Of The Follow-Up Sample

Subjects were asked to rate their health during the preceding year as good, "in-between or poor   61 9°o said that they had been in good health, 27.8% said that their health had been 'in-between" and 10.3% reported poor health. When the chi

square test was applied to the data no statistically significant differences between the groups were found ($\chi^2 = 4.8$; d.f. = 6; p = .57).

The subjects were also asked to report the number of visits which they had made to their general practitioner and also to state their number of visits to hospital. No significant differences were found between the groups for either variable.

7.5   DISCUSSION

7.5.1   Characteristics Of Patients Recruited To The Study

The analyses which were presented in Tables 7.3 and 7.4 were derived from the data from those patients who were recruited to the study, having been newly identified as potential problem drinkers by the screening procedure described in Chapter Six. The results demonstrated that the experimental groups did not differ significantly from each other in relation to the subjects' biographical information, levels of alcohol consumption, experience of alcohol-related problems and results of the biological data. The groups were therefore sufficiently similar to each other as to allow valid comparisons to be made of the effectiveness of the interventions.

7.5.2   Follow-Up Rate

66.7% of the subjects who were recruited to the study participated in the follow-up procedure. This attrition rate of 33.3% was considerably higher than had been anticipated. As discussed in Section 6.3.4 of Chapter Six, the attrition rate for similar studies was approximately 15% (Chick et al, 1985; Wallace et al, 1988; Rowland et al, 1993).

As shown in Section 7.4.3 by the results of the chi square analysis of the distribution among the groups of those individuals who did not participate in the follow-up procedure, there was no differential attrition rate.

When the data derived from the pre-intervention screening procedure were analysed for the subjects for whom follow-up data were available, no significant differences existed between groups. The results of these analyses are presented in Tables 7.6 and 7.7.

This suggests that the groups can be considered to be similar with regard to levels of alcohol consumption, biographical details and the biological data.

7.5.3   Results Of The Pre- And Post-Test Analyses: Level Of Alcohol Consumption

The results which are presented in Table 7.9 of the two-way analysis of variance of reported levels of alcohol consumption indicate that, although the mean value for the sample as a whole was significantly lower at follow-up than at the initial screening, no one group reported a reduction which was significantly greater than any of the others. The fact that the extent of the mean reduction in the level of alcohol consumption reported by the control group was not significantly different from the mean reduction reported by the subjects in each of the other three groups suggests that none of the interventions was more effective than no treatment.

It may be that the number of subjects for whom follow-up data were available was too small to detect statistically significant differences between the groups for this variable. The calculation, on which the decision on the sample size had been based, had estimated that 25 subjects per group were required to detect a 25% reduction in consumption at the 5% level of significance. However, even allowing for a 20% attrition rate, fewer than 25 subjects were followed up in two of the groups. These were the groups who were given the advice and those who received both advice and the booklet.

The finding that all groups reported lower levels of alcohol consumption at follow-up is not confined to this study. As was noted in the review of the literature in Chapter Two, reported reductions in drinking levels was a feature of many of the studies of minimal interventions for problem drinkers. One possible reason for this may be that the detailed inquiry into drinking behaviour of the screening procedure acted in itself as an intervention, the effect of which was to raise awareness of potentially harmful levels of alcohol consumption.

A further possible reason for both treatment and control groups reporting lower levels of consumption at follow-up may be the effect of the constraints which are imposed on such studies by Ethical Committees. In order to be able to give informed consent to participate in a research project, patients require to be given details about the study. While such information enables patients to give meaningful consideration to

whether or not they wish to exert their right to refuse to participate, the provision of such details may provide them with information which could influence their responses to questions, particularly about lifestyle factors and their impact on health. For studies such as this, these responses obviously have a crucial effect on the findings of the studies.

7.5.4 Results Of The Pre- And Post-Test Analyses: Frequency Of Alcohol-Related Problems

The results of the analyses of the scores for alcohol-related problems as derived from the interview schedule also showed a statistically significant effect for time across all four groups (p =.001) and, as was found in the analysis of consumption levels, no effect was evident for group.

The reasons postulated in Section 7.5.4.1 for the reported reductions of drinking levels may also apply to the findings relating to self-reports of alcohol-related problems.

7.5.5 Results Of The Pre- And Post-Test Analyses: GGT, AST And MCV Levels

The results for the analysis of variance when applied to the GGT and AST values supported those of the self-report data, insofar as the mean values of the logarithms of both GGT and AST were reduced for the entire sample to a significant level (p=.01 and 9=.003 respectively), but there were no significant effects of group or of interactions between group and time.

No significant changes were found in the levels of MCV.

7.5.6 Health Of The Follow-Up Sample

No differences were evident between the groups for any of the variables which measured the subjects' health over the previous year. This lends support to the finding that none of the interventions was instrumental in promoting changes in levels of alcohol consumption or in health status which were superior to those reported by the subjects of the control group.

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7.6   CONCLUSIONS

Because no one group reported significantly greater reductions in levels of any of the outcome measures than any other group, the results of this study do not show conclusive effects of minimal intervention.   However, it is interesting to note that highly significant reductions in alcohol consumption were reported across the entire sample, including the control group, at the one year follow-up for the mean levels of consumption, number of reported alcohol problems, and the levels of both liver enzymes.

This raises the question that simply asking patients about alcohol consumption appears to act as an intervention in its own right.   It may be that by asking patients to give a detailed account of their drinking, at a time when, being unwell, they may be more sensitive to issues which relate to their health and in an environment which provides more opportunity for reflection, is sufficient to nudge individuals one notch further on Prochaska and Di Clemente's readiness to change model, (Prochaska and Di Clemente, 1984)

A generalist approach to identification of potential problem drinkers is therefore justified.   However, in order for nurses to be effective in recognising problem drinkers they require basic information about drinking behaviour.   This is the subject of the investigation which is reported in the next Chapter.

CHAPTER EIGHT

A STUDY OF THE ROLE AND EDUCATION NEEDS OF NURSES IN RELATION TO ALCOHOL CONSUMPTION AND HEALTH

8.1   INTRODUCTION

Several authors have argued that nurses have a role in health education and the promotion of a healthy lifestyle in their patients (Storey, 1986; Close, 1987; MacLeod-Clark et al, 1987; Whitehead, 1989). It has been suggested that minimal interventions for alcohol problems, such as those described in Chapter Seven, are within the scope of non-specialist health care professionals such as nurses (Babor et al, 1986). McBrien (1983) suggested that general hospital nurses have the opportunity to both identify problem drinkers among their patients, and also to give appropriate advice. Despite this, Rowland and Maynard (1989), in a study of nurses working in a District General Hospital, found that only 53% of the nurses whom they surveyed reported that they routinely asked patients about alcohol consumption.

There is a dearth of evidence to support the premise that nurses possess the knowledge which underpins the effectiveness of such practice. In addition, few studies have been conducted to provide evidence of nurses' practice in either assessing patients' alcohol consumption or in giving advice to individuals whose drinking is potentially harmful.

The study which is described in this Chapter was undertaken to ascertain whether nurses who work in general hospital wards have the necessary theoretical knowledge base and skills to enable them to identify and participate in brief treatments for problem drinkers such as those described in Chapter Seven.

8.2   AIMS OF THE STUDY

The aims of this study were outlined in Chapter One. They are to investigate:

1)   nurses' practice in relation to assessment of their patients' alcohol consumption.

2)   nurses' knowledge of:

     a)   standard units of alcohol
     b)   sensible limits of alcohol consumption and
     c)   alcohol-related health problems.

3)   the education which nurses report having received to prepare them to assess patients' alcohol consumption and to give appropriate advice to potential problem drinkers.

4)   nurses' practice in relation to giving advice to problem drinkers about their drinking.

5)   whether nurses have access to health education literature to give to problem drinkers.

8.3   DESIGN

The study was conducted as a descriptive survey. A questionnaire was drawn up for distribution to a sample of nurses who were working in general hospitals at the time of conducting the survey.

8.3.1   The Questionnaire

The questionnaire is shown in Appendix 14. It was designed to produce data about:

1)   <u>Occupational characteristics of the respondents</u>

The first section of the questionnaire provided information about the respondents' ages, sex, professional qualifications, place and dates of training, length of nursing experience, grade and designation. These data provided a means of evaluating the effects of such factors as the nurses' designation and length of experience on their responses.

2) Assessment of patients' alcohol consumption

Items 1 and 2 of the questionnaire were intended to elicit how frequently the nurses asked patients about alcohol consumption compared with other life-style factors, and also how importantly the nurses viewed this. These items were based on questions derived from the York Alcohol Study: Nurses' Questionnaire (Rowland and Maynard, 1989).

These data provided information which was required to address the first aim of this study.

3) Nurses' knowledge

The questionnaire contained items which were designed to collect data about nurses' knowledge of standard units of alcohol (Item 12), of accepted sensible limits of alcohol consumption (Item 14), and of alcohol-related health problems (Item 10). The purpose of this was to meet the second aim of the study.

4) Nurses' education regarding assessing patients' alcohol consumption and giving advice to problem drinkers

The questionnaire contained items regarding nurses' education about alcohol and health. The responses to Items 3, 6, 11, 13 and 15 provided these data, which addressed the third aim of the study.

5) Nurses' practice in relation to giving advice to problem drinkers.

Items 4, 5 and 9 referred to the advice which nurses give to problem drinkers. This relates to the fourth aim of the study.

6) The availability of health education literature

Items 7 and 8 related to the nurses experience of relevant health education literature for potential problem drinkers. These items were designed to meet the fifth aim of the study.

8.4 APPROVAL FOR THE STUDY

Approval for the study was granted by the Chief Area Nursing Officer of the Greater Glasgow Health Board and permission to conduct the survey was sought and granted from the Unit Nurses of all hospitals where participating nurses were employed.

8.5 THE SAMPLE

The selection of samples for distribution of the questionnaire is described in detail in Section 3.3.2.5 of Chapter Three.

The questionnaires were distributed prior to the clinical studies which are reported in Chapters Six and Seven in order to avoid the possibility of producing bias in the respondents as a result of exposure to the clinical part of the project.

The survey was conducted in Glasgow's six large National Health Service general hospitals. A stratified sample, which was representative of each post held by ward-based nurses, was selected. The population from which the sample was drawn comprised a pool of 2595 ward-based general hospital nurses. The numbers of nurses and the posts which they held are given in Table 8.1.

TABLE 8.1
Numbers And Posts Of Nurses Eligible For Survey
(N=2595)

Enrolled Nurse	Staff Nurse	Ward Sister/Charge Nurse	Clinical Nurse Specialist
603 (23.2%)	1443(55.6%)	495(19.1%)	54(2.1%)

The types of ward in which these nurses were employed are shown in Table 8.2.

TABLE 8.2

Types Of Ward In Which The Nurses Were Employed

(N=2595)

Ward	n	(%)
Medical	632	(24.3)
Surgical	424	(16.34)
Accident and emergency	138	(5.3)
Orthopaedic	205	(7.9)
Elderly care	292	(11.3)
Other Specialties	904	(34.8)

A questionnaire was sent to every tenth nurse of each designation on the duty rosters at each of Glasgow's six general hospitals. A total of 260 questionnaires were distributed.

An explanatory letter, which assured the respondent confidentiality and anonymity, accompanied each questionnaire. The letter is shown in Appendix 15. An addressed envelope was also enclosed with each questionnaire for return of the completed questionnaire via the internal mail to the author at the Area Nursing Department of Greater Glasgow Health Board.

8.6   STATISTICAL ANALYSES

The chi square test was used to analyse categorical and ordinal data. T-tests and one-way analyses of variance were used to analyse parametric data.

Unless otherwise stated, the percentages given in this Chapter include missing values.

8.7   RESULTS

8.7.1   Response Rate

Of the 260 questionnaires which were distributed, 170 completed forms were returned, one of which had been received by a nursing auxiliary and one by a student nurse. 168 valid responses constitutes a rate of 64.6%.

8.7.2   Occupational Characteristics Of The Respondents

The posts held by the nurses who returned completed questionnaires are shown in Table 8.3.

TABLE 8.3

Numbers And Posts Held By Nurses Who Returned Questionnaires
(N=168)

Enrolled Nurse	Staff Nurse	Ward sister/ Charge Nurse	Clinical nurse/ Nurse Specialist
26 (15.5%)	98(58.3%)	42(25.0%)	2(1.2%)

When the chi square test was applied to the data relating to the posts held by the nurses in the sample and in the population as presented in Tables 8.1 and 8.3, no significant difference was found (χ^2 = 7.77; Degrees of freedom = 3; p > 0.1). This suggests that the sample who returned completed questionnaires can be regarded as being representative of the population in relation to the posts held by the nurses.

The wards in which the nurses worked are shown in Table 8.4.

TABLE 8.4

Types Of Ward In Which The Nurses Worked
(N=168)

Ward	n	(%)
Medical	42	(25.0%)
Surgical	33	(19.6%)
Accident and emergency	10	(6.0%)
Orthopaedic	14	(8.3%)
Elderly care	14	(8.3%)
Other Specialties	55	(32.7%)

When the chi square test was applied to the data presented in Tables 8.2 and 8.4, no significant difference was found between the types of wards on which the nurses worked in the sample and in the population (χ^2 = 3.20; Degrees of freedom = 5; p > 0.1). The result suggests that the sample who responded to the questionnaire can be regarded as being representative of the population in relation to the wards where the nurses worked.

8.7.3 Nurses' Practice In Relation To Assessment Of Their Patients' Alcohol Consumption ·

The results shown in Table 8.5 are to the items which asked nurses how often they ask patients about alcohol consumption and other lifestyle factors.

TABLE 8.5

Frequency With Which Nurses Ask Patients About Alcohol Consumption

	Always	Often	Occasionally	Never
Alcohol consumption	126(75.4%)	26(15.6%)	12(7.2%)	3(1.8%)
Diet	147(88.0%)	10(6.0%)	7(4.2%)	3(1.2%)
Smoking	147(88.0%)	14(8.4%)	1(0.6%)	4(2.4%)
Exercise	34(20.4%)	33(19.8%)	68(40.7%)	30(18.0%)

When asked if they believe that it is important for nurses to know how much their patients drink, 110 (65.5%) nurses reported that it is very important for them to know this. 56 (33.3%) regarded it as being important and 2 (1.2%) reported that it was not important.

8.7.4 Nurses' Knowledge Of Standard Units Of Alcohol

The nurses were asked in Item 12 to state the quantity of different alcoholic beverages contained in one standard unit. Their responses are given in Table 8.6

TABLE 8.6
Nurses' Knowledge Of Standard Units Of Alcohol

	Correct	Wrong	Don't know	Missing data
Whisky	88(52.4%)	46(27.4%)	20(11.9%)	14(8.3%)
Wine	84(50.0%)	53(31.5%)	19(11.3%)	12(7.1%)
Sherry	72(42.9%)	53(31.5%)	23(13.7%)	20(11.9%)
Beer	71(42.3%)	63(37.5%)	19(11.3%)	15(8.9%)

These data were then analysed according to whether the nurses had trained before or after 1984. The reason for selecting this date was that in 1984 the Medical Council on Alcohol produced a handbook on alcohol and health as a teaching resource for nurses, health visitors and midwives (Manson and Ritson, 1984). Included within the handbook is an explanation of the measurement of alcohol in standard units. Also in 1984, the Health Education Council published the first edition of "That's the Limit: a Guide to Sensible Drinking". This pamphlet was widely distributed and gave information about standard units of alcohol. Suggested limits for sensible drinking were also given. For these reasons, it was felt that the nurses who had trained after 1984 would have been more likely to have been given information during nurse training about standard units of alcohol and sensible drinking limits than those who had trained earlier.

TABLE 8.7

Analysis Of Nurses' Knowledge Of Standard Unit Equivalent For Whisky By Training Dates

	Prior to 1984	1984-1990
Correct	55	30
Wrong/don't know	40	25

Chi-square	Degrees of freedom	Significance
0.52	1	.82

TABLE 8.8

Analysis Of Nurses' Knowledge Of Standard Unit Equivalent For Wine By Training Dates

	Prior to 1984	1984-1990
Correct	54	27
Wrong/don't know	44	29

Chi-square	Degrees of freedom	Significance
0.43	1	.51

TABLE 8.9

Analysis Of Nurses' Knowledge Of Standard Unit Equivalent For Sherry By Training Dates

	Prior to 1984	1984-1990
Correct	45	24
Wrong/don't know	49	28

Chi-square	Degrees of freedom	Significance
0.00	1	.98

TABLE 8.10

Analysis Of Nurses' Knowledge Of Standard Unit Equivalent For Beer By Training Dates

	Prior 1984	1984-1990
Correct	40	29
Wrong/don't know	56	27

Chi-square	Degrees of freedom	Significance
1.08	1	.30

The results which are presented in Tables 8.7 to 8.10 suggest that the ability to state the amount of alcohol which is contained in any of these beverages was not associated with whether the nurses had trained before or after 1984.

The nurses were asked if they had acquired knowledge about the alcohol content of different drinks from education during nurse training, post-registration/enrolment experience or experience outwith nursing. The results are given in Table 8.11.

TABLE 8.11

Sources Of Knowledge About Standard Units Of Alcohol

	Yes	No	Missing
Nurse training	36(21.4%)	45(26.8%)	87(51.8%)
Post registration/enrolment experience	43(25.6%)	38(22.6%)	87(51.8%)
Experience outwith nursing	119(70.8%)	10 (6.0%)	39(23.2%)

As can be seen from the above table, the majority of nurses (70.8%) reported having acquired this knowledge from sources outwith nursing. Chi square analyses of the responses to each of the three sources of knowledge produced statistically significant results only when the nurses reported having gained the information from sources outwith nursing. These results are shown in Tables 8.12. Cases for which data were missing were not included in the analyses.

TABLE 8.12

Analysis Of Sources Of Knowledge About Standard Units Of Alcohol

	Yes	No	χ^2	D.F.	p-value
Nurse training	36	45	1.0	1	.32
Post-reg experience	43	39	0.20	1	.70
Outwith nursing	119	10	92.01	1	.001

A significant majority of nurses therefore reported having gained knowledge about standard units from sources outwith nursing.

8.7.5 Nurses' Education And Knowledge Of Sensible Drinking Limits

The nurses were asked in an open-ended format in Item 14 to state the sensible weekly levels of alcohol consumption for men and women as recommended by the Health Education Authority. These levels were adopted by the Health Education Authorities for England and for Scotland from information in the reports of the Royal College of Physicians (1987) and the Royal College of General

Practitioners (1986). The limits which are given below indicate the relative risk to health which is associated with different levels of alcohol consumption according to the reports of the Royal Colleges.

Risk	Men	Women
High	50 units/wk or more	35 units/wk or more
Moderate	21 - 50 units per wk	14 - 35 units/wk
Low	Less than 21 units/wk	Less than 14 units/wk

(Reference: Anderson, P., Wallace, P. and Jones H. (1988)   Alcohol Problems. Oxford University Press.)

The results derived from this item of the questionnaire are shown in Tables 8.13.

TABLE 8.13
Nurses' Knowledge Of Sensible Limits

For Men	n	For Women	n
>50 units	-	>35 units	-
50 units	-	35 units	-
36-49 units	1 (0.6%)	22-34 units	3 (1.8%)
35 units	2 (1.2%)	21 units	4 (2.4%)
22-34 units	9 (5.3%)	15-20 units	5 (3.0%)
21 units	70 (41.7%)	14 units	71 (42.2%)
<21 units	55 (32.7%)	<14 units	54 (32.1%)
Don't Know	17 (10.2%)	Don't Know	13 (7.7%)

The data from the nurses who identified 35 or 21 units per week as sensible drinking limits for men and the "don't know/wrong" values, were analysed with whether the nurses had trained before or after 1984. The corresponding analysis for the nurses' responses regarding sensible limits for women was also conducted. The results of the chi square analyses are presented in Tables 8.14 and 8.15.

TABLE 8.14

Analysis Of Nurses' Knowledge Of Sensible Drinking Limits For Men With Nurses' Training Dates

	Prior to 1984	1984-1990
35 or 21 units per week	39	33
Wrong/don't know	60	22

Chi-square	Degrees of freedom	Significance
6.03	1	.02

TABLE 8.15

Analysis Of Nurses' Knowledge Of Sensible Drinking Limits For Women With Nurses' Training Dates

	Prior to 1984	1984-1990
21 or 14 units per week	40	35
Wrong/don't know	56	19

Chi-square	Degrees of freedom	Significance
7.41	1	.01

The results presented in Tables 8.14 and 8.15 suggest that there was a significant trend for nurses who had trained since 1984 to be able to give the levels of alcohol consumption which were recommended by the Health Education Board as guidelines for sensible drinking for both men and women. As shown in Table 8.13, considerably more nurses gave under-estimates than over-estimates of the limits.

The nurses were asked to give the sources of knowledge about sensible drinking limits. The results are given in Table 8.16.

TABLE 8.16

Sources Of Knowledge About Sensible Drinking Limits

	Yes	No	Missing
Nurse training	26(15.5%)	109(64.9%)	33(19.6%)
Post registration/enrolment experience	29(17.3%)	107(63.7%)	32(19.0%)
Experience outwith nursing	111(66.1%)	26(15.4%)	31(18.5%)

The chi square analyses which are given in Table 8.17 pertain to the data which are presented in Table 8.16.

TABLE 8.17

Analysis Of Sources Of Knowledge About Sensible Drinking Limits

	Yes	No	χ^2	D.F.	p-value
Nurse training	26	109	51.03	1	.001
Post-reg experience	29	107	44.74	1	.001
Outwith nursing	111	26	52.74	1	.001

The chi square tests which are shown in Table 8.17 indicate that a statistically significant proportion of nurses reported that they had not learned about sensible drinking levels on either pre- or post-registration training or experience. It was also clear that they were more likely than not to have reported gaining this knowledge from experience outwith nursing.

8.7.6 Nurses' Education And Knowledge Of Alcohol-Related Health Problems

The nurses were asked if they had ever received education about the physical, psychological and social effects of excessive alcohol consumption. The results are given in Table 8.18. Chi square analyses were applied to the data for each variable.

TABLE 8.18

Analyses Of Nurses' Reports Of Education About Physical, Psychological And Social Effects Of Excessive Alcohol Consumption

	Yes	No	Cannot remember	χ^2	D.F.	p-value
Physical	107	47	12	83.43	2	<.001
Psychological	103	49	14	72.66	2	<.001
Social	101	53	12	71.72	2	<.001

These results indicate that a statistically significant proportion of the nurses who responded to the questionnaire reported having received education about physical, psychological and social effects of problem drinking.

The chi square test was applied to the nurses' training dates and to whether they reported having received education about the physical, psychological and social effects of excessive alcohol consumption. The results are shown in Tables 8.19 to 8.24.

TABLE 8.19

Analysis Of Education About Physical Health Problems With The Nurses' Training Dates

Dates of Training	Yes	No
Prior to 1960	-	5
1961-1970	3	7
1971-1980	27	16
1981-1990	76	19

Chi square	Degrees of Freedom	Significance
24.51	3	p = .0001

These data were analysed according to whether or not the nurses had trained within the ten years prior to administration of the questionnaire. The results are shown in Table 8.20.

TABLE 8.20

Analysis Of Education About Physical Health Problems With The Nurses'
Training Dates
(2X2 Table)

Dates of training	Yes	No
Prior to 1980	30	28
1981-1990	76	19

Chi-square	Degrees of Freedom	Significance
12.23	1	p = .0005

The same analyses were applied to the nurses' responses to the items which concerned their education about psychological and social effects of excessive alcohol consumption.

TABLE 8.21

Analysis Of Education About Psychological Problems With The Nurses'
Training Dates

Dates of training	Yes	No
Prior to 1960	-	5
1961-1970	2	7
1971-1980	26	18
1981-1990	74	19

Chi square	Degrees of Freedom	Significance
26.41	3	p =.001

TABLE 8.22

Analysis Of Education About Psychological Problems With The Nurses' Training Dates

(2x2 Table)

Dates of training	Yes	No
Prior to 1980	28	30
1981-1990	74	19

Chi-square	Degrees of Freedom	Significance
14.56	1	p = .0001

TABLE 8.23

Analysis Of Education About Social Problems With The Nurses' Training Dates

Dates of training	Yes	No
Prior to 1960	-	5
1961-1970	2	7
1971-1980	24	19
1981-1990	74	22

Chi square	Degrees of Freedom	Significance
24.39	3	p =.001

TABLE 8.24

Analysis Of Education About Social Problems With The Nurses' Training Dates

(2x2 Table)

Dates of training	Yes	No
Prior to 1980	26	31
1981-1990	74	22

Chi-square	Degrees of Freedom	Significance
14.28	1	p = .0002

The analyses suggest that those nurses who trained more recently were more likely to have reported receiving education about alcohol-related problems. This was the case for education about all three aspects of health associated with excessive drinking.

The nurses were asked in an open question (Item 10) to list the health problems which they knew could result from drinking too much.

In an article on the early identification of alcohol problems, Holt et al (1981) classified clinical symptoms and signs as either early or late indicators of alcohol abuse. The authors listed 19 problems which were classified as occurring at an early stage, two as being either early or late problems and 22 which were associated with a long-standing history of heavy drinking.

The problems which were listed by the nurses in this study were coded as early or late according to the criteria described by Holt et al (1981). However, several of the alcohol-related problems which were identified by the nurses were open to interpretation as either early or late indicators. For example, Holt et al suggested that acute pancreatitis is a feature of early problem drinking, whereas chronic pancreatitis is a late sign of alcohol abuse. 3 (1.8%) nurses listed acute pancreatitis as an alcohol-related health problem, 3 (1.8%) also listed chronic pancreatitis and 41 (24.8%) mentioned pancreatitis without specifying whether they meant acute or chronic.

The total number of alcohol-related health problems listed by the nurses, the numbers of early problems, late problems and those problems which could be construed as either early or late, are shown in Table 8.25.

TABLE 8.25
Category Of Alcohol-Related Health Problems Listed By The Nurses

	Range	Mean	S.D.
Total no. problems	0 -15	5.51	2.56
Early problems	0 - 6	1.31	1.41
Late problems	0 - 8	3.02	1.91
Early OR late problems	0 - 5	1.19	1.12

One-way analyses of variance were applied to the enrolled nurses', staff nurses' and ward sister/charge nurses' data for the variables which were presented in Table 8.25.

No effects were found for the posts held by the nurses for any of these variables. This was also the result when the number of problems which the nurses reported were analysed with the nurses' dates of training, suggesting that the ability to recall alcohol-related problems was not related to the nurses' designation or to the nurses' training dates.

When the paired t-test was applied to the numbers of early and late problems which were listed, it was found that the nurses had named significantly more late alcohol-related health problems than early problems ($t = -10.5$; d.f.$= 167$; $p = .001$).

The nurses were asked if this knowledge had been acquired as a result of nurse training, post-registration/enrolment experience or experience outwith nursing. This information was sought in three separate items. It was therefore not a "forced choice" format and the participants had the opportunity to respond to all three items. The results of the chi square analyses of these data are given in Table 8.26.

TABLE 8.26
Analysis Of Sources Of Knowledge Of Alcohol-Related Problems

	Yes	No	χ^2	D.F	p-value
Nurse training	123	11	99.56	1	.001
Post-reg experience	118	8	93.61	1	.001
Outwith nursing	82	18	40.96	1	.001

These results suggest that the significantly more nurses reported having gained this knowledge as a result of nurse training or post-registration experience than did not. They were also significantly more likely to have reported having gained the experience outwith nursing than not.

No statistically significant effect was found when the numbers of problems which the nurses reported were analysed by one-way analysis of variance with whether nurses' reported that this knowledge had been gained from nurse training, post-registration/enrolment experience or experience outwith nursing (F ratio = 1.25, p = .29).

The health problems which the nurses suggested are caused by excessive alcohol consumption are given in Table 8.27 in order of frequency with which the condition was mentioned.

TABLE 8.27
Alcohol-Related Health Problems Listed By The Nurses

Health problem	Number of nurses who quoted the problem
Liver problems:	159 (94.6%)
Neurological problems:	111 (66.1%)
Psychiatric problems:	73 (43.4%)
Nutritional problems:	62 (36.9%)
Cardio-vascular problems:	52 (31.0%)
Gastric disorders:	54 (32.2%)
Pancreatitis:	44 (26.2%)
Withdrawal symptoms:	41 (24.4%)
Accident proneness:	28 (16.7%)
Increased risk of cancers:	17 (10.1%)
Social problems:	11 (6.5%)
Foetal abnormalities:	11 (6.5%)
Skin problems:	9 (5.4%)
Fertility problems:	8 (4.8%)
Blood disorders:	7 (4.2%)
Insomnia:	4 (2.4%)
Increased risk of infection:	2 (1.2%)

8.7.7   Nurses' Perceptions Of Their Role In Relation To Giving Advice To Problem Drinkers About Their Drinking

The nurses were asked who, in their opinion, should give advice to patients whose drinking is causing them health problems. The results are given in Table 8.28.

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TABLE 8.28

Nurses' Opinions Of Which Health Care Professionals Should Give Advice To Problem Drinkers

Doctors	162 (96.4%)
Registered General Nurses	148 (88.1%)
Registered Mental Nurses	147 (87.5%)
Enrolled Nurses	128 (76.2%)
Psychologists	139 (82.7%)
Social workers	121 (72.0%)

The majority of nurses therefore clearly indicated that they regarded themselves, in addition to other health care professionals, as having a role in giving advice to problem drinkers.

8.7.8 Nurses' Practice In Relation To Giving Advice To Problem Drinkers About Their Drinking

When asked in Item 4 if they gave advice to problem drinkers, 17 (10.1%) said that they always gave advice to patients whom they believed were drinking excessively, 37 (22.0%) reported that they often gave advice, 76 (45.2%) occasionally gave advice and 36 (21.4%) never gave advice.

When these data were analysed according to the nurses' qualifications, significantly more Registered Nurses than Enrolled Nurses reported that they give advice to problem drinkers (χ^2 = 8.9; D.F. = 1; p = .003). There was no significant difference between the staff nurses' and ward sister/charge nurses' responses (χ^2 = 1.1; D.F. = 1; p = .30). For the purpose of these analyses, the data which were derived from nurses who always or sometimes give advice were pooled. The data which were derived from the responses from those who only occasionally or never give advice to problem drinkers were also pooled.

8.7.9 Nurses' Education In Relation To Giving Advice To Problem Drinkers About Their Drinking

The nurses were asked if, as student nurses, they had been taught what advice to give to problem drinkers. 25 (14.9%) of the nurses reported that they had been taught

about this, 106 (63.1%) said that they had not been taught, and 34 (20.2%) could not remember having been taught about this. When the chi-square test was applied to these data with the nurses' dates of training, no significant association was shown. The results are presented in Table 8.29.

TABLE 8.29
Analysis Of Whether Nurses Had Been Taught To Give Advice To Problem Drinkers By Nurses' Training Dates

	Prior to 1961	1961-1970	1971-1980	1981-1990
Yes	-	1	3	21
No	5	6	32	62
Can't remember	-	3	9	21

Chi-square	Degrees of freedom	Significance
7.97	6	.76

The data from nurses who had trained before 1980 were pooled and the chi square analysis was applied to the data in a two-by-two table as shown in Table 8.30. The data from the nurses who could not remember having been taught what advice to give were excluded from this analysis.

TABLE 8.30
Analysis Of Whether Nurses Had Been Taught To Give Advice To Problem Drinkers By Nurses' Training Dates
(2x2 Table)

	Prior to 1981	1981-1990
Yes	4	21
No	43	62

Chi-square	Degrees of freedom	Significance
4.42	1	.04

The results show that, although a minority of nurses reported having received education about what advice they should give to problem drinkers, a significantly

greater proportion of the nurses who trained after 1980 reported that they had received such education.

The cross-tabulation which is presented in Table 8.31 shows the nurses' responses to the item which asked if, as students, they had been taught what advice they should give, with the data on how frequently they do give advice to patients whose alcohol consumption they believe to be excessive.

TABLE 8.31

Cross-Tabulation Of Nurses' Practice Of Giving Advice To Problem Drinkers And The Nurses' Reports Of Having Been Taught What Advice To Give

	Had received training	Had received no training
Always give advice	5 (3.0%)	10 (5.9%)
Often give advice	9 (5.3%)	18 (10.7%)
Occ. give advice	10 (5.9%)	54 (32.1%)
Never give advice	1 (0.6%)	22 (13.1%)

The data which were derived from nurses who always or sometimes give advice were pooled. The data which were derived from the responses from those who only occasionally or never give advice to problem drinkers were also pooled. The chi square test was applied to each set of pooled data with the data on whether or not they had reported having received the relevant training. The results are presented in Table 8.32.

TABLE 8.32

Analysis Of Nurses' Practice Of Giving Advice To Problem Drinkers With Their Reports Of Having Been Taught What Advice To Give
(2x2 Table)

Gives Advice	Had received training	Had not received training
Always/often	14	28
Occ/never	11	76

Chi-square	Degrees of freedom	Significance
6.49	1	.01

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These results indicate that the majority of nurses reported that they had not received training in what advice to give to problem drinkers. Furthermore, they were significantly less likely to give advice when they had not been trained to do so.

8.7.10 The Availability Of Appropriate Health Education Literature For Nurses To Give To Problem Drinkers

27 (16.1%) of the nurses reported that leaflets about how to reduce alcohol consumption were available for patients, compared with 135 (80.4%) who said that such leaflets were not available where they worked. Corresponding figures about the availability of leaflets which gave information about sources of further help for problem drinkers were 40 (23.8%) and 124 (73.8%) respectively.

The results suggest that the majority of nurses reported that neither type of leaflet was available but that there were rather more leaflets which give sources of further help.

8.8 DISCUSSION

8.8.1 Response Rate

As was reported in Section 8.7.2, the sample was shown to be representative of the population in relation to the posts held by the nurses and the wards where they worked. It is therefore possible to make generalisations from the results of this study.

8.8.2 Nurses' Practice In Relation To Assessment Of Their Patients' Alcohol Consumption

91% of the nurses reported that they often or always ask patients about their alcohol consumption. This figure is much greater than 56%, which is the equivalent percentage reported by Rowland and Maynard (1989) from their study which was conducted in 1987. Several factors may account for the discrepancy. It may reflect a greater awareness among nurses working in Glasgow of the potential influence of alcohol on health as a result of local health promotion initiatives, eg. the "Good-Hearted Glasgow" project, the "Healthy Cities" project and the "Feel Better about Glasgow" campaign.

The nurses were not invited to specify what they ask about their patients' drinking habits. It is therefore not possible to ascertain from this part of the study whether nurses quantify their patients' level of alcohol consumption or frequency of drinking occasions, both of which are important factors in assessing problem drinking (Hartz et al, 1990).

This was, however, investigated as part of the study which was reported in Section 6.5.6 of Chapter Six. The nursing notes of the patients who had participated in the screening procedure, were examined to establish the nature of the record of assessment of patients' alcohol consumption. This was in addition to the data which were derived from administration of the screening instrument by the author.

The notes revealed that, in 39.8% the record was expressed in descriptive terms, for example "social drinker" or "heavy drinker". In 27.8% cases, the record was quantified but 32.4% records contained no alcohol history. In 15.6% of cases, the record was within 4 units of the estimate which was derived from the retrospective drinking diary which constituted part of the structured interview schedule.

The results of the procedures which were conducted to establish the validity of the structured interview schedule, and also of the association between level of alcohol consumption and the prevalence of alcohol-related problems, suggest superior validity of the author's assessment of alcohol consumption to that of the nurses' whose notes were recorded.

The nurses' highly positive response to the question in the survey about assessment may have been a function of having been asked a question to which the participants' felt that they ought respond in a particular way.

8.8.3   Nurses' Education And Knowledge Of Standard Units Of Alcohol

In order for nurses to be able to accurately assess patients' levels of alcohol consumption, they need to be able to calculate this in a standard way. This requires them to know the alcohol content of different alcohol beverages as calculated in standard units of alcohol. The results which were presented in Tables 8.6 to 8.10 indicated that a large proportion of nurses were not equipped with this knowledge, irrespective of when they had trained.

In a general population survey in which public awareness of the equivalences of various drinks was investigated, 24%, 32% and 28% respectively were aware that one unit of alcohol is contained in one pub measure of spirits, a glass of wine and a half-pint of beer (Lord President's Report on Action Against Alcohol Misuse, 1991). As shown in Table 8.6, the corresponding results from this survey are 52%, 50% and 42% respectively. Nurses, therefore, appear to be better informed than the general public, but as health care professionals, they ought to be more familiar with this information so that they can standardise their assessments of how much their patients drink. Such knowledge also forms the basis of appropriate advice for problem drinkers and would enable nurses to teach patients how to calculate how much they drink. It would also prepare them to teach patients how to cut down their drinking by changing drinks, e.g., from beer of 5% alcohol content by volume (ABV) to 3% (ABV) beer.

It was noted that nurses' ability to express the alcohol content of drinks in standard units was not related to how recently they had trained. The fact that there was no significant difference between the nurses reports that they had or had not learned about this during either pre- or post-registration training, suggests that a gap exists in the curriculum which should be addressed.

8.8.4 Nurses' Education And Knowledge Of Sensible Drinking Limits

If nurses do calculate how much their patients drink, they need to be able to use the information in a meaningful way. They require knowledge of the levels of alcohol consumption which are considered to be associated with harm. It was therefore considered necessary to investigate nurses' knowledge of the accepted sensible limits of consumption for men and for women. A further reason for establishing whether nurses possess this knowledge was that it has been suggested that information about sensible drinking limits should be provided to problem drinkers as part of a minimal intervention strategy (Anderson and Scott, 1992; Hartz et al,1990).

As was shown in Tables 8.14 and 8.15, the majority of nurses were unable to quote the arbitrary levels below which the Health Education Boards suggest as guidelines for sensible drinking. Table 8.13 showed that, of the nurses who were unable to recall the levels of 21/14 units, the majority underestimated the levels and erred on the low side. This finding was consistent with that of Kemm and Rowe (1992).

Although a statistically significantly greater number of nurses reported that they had not learned about sensible drinking limits as a result of nurse training, there was evidence to suggest that the nurses who had trained since 1984 were more likely to be aware of this information. However, if such limits are to be used as a general guide for advice about sensible drinking, nurses' knowledge of this information is currently inadequate.

8.8.5 Nurses' Education And Knowledge Of Alcohol-Related Health Problems

63.7% of nurses reported that they had received education about alcohol problems. This contrasts with results reported by Hartz (1991) in her study of community nurses. In her study, 65% of the nurses surveyed said that as, student nurses, they had not received alcohol education.

In the study which is reported in this thesis, the nurses who had trained during the previous ten years were even more likely to have reported that they had received education in each of the three aspects of health (Tables 8.19 to 8.24). However, when their knowledge was tested by asking them to list health problems which are associated with excessive drinking, no statistically significant effect for the nurses' training dates was found. It may be that those nurses who had trained before 1980 had learned this as a result of their longer clinical experience.

The nurses listed significantly fewer early alcohol-related problems than late problems. Early intervention requires the recognition of early indicators, rather than of problems which are associated with prolonged heavy drinking. Nurses therefore need to become better informed about of early alcohol problems to prepare them for this area of their work.

8.8.6 Nurses' Practice In Relation To Giving Advice To Problem Drinkers About Their Drinking

As shown in Table 8.28, 88% of the respondents reported that they were of the opinion that Registered General Nurses should give advice to patients whose drinking is causing them health problems.

However, only 32.1% of the nurses said that they said that they always or often give advice to such patients and only 14.9% reported that they had been taught during their basic training what advice they should give to these patients. These results suggest that the majority of the nurses who returned the questionnaires feel that they ought to have a role in advising patients about their drinking but relatively few do so, not having been trained for such a role. A causal link cannot, however, be assumed. The nurses views in this study are endorsed by the findings of a report from the King's Fund that a deficit in nurses' training in communication skills constitutes a major obstacle to their ability to be health educators (Whitehead, 1989)

Despite feeling that they lack the necessary training, a small proportion of nurses did report that they give advice to problem drinkers. The results which are presented in Table 8.32 indicate that those who reported that they had been trained to give problem drinkers advice, were significantly more likely to do so than those who had not received education in this area. It may be that if the provision of such training were to be introduced to all student nurses, more would put this into practice when working as Registered Nurses.

Although the majority of nurses reported that they had not been taught what advice they ought to give to problem drinkers, proportionately more of those who trained during the previous ten years reported having received education about this.

8.8.7   The Availability Of Appropriate Health Education Literature For Nurses To Give To Problem Drinkers

The majority reported having no access to either leaflets about sources of help or those which give information about how to reduce alcohol consumption. The nurses reported those which give information about sources of help were more readily available than the latter. It may be that such leaflets were indeed available, but that the nurses were unaware of where supplies of such leaflets could be found.

8.9   CONCLUSIONS

The main conclusions which can be drawn from the study are that, among the nurses who returned completed questionnaires there was general agreement that it is important for nurses to ask patients' about alcohol consumption. This was reflected

in nursing practice as reported by the nurses, but was contradicted by evidence of the practice of nurses in one of the hospitals.

The majority of nurses demonstrated inadequate knowledge of the concept of the standard unit of alcohol or of the accepted sensible limits of alcohol consumption to enable them to provide this information to patients. The majority did, however, possess knowledge of alcohol-related health problems associated with prolonged drinking but require to become better informed about early alcohol problems. This should help them to fulfil their patient education role. The results which are shown in Table 8.26 refer to the source of the nurses' knowledge of alcohol-related health problems. It appears, that although most nurses acknowledge that they learned about alcohol problems during training, they continue to build on this knowledge as a result of their nursing experience and, to a lesser extent from experience gained outwith nursing.

The majority of nurses recognised that it is appropriate for nurses to give advice to problem drinkers but only a minority reported doing so in practice. They did not consider that they have been adequately trained to fulfil this role. In addition, alcohol-related health education literature was not available for the majority of nurses to give to patients at ward level. The results of this study suggest that if nurses are to develop a role in the secondary prevention of alcohol problems the deficits in their education and practice need to be addressed. It may be that, as alcohol problems have traditionally been treated within specialist psychiatric services, so the teaching of alcohol problems and treatments of such have remained the responsibility of specialist or psychiatric nurse teachers. However, alcohol problems affect almost every aspect of health. Teaching about the relationship between alcohol and health ought to be an integral part of the entire curriculum and be within the remit of all who teach about health care.

CHAPTER NINE

SUMMARY AND CONCLUSIONS

9.1   INTRODUCTION

The investigation which has been described in this thesis was conducted as five discrete studies. Chapters Four, Five, Six, Seven and Eight contain details of each project. In each of these Chapters, the presentation of data, statistical analyses and discussion of the results relate only to the study which was the subject of that Chapter. No overall appraisal of the entire project has therefore been undertaken in earlier Chapters.

Within this Chapter, the findings of the individual studies are summarised to provide an overview of the investigation. The implications of the results from each of the studies are discussed so as to establish links between each study and to enable conclusions to be drawn with regard to the progression of the investigation at each of its stages. An assessment is made of how the findings relate to the aims which were described in Chapter One and conclusions are drawn from the overall findings. Issues raised by the results of the investigation are discussed.

9.2   SUMMARY OF THE INVESTIGATION

9.2.1   Purpose

The purpose of the investigation was to evaluate the effectiveness of three forms of minimal intervention as treatments of problem drinking and to assess the role and education needs of general hospital nurses for work in this area.

It was considered necessary to carry out five studies in order to conduct the overall investigation. These studies were identified in Chapter Three as:

1.   A psychometric analysis of the properties of the interview schedule which was devised by Chick et al (1985) to detect problem drinkers in a general hospital in-patient population.

2. A study of the reliability of the interview schedule when used by two different interviewers.

3. A study of the identification of potential problem drinkers among general hospital patients using self-report and biological data.

4. An evaluation of the effectiveness of three forms of minimal intervention for potential problem drinkers.

5. An investigation of factors which influence the role of nurses in the treatment of potential problem drinkers in general hospital wards.

9.2.2 Psychometric Analysis Of The Properties Of The Interview Schedule

This study was reported in Chapter Four of the thesis. It was decided to analyse the psychometric properties of the interview schedule which had been devised by Chick et al (1985) for the detection of problem drinkers in a general hospital in-patient population. The psychometric analysis was conducted to evaluate the instrument's internal consistency for use as an assessment tool for the identification of potential problem drinkers in the study which was described in Chapter Six. It was considered important that the tool should be of practical value to nurses working in busy hospital wards and therefore should be as brief as possible. A further purpose of the psychometric analysis was therefore to determine whether the overall length of the schedule could be reduced without diminishing its performance.

The analysis consisted of carrying out cluster and factor analyses of the data derived from the schedule, and then estimating the alpha-coefficients of each cluster or factor as described by McKennell (1970) and Nunnally (1978).

Eight factors were identified and, as a result of the analysis and the substantive reasons for retaining or discarding items the length of the interview schedule was reduced from 37 to 16 items. Alpha-coefficients of the original eight factors ranged from .95 to .48. After discarding items, the alpha-coefficients were reduced to .96 at the highest, to .62 in the lowest factor.

It was thus demonstrated that the interview schedule could be utilised as a screening instrument after modification as suggested in Chapter Four.

9.2.3 The Reliability Of The Interview Schedule When Used By Two Different Interviewers

The purpose of the study which was reported in Chapter Five was to investigate the inter-rater reliability of the interview schedule when administered by both the author and the research assistant who was employed to conduct the follow-up interviews. This was considered important in order to establish that the potential for interviewer bias to influence the results of the study of minimal interventions had been minimised.

The research assistant was first trained in the use of the schedule prior to conducting the study.

The interview schedule was then administered to a sample of 40 general hospital in-patients by each interviewer to the same subjects with an interval of seven days between interviews. As described in Section 5.4 precautions were taken to ensure that the order in which the subjects were interviewed by each interviewer did not affect the outcome.

The correlation co-efficient of .95 demonstrated a high association between the responses of patients to each interviewer when asked to recount the amount of alcohol which they had consumed during the week prior to admission to hospital. As shown in Tables 5.1 to 5.10, there was a high degree of agreement between the responses to the two interviewers.

It was therefore decided that the follow-up interviews could proceed in the knowledge that it had been demonstrated that data derived from the interview schedule when administered by the research assistant and the author could be considered to be reliable.

9.2.4 The Identification Of Potential Problem Drinkers Among General Hospital Patients Using Self-Report And Biological Data

The study which was described in Chapter Six was undertaken to identify potential problem drinkers among a general hospital in-patient population. The screening

procedure which was used to identify the subjects consisted of the interview schedule, which had been refined as a result of the psychometric analysis described in Chapter Four, and three biological measures (GGT, AST and MCV).

Of the 998 patients screened, 245 patients, between the ages of 18 and 80 years, reported their previous (or a typical) week's level of alcohol consumption as being in excess of the limit which had been set for inclusion in the study. Of these 245 individuals, 153 were identified as potential problem drinkers who drank regularly, and who had not previously received treatment for an alcohol problem. This constituted a detection rate of 15.3% of the population which had been screened.

Concurrent validity of the interview schedule was assessed by the Alcohol Use Disorders Identification Test (AUDIT), which was devised for the World Health Organization as a screening test for the detection of problem drinkers. The AUDIT was administered to all patients who satisfied the inclusion criteria. A high degree of association between the instruments was demonstrated ($r = 0.80$, $p<0.001$).

The reliability of the screening interview schedule was further confirmed when the alcohol-related problem scores of the heavy drinkers was compared with the scores accrued by the light drinkers (i.e., men who reported drinking less than 21 units per week, and women who reported drinking less than 14 units per week). As was reported in Section 6.5.9 of Chapter Six, the problem drinkers reported a statistically highly significant greater mean number of problems than the light drinkers ($p < .001$).

Estimations of MCV, GGT and AST were used to provide objective support for the self-report data. Pearson product moment correlation co-efficients were computed for the reported alcohol consumption for the previous week with GGT, AST and MCV values. The results of the correlations of data of reported levels of alcohol consumption by the problem drinkers, and also of a combined sample of light and heavy drinkers with GGT, AST and MCV reached the level of statistical significance. The correlation co-efficients, however, were low. Corresponding analyses of data from the light drinkers were not significant.

9.2.5 Evaluation Of Minimal Interventions For Potential Problem Drinkers Among General Hospital Patients

Chapter Seven described a controlled study which was designed to evaluate the relative effectiveness of three forms of minimal intervention as treatments for alcohol problems with a no-treatment control condition. The subjects of the investigation were the patients who had been newly identified as potential problem drinkers as outlined in Sections 6.5.2 and 7.4.2.1.

The study involved the allocation of patients to experimental treatment groups for the administration of the minimal interventions as described in Section 7.2.1 of Chapter Seven.

The follow-up data were collected one year after the initial interviews by the research assistant who had participated in the study of inter-rater reliability of the interview schedule. She was "blind" to the experimental treatment group to which the patients had been assigned.

Evaluation of the effectiveness of the interventions was achieved by comparing the follow-up data with the baseline data which were presented in Chapter Six. The outcome measures which were analysed were self-report data which pertained to reported levels of alcohol consumption and the interview scores for alcohol-related problems, and the biological data.

9.2.5.1 Self-Report Data

Highly statistically significant effects for time were found across the entire sample, including the control group, for reports of the level of alcohol consumption ($p < .001$). There was no significant effect for group, nor was there an interaction between group and time. The same results were found when the interview scores for alcohol-related problems were analysed. The mean values for the entire sample of reported level of alcohol consumption and also of alcohol-related problems, therefore, were significantly lower at follow-up than at the initial screening, but no single group reported significantly greater reductions than any of the others.

9.2.5.2 Biological Data

Similar findings were made when the two liver enzymes were analysed. The two-way analysis of variance showed no effect for group when applied to the logarithms of the values for either GGT or AST. However, significant effects for time were found in both cases.

No effects for either time or group were evident when two-way analysis of variance was applied to the values for MCV.

9.2.5.3 Health Of The Follow-Up Sample

The majority of subjects reported that they had been in good health during the year following hospitalisation. When this was analysed statistically, no significant differences between the groups were found.

9.2.6 Investigation Of Factors Which Influence The Role Of Nurses In The Treatment Of Potential Problem Drinkers In General Hospital Wards

In Chapter Eight a survey was reported of practising nurses' views about their role in working with problem drinkers. Their knowledge of issues which relate to assessing problem drinking was also investigated.

It was found that the majority of respondents acknowledged the relevance to nurses of assessing their patients' drinking and of giving appropriate advice. However, it appeared that their knowledge of factors which underpin such practice was lacking. The data suggested that their education had been deficient in the areas of assessment and of appropriate advice to give to problem drinkers. On a more promising note, however, there was evidence to suggest that the more recently the nurses had trained, the better informed they were.

9.3 AIMS OF THE STUDY

The aims of the study were stated in Chapter One. These were to:

1. select or modify an existing tool for the purpose of identifying problem drinkers among general hospital in-patients.

2.	evaluate the relative effectiveness of

a)	a health education booklet designed for the specific purpose of giving advice to people whose drinking is in excess of recommended safe limits;

b)	personal advice about the effects of excessive alcohol consumption and how to reduce consumption;

c)	a combination of the booklet and the advice.

3)	investigate nurses' practice in relation to

a)	assessment of their patients' alcohol consumption;

b)	giving advice to problem drinkers about their drinking.

4)	investigate nurses' knowledge of

a)	standard units of alcohol;

b)	sensible limits of alcohol consumption;

c)	alcohol-related health problems.

5)	investigate whether nurses have the access to health education

a)	literature to give to problem drinkers.

**9.3.1	Aim 1:** To select or modify an existing tool for the purpose of identifying problem drinkers among general hospital in-patients

In order to evaluate the effectiveness of minimal interventions in the treatment of problem drinkers, it was firstly necessary to identify them. An instrument was therefore required for the purpose of detecting such patients within the study setting. As described in Chapter Three, it was important that the instrument be valid and reliable. It was also considered important that it should be of practical value to nurses whose remit is to assess the nursing needs of patients so that they can plan and deliver care for patients who present with a wide variety of health problems, the majority of which are not alcohol-related. Such an instrument requires to be brief, reliable and valid to enable nurses to recognise potentially harmful patterns of alcohol consumption.

The results of the psychometric analysis of the instrument, which had been designed by Chick et al (1985), were reported in Chapter Four. These results confirmed the reliability of the items which were retained. The validity of the shortened version of this instrument was confirmed by the high correlation which was found to exist between the responses of heavy drinkers to both this instrument and to the WHO AUDIT test as reported in Chapter Six. In addition, the reliability of the instrument was further confirmed by the results of the t-test which showed a highly significant difference between the mean number of problems reported by the light drinkers and those patients who had reported drinking in excess of the levels which were the required for recruitment to the study of minimal intervention.

When t-tests were applied to the biological data from patients who were light drinkers and the potential problem drinkers, the mean value for each of the markers was found to be lower in the group of light drinkers than in the potential problem drinkers. However, as shown in Table 6.3, the p-value for the analyses of the logarithms of GGT and AST approached the level of significance ($p = .07$) and MCV was the only marker for which the difference was found to be statistically significant ($p = .003$).

The retrospective drinking diary, which was incorporated into the instrument, provided the means of recruiting patients to the study of minimal interventions. As was reported in Chapter Six, 80.0% of the patients whose diary reports revealed a consumption level of more than the recommended "sensible level" also responded positively to at least one of the items of the interview schedule which related to experience of alcohol problems. 20.0% of those who were identified as problem drinkers by the retrospective drinking diary, therefore did not report experience of any alcohol-related problem.

Based on this evidence, if the diary alone were to be used as a tool for the recognition of potential problem drinkers, there is a risk of falsely identifying one in five cases. If the purpose of identifying potential problem drinking among general hospital in-patients is to administer minimal interventions, such as giving advice about sensible drinking or giving a health education pamphlet, the consequence of falsely identifying such individuals would consist of being advised about sensible drinking either verbally or in such a pamphlet. Since it is unlikely that either of these activities would cause serious adverse effects, the risks associated with identifying false positives are considered to be acceptable.

As described in Section 6.5.9, 22.5% of patients who reported drinking less than the criteria for identification of potential problem drinkers, reported experience of at least one alcohol-related problem during the previous year. If experience of even one alcohol-related problem constitutes problem drinking, the drinking diary therefore failed to detect 22.5% of potential problem drinkers. However, it is possible that individuals may have experienced such phenomena on at least one occasion during the previous year without developing serious consequences. Such individuals cannot necessarily be classified as problem drinkers. The patients who were identified by the diary as problem drinkers reported a significantly greater number of alcohol-related problems than the group for whom the diary had not detected problem drinking.

It is therefore recommended that the diary should be used by nurses as a tool for the recognition of potential problem drinkers. Those patients who are found to be drinking in excess of the limits which were set for the study, i.e., males who report drinking more than 21 units per week, and women whose weekly consumption is over 14 units, would merit further investigation using the remaining items of the instrument. Information derived from the interview could then form the basis for the provision of appropriate advice.

The measures described above relate only to self-report data, the nature of which is the subject of considerable debate in the literature. The study also included an investigation of the value of biological data as objective evidence to support self-report data. As shown in Table 6.2, the results of the correlations of reported levels of alcohol consumption by the problem drinkers with GGT, AST and MCV were found to be very low, despite reaching the level of statistical significance. Correlation coefficients of consumption levels with each of the biological indicators remained modest when analysed for the combined sample of light and heavy drinkers. The corresponding analyses of data from the light drinkers were not significant. The results did indicate some degree of association between levels of alcohol consumption and these tests but the correlation coefficients were not sufficiently high to permit conclusive statements to be made about the validity of these biological tests to detect problem drinking.

The finding which was reported in Chapter Six that there was a closer association between levels of alcohol consumption and MCV than was found to be the case for the liver enzymes was contradicted by the results of the follow-up study which were presented in Chapter Seven. The results of the follow-up study suggested that GGT

and AST corroborated the self-reports of both the level of consumption and of experience of alcohol-related problems.

The results reported in this study failed to provide conclusive support for the use of these biological indicators as objective confirmation of self-reports of harmful drinking levels. Based on evidence from this study, it would be most unwise to rely solely on such tests to detect drinking alcohol problems, particularly at an early stage. However, there was some evidence of a limited degree of association. It is proposed that the use of biological tests should be confined to monitoring the extent of change in reported drinking level.

9.3.1.1 Summary Of Extent To Which Aim 1 Has Been Achieved

This aim was achieved in that the interview schedule which was selected was shown to be appropriate for the purpose of identifying problem drinkers among general hospital in-patients. It was modified to improve its performance in a clinical situation where there is an opportunity for the detection of problem drinking, but where it is recognised that this is but one of a variety of many aspects of health assessment which needs to be addressed. It is recommended that the retrospective diary of alcohol consumption for the previous week should be used as the screening tool for the identification of potential problem drinkers, with the modified structured interview schedule forming the basis of further investigation for the detection of alcohol-related problems.

The case for the use of GGT, AST and MCV in detecting alcohol problems on their own was not made. Lack of specificity of these measures is considered to be a major contributing factor. However, in view of the modest relationship which was demonstrated between self-reported levels of alcohol consumption and these indicators, it is suggested that they may be of some limited value in corroborating change in self-report data.

9.3.2 Aim 2: To evaluate the relative effectiveness of:

a)   a health education booklet designed for the specific purpose of giving advice to people whose drinking is in excess of recommended safe limits;

b)   personal advice about the effects of excessive alcohol consumption and how to reduce consumption;

c)   a combination of the booklet and the advice.

d)   no treatment (i.e., control group).

The results of the study of the relative effectiveness of three forms of minimal intervention were discussed in Chapter Seven.

The results for the entire sample showed a highly significant reduction at follow-up in mean values for reported levels of alcohol consumption, experience of alcohol-related problems and both GGT and AST. However, there were no significant differences between groups, indicating that none of the interventions was more effective than no treatment. No significant changes were found in the levels of MCV.

As described in Section 6.3.4 of Chapter Six, given the magnitude of the between-group differences anticipated, the power calculation indicated that a sample size of 25 subjects per group would be required to show a statistically significant difference. In the event, follow-up data were available for fewer than 25 cases in two of the experimental groups. Consequently the results obtained may have been due to lack of statistical power in the test used. As a result, the number of subjects for whom follow-up data was available may have been insufficient to detect statistically significant changes.

The finding that all groups reported lower levels of alcohol consumption at follow-up is not confined to this study. As was noted in the review of the literature in Chapter Two, reported reductions in drinking levels was a feature of many of the studies of minimal interventions for problem drinkers.

One possible explanation for this is that the screening procedure itself acted as an intervention. It may be that the act of asking patients to give a detailed account of their drinking at a time when they are unwell, and in an environment which provides an opportunity for reflection, may cause them to become more sensitive to issues which relate to their health. These circumstances may be sufficient to raise patients' awareness of the potentially harmful effects of their alcohol consumption.

A further possible reason for both treatment and control groups reporting lower levels of consumption at follow-up may have been due to the effect of the constraints which are imposed on such studies by Ethical Committees. In order to be able to give informed consent to participate in a research project, patients require to be given full

details about the study. In this instance they were required to be informed that their participation would involve the collection of follow-up data. While such information undoubtedly enables patients to give meaningful consideration to whether or not they wish to exert their right to refuse to participate, the provision of such details may have provided those patients who participated in this study with information which could have influenced their responses and, consequently the results of the study.

No differences were evident between the groups for any of the variables which measured the subjects' health over the previous year. However, at follow-up, the majority of patients reported that their health during the preceding year had been good. Because the initial interviews had been conducted while the patients were attending hospital as in-patients, it can be assumed that the follow-up report indicated an improvement in health for the majority of subjects.

9.3.2.1 Summary Of Extent To Which Aim 2 Has Been Achieved

This aim was achieved by analysing the difference between the groups in the extent of within-group change in the pre- and post-test measures. The extent of the difference between groups did not reach the level of statistical significance, indicating that no one intervention was shown to have a statistically significantly greater effect than no treatment.

9.3.3 AIM 3: To investigate nurses' practice in relation to:

a) assessment of their patients' alcohol consumption;

b) giving advice to problem drinkers about their drinking.

This aim was achieved by means of the administration of a self-complete questionnaire to a sample of practising nurses from six general hospitals. It was found that the vast majority reported that they felt that it is important for nurses to know how much their patients drink and that 91% said that they always or often ask about this. However, when nursing notes of patients in one of the hospitals were examined it was found that 32% of nursing notes made no mention of alcohol consumption, 40% included descriptive comments, such as "social" or "heavy drinker" and only 28% quantified alcohol consumption.

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The nurses' responses to the items about how important they view asking patients about alcohol consumption and whether they ought to give advice to such patients may be more a function of the nature of self-report data and the nurses' views of what they wished to be seen to be reporting, than of what they actually believed. This does not, however, explain the relatively low rate of reports of nurses who say that they do give advice. It may be that an observational study design would have been a more reliable way of eliciting the data. Such methods of data collection, however, are likely to be biased by the presence of the observer.

88% of the nurses indicated that they regarded themselves as having a role in giving advice to problem drinkers. However, only 10% said that they always gave advice to patients whom they believed were drinking excessively, while 22% reported that they often gave advice. 45% said that they occasionally gave advice and 21% never gave advice. 83% said that they had not been taught or could not remember having been taught what advice to give to problem drinkers. Such reports were not associated with the nurses' training dates.

Because it was considered important to complete the survey prior to beginning the study to identify problem drinkers which was reported in Chapter Six, there was insufficient time to conduct a full pilot study. Instead the questionnaire was pretested by asking colleagues to examine its content validity. Some amendments were made to its wording as a result of suggestions. However, conducting a pilot study may have resulted in improvements in the wording of some of the items.

9.3.3.1 Summary Of Extent To Which Aim 3 Has Been Achieved

The method used to achieve this aim was based on the analysis of self-report data. Because of the problems of determining the reliability of such data it is not possible to ascertain the extent to which this aim was achieved. However, the nurses' reports of their practice in relation to assessment of their patients' alcohol consumption and to giving advice to problem drinkers about their drinking were investigated.

9.3.4   AIM 4: To investigate nurses' knowledge of:

a)   standard units of alcohol;
b)   sensible limits of alcohol consumption;
c)   alcohol-related health problems.

As shown in Table 8.6, 52% of nurses correctly expressed the alcohol content of one standard unit of whisky. Corresponding correct responses for wine, sherry and beer were 50%, 43% and 42%. The nurses' ability to give correct responses was not related to whether they had trained before or after 1984, the time when measuring alcohol in standard units was being advocated.

The nurses were asked in an open-ended question to state the sensible weekly levels of alcohol consumption for men and women as recommended by the Health Education Authority. 42% of the nurses were able to identify 21 units per week as the limit for men and 14 units for women. A significant relationship between these responses and whether the nurses had trained before or after 1984 was found with proportionately more recently trained nurses being aware of the sensible drinking limits.

The nurses were asked to list the health problems which could result from excessive alcohol consumption. In an article on the early identification of alcohol problems, Holt et al (1981) classified clinical symptoms and signs as either early or late indicators of alcohol abuse. The authors listed 19 problems which were classified as occurring at an early stage, two as being either early or late problems and 22 which were associated with a long-standing history of heavy drinking. The nurses reported fewer problems than had been cited by Holt et al (1981) and significantly more late than early problems.

The health problems which the nurses suggested are caused by excessive alcohol consumption are given in Table 8.27 in order of frequency with which the condition was mentioned.

9.3.4.1 Summary Of Extent To Which Aim 4 Has Been Achieved

The survey method was appropriate to ascertain the extent of nurses' knowledge of standard units of alcohol, sensible limits of consumption and of alcohol-related health problems. The results indicated that nurses' knowledge of standard units of alcohol was not adequate to enable them to accurately quantify their patients' levels of alcohol consumption. They were also found to be lacking in knowledge on which they could base advice about the relative risk associated with harmful levels of consumption.

9.3.5   AIM 5: To investigate whether nurses have the access to health education literature to give to problem drinkers

Only 16% of the nurses reported that leaflets about how to reduce alcohol consumption were available for patients, compared with 80% who said that such leaflets were not available where they worked.   Corresponding figures about the availability of leaflets which gave information about sources of further help for problem drinkers were 24% and 74% respectively.

9.3.5.1   Summary Of Extent To Which Aim 5 Has Been Achieved

The survey method was adopted to achieve this aim.   The data which was derived depended on the nurses knowing whether the leaflets in question were available or not. It is acknowledged that this resource may have been available without the nurses knowing where to locate it.   However, it was considered that this aim had been achieved because patients' receipt of such material is dependent on the nurses knowing where to find it.

9.4   DISCUSSION AND CONCLUSIONS

The study described in this thesis confirmed the prevalence of problem drinking among general hospital in-patients, supporting the view of McBrien (1983), Chick et al (1985) and Babor and Grant (1992) that hospitalisation provides an opportunity for detection of problem drinkers.

9.4.1   Identification Of Problem Drinkers

The use of the retrospective diary of alcohol consumption is recommended as a screening tool which can be readily incorporated into nurses' routine assessment procedures. However, the validity of such a tool depends on how it is used. The recognition of problem drinking using the diary method of calculating consumption levels is contingent on the ability to calculate alcohol consumption in standard units of alcohol. The evidence provided by the survey reported in Chapter Eight suggests that many nurses do not have the necessary knowledge of the alcohol equivalences as expressed in standard units of alcohol of different beverages to enable them to make accurate assessments of alcohol consumption. This knowledge deficit may in part be

explained by the lack of a clear definition of what constitutes the "standard unit of alcohol".

According to the Health Education Authority's leaflet, "That's the limit: a guide to sensible drinking", 1/6th gill measure of spirits is equivalent to one standard unit of alcohol. This leaflet is distributed in Scotland by the Health Education Board (Scotland). However, advertisements sponsored by the Health Education Board (Scotland) which appeared in the Scottish national press during 1992 described 1/5th gill of spirits as containing one standard unit of alcohol. The booklet entitled "So you want to cut down your drinking? A self-help guide to sensible drinking" (Robertson and Heather), which is also published and distributed by the Health Education Board (Scotland), also gives one unit of alcohol as 1/5th gill of spirits. The measure of spirits which is normally served in English pubs is 1/6th gill, as opposed to 1/5th gill which is the norm in Scottish pubs. Standard units of wine and sherry are described in "That's the limit: a guide to sensible drinking" as one standard and standard small glass respectively. No indication is given as to what constitutes a standard or standard small glass. The corresponding information given in "So you want to cut down your drinking? A self-help guide to sensible drinking" (Robertson and Heather) is equally ambiguous.

Turner (1990) and Miller et al (1991) highlighted this problem and discussed the difficulties encountered in comparing results of research studies caused by disparity in the definitions of the standard unit of alcohol. Miller et al's plea was for the development of a more precise form of measurement which could be universally adopted for both research and educational purposes. This would provide a useful base for future studies, the training needs of health care professionals and also for health education of the general public.

One of the main reasons for needing to know how much alcohol patients drink is to assess whether their consumption is likely to be contributing to the development of health problems. A further reason is to enable judgements to be made about whether treatment should be offered and, if so, the nature of the treatment. The results of the survey reported in Chapter Eight suggested that the majority of nurses were not able to report the recommended sensible weekly limits correctly for men and women. However, there is an assumption which underlies the concept of "sensible" as opposed to "problem" drinking that there is an arbitrary point at which drinking becomes harmful to health. The report of the Royal College of Psychiatrists (1986),

emphasised the point that the limits of 21 units per week for men and 14 units per week for women are general guidelines only and do not take into account individual variations. Indeed, the authors of the report recognise that there is a continuum for increasing risk associated with increasing consumption. This is a concept which is at odds with the notion of cut-off points for high or low risk drinking.

There is also a danger that describing any level of consumption as sensible may lead people to interpreting it as the level up to which drinking is problem-free. Such an interpretation may cause drinkers to increase their level of consumption. In addition, young people as a group are attracted to risk-taking and may be encouraged to drink to excess by the fact that the guidelines exist.

However, on balance there are undoubted benefits in having such guidelines. In addition to providing a focus for health education, they can be used as a yardstick by which people can make decisions about how much they can drink without, in the majority of cases, adverse consequences to health.

9.4.2   The Effectiveness Of Minimal Interventions

The study described in Chapter Seven of this thesis has not established the value of minimal interventions for problem drinking as those patients in the experimental treatment groups reported reductions in alcohol consumption, liver function tests and benefits to their health which were not significantly greater than those of the control group who had received no treatment. However, the fact that all groups demonstrated improvements suggests that using the retrospective drinking diary routinely may be effective in helping problem drinkers to focus on how their alcohol consumption may be affecting their health and consequently causing them to change their drinking behaviour. This is an area which merits further study.

One disadvantage of the study design was that the experimental groups to which subjects were allocated when identified as potential problem drinkers were known to the interviewer prior to the administration of the interview. This raised the possibility that bias may have introduced during interview. This was a point of which the interviewer was aware and accordingly she attempted to adopt the same manner when interviewing all participants. One solution would have been for the screening interviews to have been conducted by a researcher who was unfamiliar with the study design. However, resources did not permit the funding of such an appointment.

Since the treatments were all conducted by the same person, the fact that those patients to whom she gave advice did no better than the control group may have occurred, not because of the advice which was given, but because of the effectiveness or otherwise of her communication skills. It is possible that different results might have been found had another person been administering the treatments. This is particularly possible if the treatments were to be administered by nurses who are part of the ward team and with whom relationships had already been established.

For some people, minimal intervention may be enough to raise awareness of problems and instigate a change in drinking behaviour. However, the brevity of the treatments which were the subject of this study makes it impossible to address problems of multiple deprivation. For individuals who experience such problems, minimal intervention may be less likely to be effective.

9.4.3 Availability Of Health Education Literature

The nurses reported that appropriate health education literature was not available at ward level for patients.

In Section 6.5.2 in Chapter Six, it was shown that 24.5% of patients who were screened (Section 6.5.2, Chapter 6) reported drinking in excess of the "sensible drinking limits". Although the results of the study reported in Chapter Six failed to show benefits of the information booklet which was used, it is possible that a more detailed self-help booklet, such as, "So you want to cut down your drinking? A self-help guide to sensible drinking" may be of value, as suggested by Heather et al (1986). Such information about the effects of alcohol on health should be readily available for hospital in-patients.

9.4.4 Implication For Nurse Education

In addition to requiring training in assessing patients' level of alcohol consumption, the nurses reported that their training was inadequate in relation to giving advice to problem drinkers. Traditionally, treatment of alcohol problems has been the remit of specialist health workers in psychiatric hospitals or alcohol treatment centres attached to mental health services. It may be that teaching nurses about giving advice to problem drinkers is also generally regarded as the responsibility of psychiatric nurse teachers. Psychiatric nurse teachers themselves, however, may consider that their

teaching should be concerned with care in the psychiatric setting and that the educational preparation of nurses to cope with problem drinkers in medical and surgical wards should be the responsibility of those who teach medical and surgical nursing. Yet, because the effects of excessive alcohol consumption are so wide-ranging, teaching about the association between heavy drinking and health as well as in ways of helping patients to reduce consumption should ideally be part of the remit of all nurse teachers. The results of the survey raises issues about the content of the nursing syllabus and also of how curricula for practice-based professions, such as nursing, ought to be developed.

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EDINBURGH ROYAL INFIRMARY STUDY

My name is .... We are interviewing patients on admission to hospital for a study which is about patterns of drinking and certain aspects of health. Everything you say will be treated confidentially.

Would you be willing to help with this study?

If No, record reasons ....

1. Have you had any alcohol to drink in the past 12 months?	Yes
(if NO - has that always been the way? Were you worried about your drinking of it becoming a problem? of it affecting your health?)	No, has never drunk alcohol
	No, used to drink, stopped over 1 year ago
	- because of problems
	- not because of problems.
	N/A
2. Have you ever attended a specialist for help with a drinking problem?	No, or only one appt.
	Yes
	N/A
3. Have you ever attended meetings of Alcoholics Anonymous?	No
	Less than 4
If YES, how many?	4 or more
	N/A

4.	Did you have any alcohol to drink in the 7 days before admission?	Yes
		No, would normally but unwell
		No, would normally but other reason
		No, would <u>not</u> normally because drinks less than weekly
		N/A
5.	How frequently do you normally drink?	More than once a week
		Once a week on average
	2+ days a fortnight = once per week on average	Once a fortnight
	3+ days in 3 weeks = once per fortnight,etc	Once a month
		Once in 6 months
		Once a year
		N/A
6.	Most people have a day once in a while when they drink more than usual. Has there been any day (ie, 24 hours) in the past year when you have had more than 7 pints of beer, or 7 double measures of spirits, or equivalent?	No such days
		One day
		More than 1, less than 10
		10 or more, less than 20
		20 or more
		N/A

If YES -

7.	Has there been any day in the past year when you have had more than14 pints of beer, or 14 double measures of spirits, or equivalent?	No such days Less than 5 More than 5, less than 10 10 or more, less than 20 20 or more N/A
8.	In the past 2 years have you had any problem with your weight? Specify .... If YES, did your drinking contribute?	No weight problem (or weight problem not contributed to by alcohol) Weight problem contributed to by alcohol
9.	What is your current weight? Clarify, if necessary, present illness(es)/ reason(s) for admission and judge whether alcohol related. See Physician's casenotes and comments. Record details	(in lbs) Definitely not alcohol related * Potentially alcohol related condition **Definitely alcohol related condition * Upper G.I., Liver, Unspecified neuropathy, gout ** Alcohol cirrhosis D.T.'s

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10. Was the week before coming into hospital a fairly normal week for you, or had you been ill?

No

Yes

If week normal, record what and how much consumed. Ask separately about each morning, afternoon and evening and for beer and spirits - probe "how did you spend that evening" etc. If week not normal take "Typical week" and if not typical week record "Typical heavy" week.

	Morning	Afternoon	Evening
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			

11. Week's total in units ....

12. Heaviest day in units ....

13. No. of drinking days ....

IN THE PAST TWO YEARS HAVE YOU SUFFERED FROM ANY OF THE FOLLOWING CONDITIONS?

14. Stomach or duodenal ulcer?

If Yes, was it related to alcohol?

Did alcohol make it worse?

What did the doctor say?

No (definitely not alcohol related)

Yes (alcohol related)

Not applicable if Yes to last question

15. Have you been off work because of stomach trouble due to drinking (vomiting or gastritis)?

N/A

No

Yes, once

Yes, more than once

16. Have you ever had any liver trouble?

If Yes, what did the doctor say caused it? Did alcohol have anything to do with it?

No (or definitely not alcohol related)

Yes (alcohol related)

17. Have you been in an accident at work or on the roads in the past 2 years?

If Yes, Had you any alcohol? Could the accident have been partly due to your drinking?

No (or definitely not alcohol related

Yes (alcohol related)

18. Again in the past 2 years have you been absent from work for any other reason (excluding the above) connected with drinking, like a bad hangover for example?

No

Yes

N/A (not working in past 2 years)

19. Some people find there are certain situations or times of day when they often feel restless or irritable without a drink. Looking back over the PAST TWO YEARS, has this applied to you?

Yes

No

If Yes, or equivocal:-

does it interfere with what you are doing?

Yes   No

do others notice you feeling restless?

Yes   No

are there times when you can't think of anything else but getting a drink?

Yes   No

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20. It is quite common amongst people who once in a while have a good drink to notice their hands tremble slightly the next morning. Have you ever noticed this?	No
If YES, has this happened in the past 2 years?	No
If within the past two years ask :-	
(a) FREQUENCY	
At its most frequent, how often has this happened (in the past 2 years)?	Only happened once
	More than once, less than weekly
	Once a week or more, not every day
	Usually every day
21. (b) SEVERITY (not applicable if NO to last question)	
Has the trembling ever made it difficult to shave or hold a cup or glass?	N/A
	No difficulty shaving, etc
Has this happened more than once?	
	Once difficulty shaving, etc
Have your legs, or has your whole body shaken?	
	More than once
	Once legs shook, etc
	More than once legs shook, etc

22. Have you ever had a drink sometime in the morning (within 3 hours of waking) to help you relax, cure a hangover or to settle yourself?	No
	Over 2 years ago
If Yes : Within the past 2 years? Ask:-	Only happened once
At its most frequent, how often does that occur? (in past 2 years)	More than once, less than weekly
	Once a week or more, not every day
	Usually every day
23. In the past 2 years, have you ever tried seriously to cut down your drinking?	Tried, No difficulty
If Yes : Did you find it in any way difficult?	Difficult (any degree)
	Impossible
	N/A (never tried, never bothered)
	Main reasons:-
Why were you trying to cut down? (specify)	(a) Lose weight
	(b) Health
	(c) Family pressure
In what way was it difficult? (specify)	(d) Job
	(e) Other
24. Have you ever seen or heard things during a period when you were drinking heavily or when you had cut down or stopped?	No
	Equivocal
	Yes

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25. Have you ever had a fit or a seizure connected with drinking?	No Equivocal Yes
AGAIN REFERRING ONLY TO THE PAST 2 YEARS HAVE ANY OF THESE APPLIED TO YOU :-	
26. Have you ever been asked to leave a place* because you'd had too much to drink? (* party, bar, club, match etc.) If Yes, specify If N/A, specify e.g. Never out of the house; lives in an institution	No Yes N/A
27. Have there ever been occasions when you set yourself a limit on how much you'd drink, but found yourself completely unable to keep to a limit?	N/A Doesn't set limits Sets limits keeps to limits
28. If Yes : How many times has this happened? (exclude inability due only to pressure from others) (If he/she claims never to set limits, check for situations such as driving or machine operating where limits would usually be set) ("Changing his mind" = a limit was not actually set, when he changed his mind after being unable to keep to the limit)	Completely unable to keep to limit once Completely unable to keep to limit more than one, less than 10 times Completely unable to keep to limit, 10 or more times N/K

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29. Different people mean different things by getting drunk.

    Have there been occasions, in the past 3 months, when you found it difficult to stop yourself from getting, what you would call, drunk?

    .....for example, been drunk in a situation where you specially intended to avoid being drunk, but found you couldn't control it?

N/A, never drunk, never tries to control it

Has tried to prevent getting drunk, once, no difficulty

Difficulty preventing getting drunk more than once, less than 10 times

Difficulty preventing getting drunk 10 times or more

30. Have you had any trouble at work (a warning about lateness, or inefficiency that was due to hangovers, for example)

    If, Yes specify...
    (e.g. not in job in the last 2 years)

No

Yes

N/A

31. Have there been arguments at home*(in your family) (where you live) about your drinking?

    If he/she has no "home", explore living arrangements and family contacts)

No

Yes

N/A (lives completely alone, no family contacts)

32. (a) Most (families)(couples)(groups of people) living together have rows from time to time. In the rows in your (family)(marriage)(flat) etc. have blows ever been exchanged?
    (refers to physical violence; does not include walloping the children)

    If Yes

    (b) When was the last occasion?

No

Yes

N/A (lives completely alone, no family or social contact)

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IF IN THE PAST TWO YEARS :-

Ascription to alcohol

What is usually the cause of these rows?
Do you tend to get into violent arguments more often if   No
you have had a drink?
Or does it happen just as much if you haven't been   Yes
drinking?
What would your wife say? etc.   N/A (lives
                                                           completely alone, no
                                                           family or social
                                                           contacts)

33. Have arguments in your family with your wife/ with the
     people you live with ever :-

     led to your wife/................friends threatening to leave   Yes   No
     you (divorce you)

     OR led to your wife/..............friends/family asking you   Yes   No
     to leave?

34. OR made such an unpleasant atmosphere that you
     thought of leaving?
                                                           No
     If Yes to any :
                                                           Threatened rupture
     (b) When was the last occasion something like that
         happened?   Actual rupture

                                                           N/A (completely
                                                           alone, no family or
                                                           intimate contacts)

     IF IN THE PAST TWO YEARS :-

     What were the circumstances?

     Was your drinking involved?

     What would the family have said? etc.

35. Have you had any money worries* that have been due to your drinking or made worse by your drinking?

N.B. in the past two years

Specify..

* include housewives

- regularly spent some of the housekeeping money so that you bought less for the family than you would have?
- keeping family short; family hardship
- going into debt, but continuing to spend money on alcohol?

No

Yes

36. Have you had any trouble with the police connected with your drinking (in the past 2 years)?

if Yes, specify...............................

No

Yes

37. Have you a relative whose drinking caused problems? (if Yes, - was that your real Brother/ Mother etc. or half-brother/ foster-mother)	No, or Foster/Adoptive relative
	Spouse
(Note evidence for calling it a drink problem)	Brother
Do not code if the"drink problem" is two or less isolated problems or several trivial events. Need serious problems or protracted history.	Sister
	Mother
(Also note when and where treated)	Father
	Son
	Daughter
	Sibling & parent
	Sibling & child
	Parent & child
	Two siblings
	Spouse & other
	Other combination
Specify...	Not known (no contact with relatives for over 5 years)

ALCOHOL CONSUMPTION QUESTIONNAIRE

I am undertaking a study of people's drinking habits in order to investigate the relationship between alcohol consumption and health and I should be grateful if you would complete the enclosed questionnaire.

As the questionnaire is anonymous it will not be possible to identify any of your responses. All information given will be treated as confidential.

To complete the questionnaire you should place a tick in the box next to the answer which is right for you. If none of the alternatives suits you, choose the one which is <u>most</u> right for you. Please return the completed questionnaire in the envelope which is provided.

Thank you for your help.

Hazel E. Watson
Research Nurse

ALCOHOL CONSUMPTION QUESTIONNAIRE

Please tick the appropriate box: Male ☐   Female ☐

1. Have you drunk any alcohol during the past 12 months?

Yes ☐   No ☐

If you have answered YES go on to question 2.

If you have answered NO to question 1 please answer the next question

Have you ever drunk alcohol?

Yes ☐   No ☐

If you have answered YES go on to question 2.

If you have never drunk alcohol please do not answer any more questions. Thank you for your help.

2. Have you had any alcohol to drink in the past week?

Yes ☐   No ☐

3. On average do you normally drink:

Once a year?	☐
Once in 6 months?	☐
Once a month?	☐
Once a fortnight?	☐
Once a week?	☐
More often than once a week?	☐
Usually every day?	☐

4. **Complete the following chart indicating:**

a) <u>how much</u> alcohol you drank last week;

b) <u>what kind of alcohol</u> you had to drink (e.g., spirits, wine, beer: strong or low alcohol beer, etc.)

c) <u>at what time of day</u> you were drinking

If last week was <u>not</u> normal for you, think of what would be a typical week for you when filling in the chart

Beginning with yesterday, work backwards through the week.

	Morning	Afternoon	Evening
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			

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5.   Most people have a day once in a while when they drink more than usual. Think back to the last time when this happened during the past year and write in the space provided **WHAT** and **HOW MUCH** you remember drinking on that occasion.

6.   **In the past year how often have you drunk that quantity?**

Place a tick in the appropriate box

Once only

More than once, less than 10 times

More than 10 times, less than 20 times

More than 20 times

7.   **In the past year have you had any problems with your weight?**

Yes   ☐   No   ☐

If you answered YES to question 7 have you been:

Overweight   Yes   ☐   No   ☐
Underweight .   Yes   No

If you answered YES to question 7:

Do you think that your drinking contributed to your weight problem?

Yes   ☐   No   ☐

8.   **In the past year have you suffered from heartburn, or a stomach or duodenal ulcer?**

Yes   ☐   No   ☐

If you answered YES to question 8:

Did alcohol make it worse?

Yes   ☐   No   ☐

9. **Have you been unable to carry out your normal daily routine in the past year because of stomach trouble (e.g. heartburn or vomiting)?**

Yes ☐   No ☐

If you answered YES to question 9:

Did alcohol make it worse?

Yes ☐   No ☐

10. **As far as you know have you had any liver trouble in the past year?**

Yes ☐   No ☐

If you answered YES to question 10:

Did alcohol have anything to do with it?

Yes ☐   No ☐

11. **Have you been involved in an accident in the past year?**

Yes ☐   No ☐

If you answered YES to question 11:

Could any of the accidents have been partly or wholly due to your drinking alcohol?

Yes ☐   No ☐

12. **Within the past year have you ever been unable to carry out your normal daily life because of any other reason connected with alcohol, such as a bad hangover?**

Yes ☐   No ☐

If you answered YES to question 12:

How often has this happened? Place a tick in theappropriate box:

Once only

More than once, less than weekly

More than once a week but not every day

Usually every day

Please specify the reason(s):

13. **Some people find that there are certain situations or times of day when they often feel restless or irritable without a drink. Has this ever happened to you during the past year?**

Yes ☐   No ☐

If you answered YES to question 13:

How often has this happened? Place a tick in theappropriate box:

Once only

More than once, less than weekly

More than once a week but not every day

Usually every day

If you answered YES to question 13:

Does it interfere with what you are doing?

Yes ☐   No ☐

Do others notice you feeling restless?

Yes ☐ No ☐

Are there times when you can't think of anything else but getting a drink?

Yes ☐ No ☐

14. It is quite common for people who once in a while have a good drink to notice that their hands tremble slightly next morning.

Have you ever noticed this yourself?

Yes ☐ No ☐

If you have answered YES to question 14:

How often has this happened in the past year? Place a tick in theappropriate box:

Once only ☐
More than once, less than weekly ☐
More than once a week but not every day ☐
Usually every day ☐

15. **If you have experienced trembling in the morning after drinking has it ever made it difficult to shave or put on make-up or hold a cup?**

Yes ☐ No ☐

If you have answered YES to question 15:

Has it happened more than once?	Yes ☐	No ☐
Have your legs shaken?	Yes ☐	No ☐
Have your legs shaken more than once?	Yes ☐	No ☐
Has your whole body shaken?	Yes ☐	No ☐
Has your whole body shaken more than once?	Yes ☐	No ☐

16. **In the past year have you ever had a drink within 3 hours of wakening to help you to relax, cure a hangover or to settle yourself?**

Yes ☐ No ☐

If you have answered YES to question 16:

How often has this happened? Place a tick in theappropriate box:

Once only

More than once, less than weekly

More than once a week but not every day

Usually every day

17. **In the past year have there been any occasions when you have found it difficult to stop yourself from getting drunk?**

Yes ☐ No ☐ N.A * ☐

*N.A = Not Applicable

If you have answered YES to question 17:

How often has this happened in the past year? Place a tick in theappropriate box:

Once only

More than once, less than 10 times

More than 10 times

18. **In the past year have you ever tried seriously to cut down your drinking?**

Yes · ☐ No ☐ N.A * ☐

If you have answered YES to question 18:

What were your reasons?

- to lose weight?	Yes	☐	No	☐
- for health reasons?	Yes	☐	No	☐
- because of your job?	Yes	☐	No	☐
- because of family pressure?	Yes	☐	No	☐
- for other reasons?	Yes	☐	No	☐

Please give other reasons

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19. In the past year have you ever heard or seen things which did not exist during a period when you were drinking heavily or when you had cut down or stopped drinking?

Yes ☐ No ☐ N.A * ☐

*N.A = Not Applicable

If you have answered YES to question 19:

How often has this happened in the past year? Place a tick in theappropriate box:

Once only ☐
More than once, less than 10 times ☐
More than 10 times ☐

20. During the past year have you every been asked to leave a place (e.g. a party, club or bar) because of your drinking?

Yes ☐ No ☐

If you have answered YES to question 20:

How often has this happened in the past year? Place a tick in theappropriate box:

Once only ☐
More than once, less than 10 times ☐
More than 10 times ☐

21. During the past year has there been an occasion when you have set yourself a limit on how much you would drink, such as when you are driving, but have been completely unable to keep to that limit?

Yes ☐ No ☐ N.A * ☐

If you have answered NO to question 21:

Is it because you:

set limits and always stick to them? Yes ☐ No ☐

If you have answered YES to question 21:

How often has this happened in the past year? Place a tick in theappropriate box:

Once only

More than once, less than 10 times

More than 10 times

22. In the past year have you had any trouble at work because of anything to do with your drinking (e.g., a warning about lateness or inefficiency due to hangovers or about drinking at work, etc.,.)?

Yes ☐   No ☐   N.A * ☐

If you have answered YES to question 22:

How often has this happened? Place a tick in theappropriate box:

Once only

More than once, less than weekly

More than once a week but not every day

Usually every day

23. Have there been any arguments at home (or where you live) in the past year which have been caused by your drinking?

Yes ☐   No ☐   N.A * ☐

If you have answered YES to question 23:

How often has this happened? Place a tick in theappropriate box:

Once only

More than once, less than weekly

More than once a week but not every day

Usually every day

24. Have the arguments with the people you live with happened as a result of your drinking?

ONLY ANSWER THIS QUESTION IF YOU HAVE ANSWERED YES TO QUESTION 23:

led you to threaten to leave home?	Yes ☐	No ☐
led you to actually leave home?	Yes ☐	No ☐
led your partner to threaten to leave you?	Yes ☐	No ☐
led your partner to actually leave you?	Yes ☐	No ☐

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25. **Most families/couples/groups of people who live together have rows from time to time. If you have been involved in the past year in rows in which your drinking played a part, have you been physically violent towards your partner during the past year?**

Yes ☐ No ☐ N.A * ☐

If you have answered YES to question 25:

How often has this happened in the past year? Place a tick in theappropriate box:

Once only ☐
More than once, less than 10 times ☐
More than 10 times ☐

26. **In the past year have you had any money worries that have been due to your drinking or which have been made worse by your drinking?**

Yes ☐ No ☐

If you have answered YES to question 26:

How often has this happened in the past year? Place a tick in theappropriate box:

Once only ☐
More than once, less than 10 times ☐
More than 10 times ☐

27. **In the past year have you got into debt because you have spent too much on alcohol?**

Yes ☐ No ☐

If you have answered YES to question 27:

How often has this happened in the past year? Place a tick in theappropriate box:

Once only ☐
More than once, less than 10 times ☐
More than 10 times ☐

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28. **Over the past year have you spent money on alcohol which you should have spent on family or on other things?**

Yes ☐   No ☐

If you have answered YES to question 28:

How often has this happened in the past year? Place a tick in theappropriate box:

Once only
More than once, less than 10 times
More than 10 times

☐
☐
☐

29. **Have you been in trouble with the police during the past year because of your drinking?**

If you have answered YES to question 29:

How often has this happened in the past year? Place a tick in theappropriate box:

Once only
More than once, less than 10 times
More than 10 times

☐
☐
☐

APPENDIX 4

INTER-CORRELATION MATRIX

Item

Item	Sex	1	2	3	4a	4b	4c	5	6	7	8	9	10	11	12	13a	13b	14	15	16	17	18	19	20	21a	21b	22	23	24a	24b	25	26	27	28	29
Sex	1.00																																		
1	-.06	1.00																																	
2	-.07	-.22	1.00																																
3	-.17	.26	.28	1.00																															
4a	-.16	-.04	-.15	.01	1.00																														
4b	-.19	-.02	-.11	.06	.99	1.00																													
4c	-.27	.17	.25	.70	.34	.37	1.00																												
5	-.14	-.01	.05	.15	.40	.41	.20	1.00																											
6	-.16	.18	.13	.35	.14	.19	.34	.23	1.00																										
7	-.16	-.004	.26	.33	.11	.16	.39	.17	.22	1.00																									
8	-.13	.04	.26	.08	.05	.09	.20	.08	.15	.45	1.00																								
9	-.18	.05	.18	.18	.21	.25	.29	.18	.21	.53	.66	1.00																							
10	-.13	.03	.19	.06	.06	.08	.17	.01	.09	.19	.37	.37	1.00																						
11	-.01	.05	.24	.23	.24	.26	.27	.15	.23	.18	.14	.22	.35	1.00																					
12	-.24	.07	.27	.37	.23	.30	.37	.27	.36	.45	.31	.50	.49	.37	1.00																				
13a	-.24	.06	.22	.43	.30	.34	.54	.22	.33	.44	.35	.52	.41	.43	.73	1.00																			
13b	-.26	.06	.19	.42	.35	.40	.53	.26	.38	.48	.39	.59	.36	.41	.76	.92	1.00																		
14	-.20	.07	.19	.33	.30	.34	.41	.19	.34	.37	.28	.39	.29	.36	.59	.66	.67	1.00																	
15	-.22	.05	.19	.39	.32	.36	.51	.25	.37	.50	.42	.54	.39	.29	.70	.79	.83	.71	1.00																
16	-.21	.05	.14	.40	.32	.37	.50	.29	.40	.40	.28	.51	.40	.44	.70	.72	.81	.70	.84	1.00															
17	-.09	-.12	-.12	-.26	.06	.04	-.09	-.10	.01	.05	.16	.16	.14	.05	.12	.18	.20	.06	.20	.15	1.00														
18	-.16	.07	.21	.39	.11	.16	.42	.09	.25	.30	.12	.28	.29	.38	.45	.50	.52	.38	.45	.57	-.05	1.00													
19	.06	-.03	-.13	-.27	.03	.01	-.15	-.09	.04	-.13	-.03	-.02	.002	-.05	-.06	-.06	-.06	.01	.02	-.001	.45	-.17	1.00												
20	-.20	.04	.21	.31	.32	.38	.40	.27	.36	.47	.35	.52	.33	.53	.67	.75	.76	.61	.71	.71	.13	.34	.01	1.00											
21a	-.05	-.14	-.10	-.25	.05	.04	-.05	-.08	-.07	-.04	-.03	.05	.09	.06	-.07	-.02	-.01	-.04	-.01	.01	.29	.07	.36	.50	1.00										
21b	-.17	.04	.31	.29	.17	.20	.37	.14	.21	.44	.35	.57	.09	.06	.20	.63	.65	.58	.71	.71	.18	.23	.43	.05	.21	1.00									
22	-.19	.05	.22	.36	.30	.34	.47	.25	.35	.40	.30	.49	.44	.51	.67	.63	.70	.66	.85	.94	.16	.49	.02	.70	.59	.66	1.00								
23	-.25	.06	.19	.41	.25	.30	.49	.21	.39	.33	.31	.35	.38	.43	.74	.72	.78	.67	.75	.81	.16	.45	-.04	.75	.26	.76	.74	1.00							
24a	-.18	.04	.29	.30	.16	.20	.37	.07	.27	.29	.39	.35	.43	.22	.63	.61	.64	.54	.59	.56	.16	.38	-.06	.36	.43	.51	.76	.82	1.00						
24b	-.18	.04	.24	.31	.20	.23	.37	.08	.25	.25	.28	.23	.40	.21	.64	.62	.62	.58	.60	.56	.16	.38	-.07	.43	.26	.50	.84	.83	.94	1.00					
25	-.001	.05	-.09	-.21	-.03	-.06	-.08	-.17	-.09	-.11	.06	.01	.01	.02	-.07	-.02	-.01	-.04	-.04	-.01	-.29	-.07	-.31	-.02	-.46	-.01	.13	.06	.03	.21	1.00				
26	-.22	.05	.30	.35	.30	.36	.44	.21	.41	.44	.38	.50	.38	.55	.67	.73	.81	.60	.71	.75	.15	.46	-.01	.78	.17	.68	.48	.68	.71	.55	.52	1.00			
27	-.19	.04	.27	.29	.28	.32	.38	.24	.38	.43	.36	.49	.42	.47	.73	.70	.75	.50	.59	.65	.16	.41	.01	.78	.14	.54	.48	.54	.59	.47	-.01	.80	1.00		
28	-.22	.05	.28	.37	.30	.35	.47	.22	.38	.49	.45	.55	.46	.41	.72	.83	.86	.68	.77	.77	.18	.49	-.04	.75	.22	.84	.84	.71	.77	.78	.45	.81	.75	1.00	
29	-.14	.03	.20	.22	.20	.23	.29	.24	.21	.34	.34	.60	.24	.33	.47	.59	.57	.46	.54	.58	.12	.27	.03	.63	.12	.56	.56	.58	.46	.32	-.01	.07	.44	.65	1.00
	Sex	1	2	3	4a	4b	4c	5	6	7	8	9	10	11	12	13a	13b	14	15	16	17	18	19	20	21a	21b	22	23	24a	24b	25	26	27	28	29

WESTERN INFIRMARY (GLASGOW) STUDY
INTERVIEW SCHEDULE

1. **Have you ever drunk alcohol?**

   Yes ☐   No ☐

2. **Have you had any alcohol to drink during the past 12 Months?**

   Yes ☐   No ☐

   If not, why not?

   ....

   ....

   ....

   ....

3. **Have you ever attended a specialist (Professional or Voluntary Organisation) for help with an alcohol problem?**

   Yes ☐   No ☐

   End interview if NO to items 1 or 2, or YES to item 3

4. **On average, how often do you normally drink:**

Once a year?	☐
Once in 6 months?	☐
Once a month?	☐
Once a fortnight?	☐
Once a week?	☐
More often than once a week?	☐
Usually every day?	☐

5. **Did you have any alcohol to drink in the week before coming into hospital?**

   Yes ☐   No ☐

Complete the following chart indicating:

a)   how much alcohol you drank last week;

b)   what you had to drink (e.g, spirits, wine, beer: strong or low alcohol beer, etc.)

c)   at what time of day you were drinking

If last week was not normal for you, think of what would be a Typical Week for you when filling in the chart

Beginning with yesterday, work backwards through the week.

	Morning	Afternoon	Evening
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			

6a.   **Total amount consumed**   ....

6b.   **Maximum amount consumed in one day**   ....

6c.   **Number of drinking days**   ....

7. **In the past year have you suffered from heartburn, or a stomach or duodenal ulcer?**

Yes ☐   No ☐

Did the alcohol make to worse?

Yes ☐   No ☐

8. **During the past year have you been involved in an accident which could have been partly or wholly caused by your drinking?**

Yes ☐   No ☐

9. **Before you start drinking do you ever set limits on how much you are going to drink?**

If you have answered YES to this question, during the past year have you failed to keep to that limit?

Yes ☐   No ☐

How often has this happened?

Once only
More than once, less than weekly
More than once a week, but not every day
Usually every day
☐
☐
☐
☐

10. **In the past year have you had any trouble at work (or difficulty in carrying out daily routine, if not working) because of anything to do with your drinking (e.g, lateness or inefficiency due to hangovers or drinking at work, etc)?**

Yes ☐   No ☐

If you have answered YES to this question, how often has this happened?

Once only
More than once, less than weekly
More than once a week, but not every day
Usually every day
☐
☐
☐
☐

11. **Some people find that there are certain situations or times of day when they often feel restless or irritable without a drink. Has this ever happened to you during the past year?**

        Yes ☐   No ☐

If YES, does it interfere with what you are doing?

        Yes ☐   No ☐

Do others notice you feeling restless?

        Yes ☐   No ☐

Are there times when you can't think of anything else but getting a drink?

        Yes ☐   No ☐

12. **Have you ever experienced trembling in the morning after drinking?**

        Yes ☐   No ☐

If YES, have your hands trembled?

        Yes ☐   No ☐

have your legs shaken?

        Yes ☐   No ☐

has this happened more than once? (legs shaking)

        Yes ☐   No ☐

has your whole body shaken?

        Yes ☐   No ☐

has this happened more than once? (whole body shaking)

        Yes ☐   No ☐

13. **In the past year have you ever had a drink within 3 hours of wakening to help you to relax, cure a hangover or to settle yourself?**

Yes ☐   No ☐

If you have answered YES to this question, how often has this happened?

Once only ☐
More than once, less than weekly ☐
More than once a week, but not every day ☐
Usually every day ☐

14. **Have there been arguments at home (or where you live) in the past year which have been caused by your drinking?**

Yes ☐   No ☐

If you have answered YES to this question, how often has this happened?

Once only ☐
More than once, less than weekly ☐
More than once a week, but not every day ☐
Usually every day ☐

15a. **Have the arguments been with the people you live with and which happened as a result of your drinking ever led to**

you to threaten to leave home?

Yes ☐   No ☐   N.A ☐

you to actually leave home?

Yes ☐   No ☐   N.A ☐

15b. your partner to threaten to leave home?

Yes ☐   No ☐   N.A ☐

your partner to actually leave home?

Yes ☐   No ☐   N.A ☐

16. In the past year have you had any money worries that have been due to your drinking or which have been made worse by your drinking?

Yes ☐ No ☐

SCORING SYSTEM FOR THE WESTERN INFIRMARY (GLASGOW) STUDY INTERVIEW SCHEDULE

A system was devised to enable the interview schedule to be scored in order to provide an index of the severity and frequency with which alcohol-related problems were reported. The pertinent items are Items 7 to 16. The interview schedule and the scores for each item are given in Appendix 5.

Zero scores were applied to all negative responses.

Scores for positive responses for the Items 9, 10, 11, 13, and 14 ranged from "1" to "4". In the case of those items for which the response can only be either "Yes" or "No", a negative response received a score of "0" and a positive response was given "4" (i.e. Items 7, 8, 15, and 16).

There were five positive response options for Item 12. In order to apply equal weights to each item of the schedule, each response to Item 12 was calculated as a fraction of four. The scores which were analysed for this item were therefore as follows:

Response option 0=0.0
Response option 1=0.8
Response option 2=1.6
Response option 3=2.4
Response option 4=3.2
Response option 5=4.0

Items 1 to 4 were not scored because their purpose was to ascertain the subjects eligibility for inclusion in the study. The level of alcohol consumption was one of the principal variables to be measured. Accordingly, data derived from the retrospective drinking diary was also excluded from the scoring system.

Western Infirmary, Glasgow, G11 6NT   Tel. 041 339 8822

Please Quote Ref: EC 90/142
JKF/CD

EXT: 4299

14 October 1991

Mrs Hazel E Watson
Research Fellow (Nursing)
Greater Glasgow Health Board
112 Ingram Street
GLASGOW
G1 1ET

Dear Mrs Watson

PROTOCOL NUMBER 90/142
A STUDY OF THE IDENTIFICATION OF EARLY PROBLEM DRINKERS AND THE
EFFECTIVENESS OF MINIMAL INTERVENTIONS

I refer to the above and to your letter of 13 September, 1991, to Mr
Kennedy, Chairman of the West Ethical Committee. I am pleased to advise
that your proposals with the regard to the follow up phase of the study,
including the use of a revised consent, were discussed and approved by the
Committee when it considered these at its meeting on 17 September, 1991.

With kind regards.

Yours sincerely

JOHN K FLOOD
Secretary
Ethical Committee

GREATER GLASGOW HEALTH BOARD

THE WEST ETHICAL COMMITTEE

FORM OF CONSENT FOR PATIENTS/VOLUNTEERS IN CLINICAL RESEARCH PROJECTS

Title of Project: Evaluation of interviewer training.

Patient's Summary

I am training an interviewer to help with a study which is being conducted with another group of patients. It would be of value to that study if you would be willing to be interviewed in order that the interviewer can be assessed.

If you agree to participate it would involve your 12 answering questions which concern alcohol consumption and your health together with a review of your recent drinking experience. The interview will be repeated by a second interviewer. Both interviewers are trained nurses. Any information which you give will be treated in strict confidence.

If you do not wish to participate in the study, or wish to withdraw at any time, your care will not be affected in any way.

It should be noted that your participation may not be of direct benefit to you, but could help in the development of treatment for the benefit of future patients.

Consent

I .... of Ward ....

give my consent to the research procedures described above, the nature, purpose and possible consequences of which have been described to me by

....

Signed .... Date ....

Witness ....

APPENDIX 9

HOSPITAL ADMINISTRATION

Please Quote Ref: 90/142
JKF/CD

5 November 1990

Mrs H E Watson
Research Fellow (Nursing)
Greater Glasgow Health Board
112 Ingram Street
GLASGOW
G1 1ET

Dear Mrs Watson

A STUDY OF THE IDENTIFICATION OF EARLY PROBLEM DRINKERS AND THE EFFECTIVENESS OF MINIMAL INTERVENTIONS

I refer to the above and write to confirm that the West Ethical Committee at its meeting on 16 October, 1990 gave Ethical approval to the proposed study. We do think it is important, however, that you ensure that the patient summary points out to patients that their medical records are to be examined by health professionals other than those responsible for their immediate care, and their consent to this is obtained. The Committee also expressed the view that the intervention which is proposed will be minimal and not the best which could be used but, nonetheless, Ethical approval to the proposed study is given.

If you require clarification or need any further information pleased do not hesitate to contact me. If you decide to amend the patient summary as suggested please let me have a copy of the amendment for our files.

Yours sincerely

JOHN K FLOOD
Ssecretary
Ethical Committee

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GREATER GLASGOW HEALTH BOARD

THE WEST ETHICAL COMMITTEE

FORM OF CONSENT FOR PATIENTS/VOLUNTEERS IN CLINICAL RESEARCH PROJECTS

Title of Project

Alcohol Consumption and Health (1)

Patient's Summary

I am undertaking a study of the relationship between alcohol consumption and health and wish to interview all patients who are admitted to this ward.

Participation in this study involves answering questions about your alcohol consumption and having a blood test. Your medical and nursing notes will be read by the researcher.

It should be noted that your participation may not be of direct benefit to you, but could help in the development of treatment for the benefit of future patients.

If you do not wish to participate in the study, or wish to withdraw at any time, your care will not be affected.

If you wish to take part your General Practitioner will be advised of your participation and the clinical management that you will undergo.

Consent

I .... of Ward ....

give my consent to the research procedures described above, the nature, purpose and possible consequences of which have been described to me by

....

Signed .... Date ....

Witness ....

WESTERN INFIRMARY (GLASGOW) STUDY

FOLLOW-UP INTERVIEW SCHEDULE

Identification No ....   Date of interview ....

Occupation ....

Marital status ....

Do you live alone?   Yes ☐ No ☐

With whom do you live? (relationship) ....

1. **How has your health been since you were in the Western Infirmary a year ago?**

    Good ☐
    In-between ☐
    Poor ☐

2. **Have you attended your doctor since then?**

    Yes ☐   No ☐

    Number of attendances:

    0 ☐
    1-5 ☐
    6-10 ☐
    >10 ☐

    Reasons for attendances: ....

    ....

3.   **During the past year have you attended hospital as:**

a)   an out-patient?   Yes   ☐   No   ☐

b)   an in-patient?   Yes   ☐   No   ☐

Reasons for attendances: ....

....

4.   **Have you drunk any alcohol during the past 12 months?**

Yes   ☐   No   ☐

If not, why not?: ....

....

5.   **On average do you normally drink:**

once a year?

once in 6 months?

once a month?

once a fortnight?

once a week?

more often than once a
week?

usually every day?

6.   **When did you last have a drink which contains alcohol?**

....

7.   **During the past year have you attended a specialist (professional or voluntary organisation) for help with an alcohol problem?**

Yes   ☐   No   ☐

Are you still attending for treatment?

Yes   ☐   No   ☐

8.   **Have you had any alcohol to drink in the past week?**

Yes   ☐   No   ☐

9. **Was last week typical?**

Yes ☐ No ☐

Complete the following chart indicating:

a) how much alcohol you drank last week;

b) what you had to drink (e.g, spirits, wine, beer: strong or low alcohol beer, etc.)

c) at what time of day you were drinking

If last week was not normal for you, think of what would be a Typical Week for you when filling in the chart

Beginning with yesterday, work backwards through the week.

	Morning	Afternoon	Evening
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			

10a. **Total amount consumed** ....

10b. **Maximum amount consumed in one day** ....

10c. **Number of drinking days** ....

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11. In the past year have you suffered from heartburn, or a stomach or duodenal ulcer?

Yes ☐   No ☐

Did the alcohol make to worse?

Yes ☐   No ☐

12. During the past year have you been involved in an accident which could have been partly or wholly caused by your drinking?

Yes ☐   No ☐

13. Before you start drinking do you ever set limits on how much you are going to drink?

If you have answered YES to this question, during the past year have you failed to keep to that limit?

Yes ☐   No ☐

How often has this happened?

Once only ☐
More than once, less than weekly ☐
More than once a week, but not every day ☐
Usually every day ☐

14. In the past year have you had any trouble at work (or difficulty in carrying out daily routine, if not working) because of anything to do with your drinking (e.g, lateness or inefficiency due to hangovers or drinking at work, etc)?

Yes ☐   No ☐

If you have answered YES to this question, how often has this happened?

Once only ☐
More than once, less than weekly ☐
More than once a week, but not every day ☐
Usually every day ☐

15. **Some people find that there are certain situations or times of day when they often feel restless or irritable without a drink. Has this ever happened to you during the past year?**

          Yes ☐   No ☐

If YES, does it interfere with what you are doing?

          Yes ☐   No ☐

Do others notice you feeling restless?

          Yes ☐   No ☐

Are there times when you can't think of anything else but getting a drink?

          Yes ☐   No ☐

16. **Have you ever experienced trembling in the morning after drinking?**

          Yes ☐   No ☐

If YES, have your hands trembled?

          Yes ☐   No ☐

have your legs shaken?

          Yes ☐   No ☐

has this happened more than once? (legs shaking)

          Yes ☐   No ☐

has your whole body shaken?

          Yes ☐   No ☐

has this happened more than once? (whole body shaking)

          Yes ☐   No ☐

17. **In the past year have you ever had a drink within 3 hours of wakening to help you to relax, cure a hangover or to settle yourself?**

Yes ☐ No ☐

If you have answered YES to this question, how often has this happened?

Once only ☐
More than once, less than weekly ☐
More than once a week, but not every day ☐
Usually every day ☐

18. **Have there been arguments at home (or where you live) in the past year which have been caused by your drinking?**

Yes ☐ No ☐

If you have answered YES to this question, how often has this happened?

Once only ☐
More than once, less than weekly ☐
More than once a week, but not every day ☐
Usually every day ☐

19a. **Have the arguments been with the people you live with and which happened as a result of your drinking ever led to**

you to threaten to leave home?

Yes ☐ No ☐ N.A ☐

you to actually leave home?

Yes ☐ No ☐ N.A ☐

19b. your partner to threaten to leave home?

Yes ☐ No ☐ N.A ☐

your partner to actually leave home?

Yes ☐ No ☐ N.A ☐

20. In the past year have you had any money worries that have been due to your drinking or which have been made worse by your drinking?

Yes ☐   No ☐

Dear

You may remember that when you were a patient in the Western Infirmary a year ago you participated in the research project which I was conducting about alcohol consumption and health. At that time you agreed to being interviewed again one year later.

Your help at that time was greatly appreciated and I am writing to let you know that one of my colleagues, Nurse Rhona Peacock, will be contacting you to arrange to see you at a time which will be suitable for you.

I am very grateful to you for having taken part in the first part of the study and hope that you will be able to help in this last stage of the project.

Yours sincerely

Hazel E Watson (Mrs)
Research Fellow (Nursing)

GREATER GLASGOW HEALTH BOARD

THE WEST ETHICAL COMMITTEE

FORM OF CONSENT FOR PATIENTS/VOLUNTEERS IN CLINICAL RESEARCH PROJECTS

Title of Project

Alcohol Consumption and Health (II)

Patient's Summary

Thank you for participating in the study so far. As a result of your interview it has been decided to invite you to participate in the second stage of the project.

If you agree you will be asked to attend for another interview and blood test in one year's time. All information which you give will be strictly confidential. In the meantime you may be offered a health education pamphlet or be invited to a counselling session about the effects of alcohol on health.

It should be noted that your participation may not be of direct benefit to you, but could help in the development of treatment for the benefit of future patients.

If you do not wish to participate in the study, or wish to withdraw at any time, your care will not be affected.

If you wish to take part your General Practitioner will be advised of your participation and the clinical management that you will undergo.

Consent

I   ....   of   ....

give my consent to the research procedures described above, the nature, purpose and possible consequences of which have been described to me by

....

Signed   ....   Date   ....

Witness   ....

QUESTIONNAIRE for WARD SISTERS,
CHARGE NURSES, STAFF NURSES and ENROLLED NURSES.

Present post .... **Grade** ....

Clinical area/specialty ....

How long have you been in this post? ....

Age: 20-25yrs ☐ 26-30yrs ☐ 31-40yrs ☐ Over 40yrs ☐

Sex: Male ☐ Female ☐

Professional education:

Qualification	Dates of training	College/University
....	....	....
....	....	....
....	....	....
....	....	....
....	....	....

Duration of post-registration/enrolment experience (full-time equivalent) in:-

General nursing .... **Psychiatric nursing** ....

Paediatric nursing .... **Mental handicap nursing** ....

Midwifery ....

Occupational nursing .... **School nursing** ....

Nurse management .... **Nurse education** ....

Clinical nurse specialist:
Please state specialty ....

Community nursing:
Please state whether D.N., H.V. or ....
C.P.N

Other (please specify) ....

Please <u>circle</u> the answers which you consider to be most appropriate answer to the following questions.

1. **When admitting a patient how often do you routinely ask about:**

   a) diet?

   Always   Often   Occasionally   Never

   b) exercise?

   Always   Often   Occasionally   Never

   c) smoking?

   Always   Often   Occasionally   Never

   d) alcohol consumption?

   Always   Often   Occasionally   Never

2. **How important do you think it is for nurses to know how much alcohol their patients drink?**

   Very important   Important   Not important

3. **Have you ever received education about:**

   a) the <u>physical</u> effects of excessive alcohol consumption?

   Yes   No   Can't remember

   b) the <u>psychological</u> effects of excessive alcohol consumption?

   Yes   No   Can't remember

   c) the <u>social</u> effects of excessive alcohol consumption?

   Yes   No   Can't remember

4. Do <u>you</u> give any advice to patients whom you believe are drinking excessively?

   Always   Often   Occasionally   Never

5. If you have answered positively to <u>Question 4</u>, what advice do you give?

   ....
   ....
   ....
   ....
   ....
   ....

6. When you were a student/pupil nurse were you taught what advice you should give to patients whose alcohol consumption is excessive?

   Yes   No   Can't remember

   If you have answered YES to <u>Question 6</u>, did what you were taught differ from what you have given in your answer to <u>Question 5</u>? If so, in what way?

   ....
   ....
   ....
   ....
   ....
   ....

7. Do you have access to pamphlets/leaflets to give to such patients about:

   a) how to reduce their consumption? Yes   No

   b) where they can get help?   Yes   No

8. If you have answered YES to either part of question 7, please list the titles of those leaflets which are available for patients.

....
....
....

9. In your opinion, who should give advice to patients whose drinking is causing them health problems? (You may circle as many options as you feel appropriate)

Doctors	Yes	No
RGNs	Yes	No
RMNs	Yes	No
ENs	Yes	No
Psychologists	Yes	No
Social workers	Yes	No
Others	Yes	No

If YES to "others", please specify:

....

10. Please list the health problems you know of which can result from drinking too much.

....
....
....
....
....
....
....
....
....

11. Did you acquire the knowledge which you have reported in your last answer as a result of: (You may circle as many options as you feel appropriate)

a)	nurse training?	Yes	No
b)	post-registration/enrollment experience?	Yes	No
c)	experience outwith nursing?	Yes	No

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13. **What quantity of the following drinks contains 1 standard unit of alcohol?**

Whisky ....

Wine ....

Sherry ....

Ordinary beer ....

13. **Did you acquire the knowledge which you have reported in your last answer as a result of: (You may circle as many options as you feel appropriate)**

    a)   nurse training?   Yes   No

    b)   post-registration/enrollment experience?   Yes   No

    c)   experience outwith nursing?   Yes   No

14. **What are the "sensible" levels of alcohol consumption per week as suggested by the Scottish Health Education Group for:**

Men ....

Women? ....

15. **Did you acquire the knowledge which you have reported in your last answer as a result of: (You may circle as many options as you feel appropriate)**

    a)   nurse training?   Yes   No

    b)   post-registration/enrolment experience?   Yes   No

    c)   experience outwith nursing?   Yes   No

Please feel free to make any comments.
Thank you for your time and help.

Date as post-marked.

Dear Nurse,

I am currently undertaking a study of the identification and treatment of early problem drinkers. I am interested to learn about the nurse's role in relation to the care of patients who are drinking excessively and am writing to ask if you would be willing to help with my investigation.

I should be most grateful if you would complete the questionnaire which is attached to this letter and return it to me in the internal mail in the envelope provided. The questionnaire is being distributed to a random sample of nurses throughout Glasgow's general hospitals. As it is anonymous it will be impossible to identify any individual's responses or place of work.

I do appreciate the time and effort involved and hope that you will be prepared to help with the study. I hope to have the opportunity of feeding back the findings to you at some time in the future.

Thank you for your help.

Yours sincerely,

Hazel E. Watson (Mrs)
Research Fellow (Nursing)