IMPAIRED CONTROL AS A MEDIATING FACTOR IN THE 'NEGATIVE EXPECTANCY-MOTIVATION FOR RECOVERY' RELATIONSHIP.

& RESEARCH PORTFOLIO

VOLUME ONE

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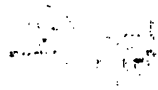August 2001

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Impaired control as a mediating factor in the 'negative expectancy-motivation for recovery' relationship.

& Research Portfolio

Volume one

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1. Small Scale Service Evaluation Project

A description and analysis of one years discharge data from a Clinical Psychology direct access service.

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Abstract

Objectives

1.   To examine the functioning of a clinical psychology direct access service working under routine NHS conditions.
2.   To examine levels of patient attendance .
3.   To establish the degree to which patients benefit from attending and what factors are associated with improved outcomes.
4.   To produce data that can be used in standard setting, through which practice can be improved and evaluated .

Design

A retrospective analysis of discharge data on a cohort of patients discharged from a Clinical Psychology direct access service.

Setting

An out-patient clinical psychology department in the West Sector of Glasgow. The Sector covers a large geographical area and is divided into 3 localities.

Cases

All patients discharged from the Riverside locality between September 1999 - August 2000.

Results

Of the 257 patients discharged, 53 (20%) failed to attend for first appointment. Of the 204 who did attend, 123 (60%) completed treatment and 81 (40%) dropped out. For those who attended 67% improved, this figure rising to 89% improvement rates for those who completed treatment. Eighty-one per cent of patients came from the middle to high areas of deprivation. Interventions were generally brief (average length of treatment is 5 sessions) with 82% of patients attending for less than 8 sessions. Improved outcomes were associated with staying in treatment to completion and being treated for anxiety disorders.

Conclusions

Within the service people are seen with a wide range of psychological problems, many from areas of middle to high deprivation. Examination of attendance rates show that a large proportion never attended or dropped out, with just less than half completing treatment. The service is beneficial to the majority of those who attend, particularly those patients who complete treatment. Interventions were generally brief and were not confined to the 'worried well'. The study has provided data which can be used for standard setting for our own and similar services .

A description and analysis of one years discharge data from a clinical psychology direct access service.

Introduction.

Since the government introduced the concept of clinical governance in 1997, there has been a requirement for services throughout the NHS to carry out clinical audit and have demonstrable evidence based practice.[1] The principles of clinical governance provide guidelines for the provision of services in the NHS.[2] It is introduced as a comprehensive approach to quality. In essence, these principles are about providing clinically effective treatments, having the infrastructure required to support them, equity of access to services, listening to the consumers and accountability of practice. In addition to ensuring that services meet these criteria, they should also be efficient and cost-effective.

Viewed in the context of clinical governance, evaluation of practice is now high on the clinical agenda within NHS settings. This had led clinical psychology services to pay increasing attention to a systematic process of evaluating practices with the aim being to offer a service which is as clinically effective and efficient as possible. Clinical audit has become a standard method of examining the practice of NHS services. The framework proposed for good clinical audit is the 'audit cycle'.[3]

In practice, the first and second stages in the audit process depend on the examination of current practice and the routine collection of data. It is crucial to have a clear knowledge of the strengths and weaknesses of current practice in order to plan changes to service delivery aimed at overall improvement. It is also necessary to have a clear understanding of current 'measures of effectiveness' or 'standards' through which it can be ascertained whether levels of success are being maintained or improved upon if changes are implemented. These are the stages further on in the audit cycle.

Within the service evaluation literature, clinical psychologists are now reporting on methods to examine the quality of care offered and the resources required to achieve these. In the area of clinical psychology, studies which have examined services have tended to focus on aspects of the practice which are relatively straightforward to

measure and set standards on. Factors such as waiting time to first appointment,[4] patient satisfaction with the service [5] and attendance rates [6-7] have been more apparent in the literature than more complex areas such as considering clinical outcomes. One of the main reasons for this is that measuring outcomes is a complex task and there is no established method which adequately measures psychological outcome.[8]

A number of patient characteristics are known to have a bearing on a patient's journey through mental health services. Examples include the finding that there is a higher prevalence of psychiatric problems amongst the poorest sections of society [9] yet these are the patients who are least likely to continue in and benefit from treatment.[6,10] A factor which is shown to have a bearing on outcome is patient attendance rates. The number of sessions or 'doses' of psychological treatment received is related to degree of improvement.[11] The dose-effect model indicates that most patient gains are made within the first 8 sessions of therapy. Other studies have suggested that significant improvements can be found during the first 4-6 sessions of cognitive therapy.[12] However, patients with more chronic and severe problems will take longer to improve.[13]

Some factors which are likely to have a bearing on patients progress with clinical psychology services are outwith the control of the psychologist.[8] Examples of these factors include poverty and the occurrence of significant adverse life events. In evaluating clinical psychology services it would therefore seem important to consider the demographic characteristics of those attending, the type of diagnosis, time in treatment and include a measure of outcome which can take into account all of the above.

The current study is intended to examine the functioning of a clinical psychology direct access service and provide data relevant to the above issues. This has been done by describing and analysing the discharge data of one locality which forms one third of a large clinical psychology direct access service. It is intended to improve our understanding of the patient population we see. In particular it will examine levels of attendance, whether patients benefit from our psychological intervention and consider some of the factors associated with progress. The purpose of this is to provide data which will be useful in standard setting for factors such as attendance rates and outcomes in a clinical psychology direct access service working

under routine NHS conditions. This is a fundamental step in the 'audit cycle' and it is anticipated that it will add to the findings of other reports of attendance and improvement rates in comparable settings.[14-15]

The Service.

In order to provide a context for the present study, the organisation of clinical psychology services in Glasgow will be briefly outlined. In 1995 the Psychology Directorate was formed when all of the clinical psychology services in the Greater Glasgow Community and Mental Health Services Trust merged into one professional structure. The Adult Mental Health Services are currently divided into the four geographical sectors of the city, North, South, East and West.

The setting for the current study is a clinical psychology department covering the West sector of Glasgow. The catchment area comprises a total population of 260,000 and is divided into 3 localities. The discharge data of one of these localities (Riverside) will be scrutinized. There are 56,055 adults between the ages of 16-64 living in Riverside locality. This locality covers an area with a mixture of affluent and economically underprivileged districts. However, only 22% of the Riverside adult population live in areas considered to be affluent, with the remaining 78% living in areas described as middle to highly deprived.[16] These differences allow for direct comparisons to be made between these areas. The department of clinical psychology is based centrally within the Riverside locality. It is equally accessible to patients throughout the locality and all of the patients referred to this service are seen within the department.

During the study period (September 1999-August 2000) the Riverside direct access service was provided by 6 clinical psychologists (2.2 wte) and these personnel remained consistent throughout. All of the psychologists have posts split between the direct access service for Riverside and other parts of our wider service such as Community Mental Health Teams, the Addiction Service and links with Glasgow University doctoral course in clinical psychology. The service offers one-to-one therapy with occasional use of groups, working largely within a cognitive-behavioural framework. The waiting list was stable at 3-4 months.

Method

Design

A retrospective analysis and description of data on all patients discharged from one locality (one third of service) over a 12-month period was undertaken. There were 257 patients discharged from Riverside locality direct access service between September 1999- August 2000. The majority of these referrals (91%) came from General Practitioners, 5.5% from Psychiatry and the remaining small number from General Medicine and Psychotherapy.

The locality receives around 400 direct access referrals per year. An opt-in system is operated whereby only patients who opt-in to attend will be offered an appointment. As they are nearing the top of the waiting list they are contacted by post. Patients who opt-in are usually seen within the next 2-3 weeks. During this 12-month study period 84 people referred failed to opt-in and were not offered an appointment.

Data is routinely recorded by the psychologist, at the point of discharge ,on a standard form and includes the demographic characteristics of age, gender and post-code. It also includes details of, primary diagnosis using ICD-10[17], number of sessions attended and a therapist rating of outcome (see Appendix 1). Carstairs Deprivation Categories were used to classify postcodes into a particular deprivation category on a scale of 1-7 where 1 is the most affluent and 7 is the most deprived area .[18] This ranking system is based on a combination of variables including unemployment, house and car ownership. This method of categorising socio-economic status was chosen as it is comprehensive, is available for all Glasgow post-codes and these categories now provide the basis for analysis in health differences in Scotland.[18]

Status of patients at discharge in terms of treatment completers, drop-outs or non-attenders was collected for each patient at the time of the analysis. Individual psychologists were asked to review their own discharged caseload and categorise each patient in terms of their status at the point of discharge. Treatment completers were defined as those patients who had completed the planned intervention and there was agreement between the patient and psychologist to the ending of therapy. Those patients were there was no agreement made regarding closing the intervention but who had stopped attending were classified as 'drop-outs'. The group of patients who were offered an appointment but did not attend at all were classified as 'non-attenders'. .

The measure of outcome was gathered by clinical judgement. At the time of discharge psychologists were asked to rate the progress of patients on a five point scale where 1= worse, 2= no change, 3= slightly improved, 4= moderately improved and 5= substantially improved. This outcome measure was chosen in the absence of a standard objective tool which adequately measures treatment outcomes. Measuring outcomes is a complex task which should take into account the effectiveness of psychological intervention based on the complexity and severity of the problems presented.[8] Clinical judgement is a highly sophisticated, flexible skill which can be sensitive to the complexities which patients present with. It has been widely used in similar investigations in mental health settings.[14-15,19]

Procedure

The routine data sheets completed by the psychologist for every patient discharged were scrutinized. Primary diagnosis was recorded by the psychologist at the point of discharge for all patients who attended. For those who had not attended for the first appointment this was taken from the referral letter. If more than one problem type was noted, the one that would take priority as the ICD-10 primary diagnosis was recorded. All missing data from the sheets was retrieved from a variety of other primary sources including consulting individual psychologists, case-notes, original referral letters and the database held in the department on every referral received. A separate database was set up using SPSS for Windows through which the data was subjected to descriptive and inferential statistics.

Results

Demographic Characteristics of the Sample.

Of the 257 patient discharged, 155 (60%) were female and 102 (40%) male. The average age of patients was 36 years (range 17-79 years, SD,11.2), with the age distribution skewed towards the younger end of the distribution.

Table 1 shows the deprivation category frequencies for the sample. This shows that we are seeing people from the range of categories across Riverside although 81% of our client group are from middle to high areas of deprivation.

**Table 1   Deprivation Category Frequencies of Discharged Sample
(1= most affluent, 7= least affluent)**

Dep Cat	n	%
1	0	(0%)
2 & 3	50	(19%)
4 & 5	126	(49%)
6 & 7	81	(32%)

Primary Diagnosis

Table 2 reports frequency counts of the primary diagnosis of patients. Problems treated were classified into ICD-10 diagnostic criteria (for a full outline of problems treated see Appendix 1). The category of sexual problems / general medicine incorporates those patients who presented with behavioural syndromes associated with physiological disturbances and physical factors such as sexual dysfunction, sleep disorders and problems related to physical health. Three cases were unclassifiable according to ICD10 as they had been referred for neuropsychological assessment.

Table 2   Primary Diagnosis

	n	%
Neurotic / Stress / Somatoform	126	(49%)
Affective / Adjustment Disorders	95	(37%)
Sexual Problems / General Medicine	16	(6.2%)
Eating / Habit / Substance Abuse	17	(6.6%)
Not Classified	3	(1.2%)

This table shows that anxiety disorders account for 49% of the sample. Affective / Adjustment disorders are the next largest group accounting for 37% of patients. The

table highlights the fact that we are treating a range of psychological problems within the service, but almost half of our patient population have been treated for anxiety disorders.

Number of Sessions.

Figure 1 displays the pathway to discharge for patients. Of the 257 who opt-ed in to attend, 53 never attended for first appointment and were discharged at that point. Of the 204 patients who attended the service 81 (40%) dropped-out prior to completing treatment and were discharged. The remaining 123 (60%) stayed in treatment to completion prior to being discharged.

Figure 1. Summary of pathway to discharge from Riverside locality during study period.
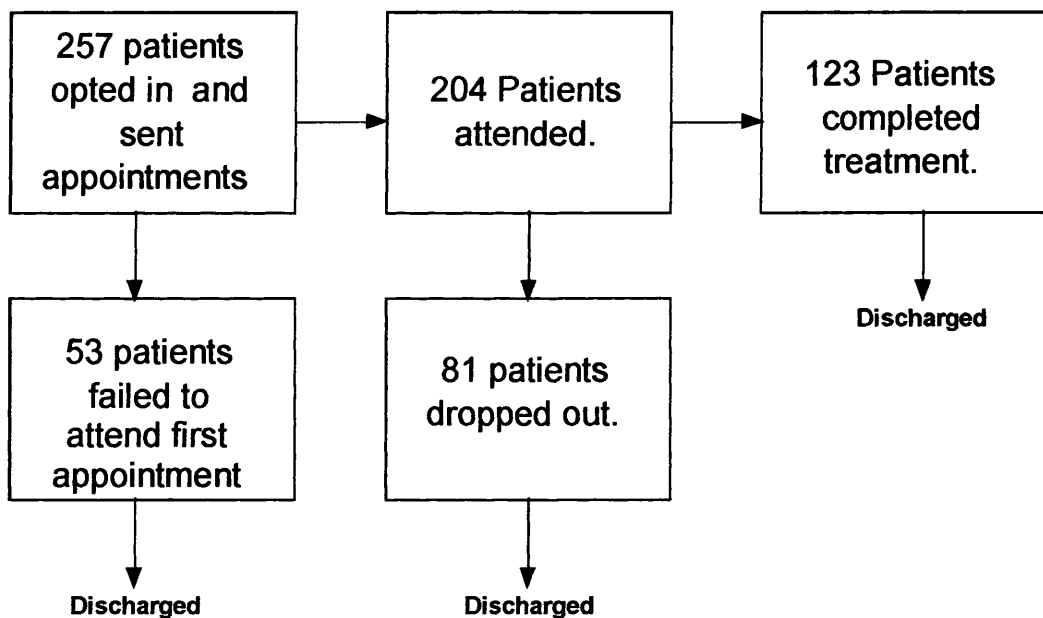
Table 3 presents the number of patients who did attend the service (n = 204) categorised by number of sessions attended. It has previously been reported that there is a large drop-out rate after the first and second appointments, so these figures are reported individually.[7] It has been suggested that most treatment gains are made in the first 8 sessions, so this was considered the next major category to consider.[11] After this

the numbers reported are much smaller and categories chosen account for this.

The table confirms that there is a large drop-out rate after the first and again after the second session. The majority of patients attended for 8 sessions or less (85%), with only a small number requiring more than 20 sessions (2%). The average number of sessions attended was 5 (range 1-31, S D = 4.8)

Table 3   Number of patients by session frequency

Sessions attended	n	%
1	46	(23%)
2	43	(21%)
3-8	84	(41%)
9-12	19	(9%)
13-20	8	(4%)
> 20	4	(2%)

Intervention Closures

The 257 patients discharged during the study period were categorized into 3 groups depending on their status at the time of discharge; treatment completers (n= 123), drop-outs (n= 81) or non-attenders (n= 53). These groups were then compared in terms of demographic characteristics and primary diagnosis. There was no difference found between the 3 groups in terms of primary diagnosis (chi-square = 4.40, df = 11, p<0.622). See Appendix 1 for a display of these groups with primary diagnosis . In terms of the demographic characteristics of gender and age for the 3 groups, there is no difference between the mean age which was 36 years for treatment completers, 37 years for non-attenders and 33 years for drop-outs. Although females appeared slightly more represented in the group of treatment completers (64% of this group were female) in comparison to the other 2 groups (both had 57% of the group female), this was not

significant (chi-square = 1.51, df = 5 , p<0.47).

An observable difference appeared to be found by comparing the groups in terms of the proportion that came from different deprivation categories. Figure 2 displays the 3 groups of patients in terms of the proportion that fall into the 'low-middle' and 'middle-high' areas of deprivation. The categories were grouped like this to allow statistical analysis to be carried out given the small numbers.

Although there is a trend found that the non-attender group has a larger proportion of patients from higher areas of deprivation, this was not statistically significant (chi- square = 4.34, df = 5, p<0.112).

Figure 2. Displays the 3 groups of patients at discharge by Deprivation Category

	Dep Cat 2-3	Dep Cat 4-7	Total
▣ Non-Attender	5	48	53
▧ Drop-out	17	64	81
☐ Completed	28	95	123
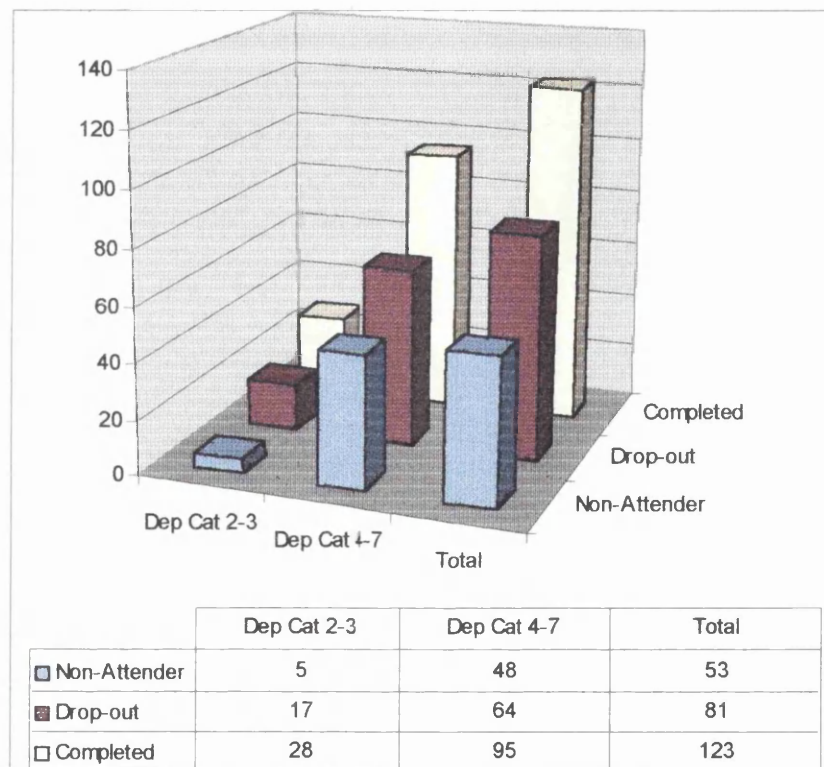
Fig 2

Clinical Outcomes

Table 4 summarizes the psychologists rating of patient improvement. Ratings were made for all who attended, so even the drop-outs were included and many of these were rated as having had some benefit from attending. Sixty-seven per cent of patients who

attended were rated as having improved and 33% failed to improve . Forty-six per cent of attenders were considered to have 'moderately or substantially' improved.

Table 4   Summary of Outcome Ratings

	Rating	n	(%)
1	(worse)	1	(0.5%)
2	(no change)	66	(32.5%)
3	(slight improvement)	43	(21%)
4	(moderate improvement)	41	(20%)
5	(substantial improvement)	53	(26%)

Outcomes and mediating variables

As it had been reported that therapy outcomes are mediated by other factors, an attempt was made to specifically investigate the effect on outcome of ; 1. *Number of sessions attended* ('doses' of treatment), 2. *Primary diagnosis*, 3. *Deprivation category*, 4. *Whether treatment was complete.*

A series of chi-square analyses were carried out considering the association between outcome and each of the above variables. Given that multiple comparisons are being made with the one outcome variable, the Bonferroni correction method was applied and the adjusted P value is p <0.0125 to indicate significance.[20]

The results of the chi-square analyses are displayed in Table 5.

Table 5   Association of therapy outcome with mediating variables

Association of therapy outcome rating with ;	Chi-square	d f.	P- level
Number of sessions attended	64.64	4	0.001
Primary Diagnosis	14.66	6	0.023
Deprivation Category	1.92	4	0.750
Treatment complete	73.30	2	0.001

Looking at number of sessions attended and its influence on outcome there appears to be a highly significant relationship between increasing number of sessions attended and improved outcome for up to 12 sessions. Therefore, up to 12 sessions people improve with more 'doses' of treatment. Beyond this number it is not possible to say if there is a law of diminishing returns as the numbers in the current sample are too small.

Related to this is the finding that good outcomes are associated with completing treatment. If people stay in treatment to completion they are more likely to derive benefit. Eighty-nine per cent of treatment completers are rated as having improved. If patients drop out of treatment only 34% are reported to having improved.

Considering the effect of socio-economic status on outcome by looking at deprivation categories, it was found that Deprivation Category had no bearing on the outcome of therapy. People from highly deprived areas are doing just as well in treatment as those from more affluent areas. However, it was previously reported (see Fig 2) that people from more deprived areas were less likely to attend for their first appointment. Once they actually do come, it appears from this sample that their socio-economic status does not have a bearing on outcome.

Finally, considering whether certain presenting problems / primary diagnosis were associated with outcome, a clear trend was found. Although not statistically significant using the adjusted P value, patients being treated for anxiety disorders generally show greater improvement rates.

Discussion

The results of the study provide an outline of the functioning of part (one third) of a larger clinical psychology direct access service working under routine NHS conditions. By examining discharge data, it was found that 20% 0f patients failed to attend the service and 80% attended for at least one session. Of those who attended, 60% completed treatment and 40% dropped out. The service was beneficial to those who attended, particularly those who completed treatment. Interventions were generally brief (average length of treatment is 5 sessions) with 85% of patients attending for 8 sessions or less. A range of diagnosis were treated but anxiety disorders were the primary diagnosis in almost half the patients discharged. The service is not confined to the 'worried well' as 81% of patients come from middle to highly deprived areas. Improved outcomes were associated with staying in treatment to completion and being treated for anxiety disorders.

The results of these analyses are useful in considering stages 1 and 2 of the 'audit cycle' for levels of attendance. The DNA and drop-out rates are similar to those reported in other NHS clinical psychology departments and therefore can be considered typical.[7,10,21] Overall an average drop-out rate of one third is considered the norm in British clinical psychology services.[6] The large drop-out rates following the first and second session has previously been found.[7] However, a number of these patients would have received assessment only and may not have been offered further treatment. For those who did drop-out early, there have been some suggestions as to why patients may terminate therapy early on in the process.[6] Examples include fear of being stigmatised with mental health problems, practical obstacles to attending therapy and inappropriate expectations, such as a "quick fix" not being available.

The study demonstrates that the majority of our patients are attending for brief psychological therapy (average length of treatment is 5 sessions). Despite this relatively short time people are in treatment, the results show that the service is highly beneficial to patients as 67% of those who attend were rated as having improved. This rating rises to 89% for those patients who complete a planned intervention.

Patients were seen across the range of deprivation categories, similar to, but not entirely consistent with the stratification in Riverside locality . Twenty-six per cent of the Riverside population live in Dep Cats 6&7, yet 32% of our patient group are from

those areas. This demonstrates that in direct access settings we are not just seeing the 'worried well' for long episodes of treatment, which has been a common misconception. An encouraging finding was that patients from middle to highly deprived areas are doing just as well in treatment. However, that is when they actually engage in therapy as the trend found was that they are less likely to attend their first appointment. Lower SES has consistently been found to predict non-attendance and early termination from mental health services. Why lower SES predicts non-attendance rates is not absolutely clear, although these patients having greater practical obstacles to attending has been suggested.[6,10] The location of the clinical psychology department within Riverside locality is central and is on one of Glasgow's main roads with excellent public transport available. Therefore equity of access in the terms of geographical location is unlikely to be a factor for this sample of patients.

The largest group of patients discharged had been treated for anxiety disorders and this has been the biggest group treated in similar clinical psychology settings.[14-15] Although not statistically significant there was a clear trend found which associated this group with the best outcomes. Good success rates with this group of patients have been reported previously in published studies and these results suggest that these patients are appropriately being treated within our services.[14,15]

In examining the relationship between clinical outcome and other influencing variables interesting findings emerge. It was found that increasing number of sessions attended up to 12 is associated with better outcome. However, this finding does not necessarily mean that longer-term therapy will result in greater benefit to the patient, as the vast majority of patients attended for brief therapy with good rates of improvement. This suggests that the service is functioning efficiently in terms of benefit to patients and with generally brief cognitive-behavioural approaches. This is in keeping with those studies which have reported significant rates of improvement after 4-6 sessions of cognitive therapy, [12] or in 8 sessions as proposed by the dose-effect curve.[11] A key factor seems clearly related to completing the planned intervention rather than the length of treatment alone.

The present study is a description and analysis of routine practice and has produced findings which are comparable to other clinical psychology services that have described their functioning, attendance levels and success rates.[14,15] The results have

helped clarify two main service-related issues. Firstly the service has been clinically effective for those who attended, particularly for the group of 123 (60%) who completed treatment. Secondly, the service is efficient in its use of resources, as the majority of patients required only brief psychological intervention with good rates of improvement.

The study provides data which can be used to set standards against which the effects of changes to our practice can be measured. One of the main criticisms about clinical psychology services is the length of our waiting lists, which are at an average of 17.5 weeks across the nation. [22] This aspect of our service is becoming increasingly unacceptable to both GP's and patients'.[23] While our treatments are clinically effective to those who attend, we are a scarce resource and are only offering a service to a relatively small group. Within the context of clinical governance and commitment to overall quality of service, we now have to consider how we can broaden our services to patients and GP's.[24] The aim of any change being to become more accessible to consumers but without compromising on clinical effectiveness.

Ways in which to improve our data collection and methods of evaluating outcomes must be considered. A single measure of outcome is inadequate and the potential for bias in ratings from psychologists is acknowledged. Patient rating scales and a global rating of psychosocial functioning in addition to problem outcome would be more comprehensive. Using follow-up data to assess therapeutic benefits over time and comparing approaches to demonstrate that one intervention is more or less beneficial than another, would further improve our investigations. This current study provides initial standards of levels of attendance and success which could provide outcome targets for our own and similar services. We can use these to re-audit and evaluate aspects of our service that we will be attempting to improve upon. Any significant departures from these criteria should therefore lead to further investigation.

This study has attempted to respond to some of the principles of clinical governance and consider them within our own service. It is an initial attempt to examine our routine practice in terms of clinical effectiveness and efficiency and acknowledge the importance of providing treatment which is responsive to the needs of GP's and patients in our area. It has provided the initial structure required for the development and monitoring of clinical standards for our own department, and may be

useful to others providing similar services in other NHS settings.

References

1. **Department of Health. The New NHS: Modern, dependable.** London HMSO 1997.

2. **Clinical Governance,** MEL (1998) 75.

3. **Firth - Cozens, J.** Audit in Mental Health Services Erlbaum (UK) 1993.

4. **Cape, J.** Clinical audit in the NHS. *Clinical Psychology Forum,* 1995; 86, 12-16.

5. **Barry, R., Jones, S.** Developing and audit system for clinical psychology. *Clinical* Psychology Forum,1997; 102, 23-26.

6. **Hughes, I.** Why do they stop coming? Reasons for therapy termination by adult clinical psychology clients. *Clinical Psychology Forum,* 1995; 81, 7-11.

7. **Madden, S., Hinks, M.** Appointment keeping with clinical psychologists. *Clinical Psychology Forum,* 1987, 10, 15-18.

8. **Berger, M.** Outcomes and effectiveness in clinical psychology practice. DCP Occasional Paper No 1. Leicester: British Psychological Society, 1996.

9. **Jenkins, R., Bebbington, P., Brugha, T., Farrell, M., Lewis., G. and Meltzer., H.** The British Psychiatric Morbidity Survey, *British Journal of Psychiatry* 1998; 1773, 4-7.

10. **Trepka, C.** Attrition from an out-patient psychology clinic. *British Journal of Medical Psychology.* 1986; 59, 181-186.

11. **Howard, K. I., Kopta, S. M., Krause, M.S., Orlinsky, D.E.** The Dose Effect Relationship in Psychotherapy. *American Psychologist,* 1986; 41, 2: 159-164.

12. **Rush, J. A., Watkins, J. T.** Group verses individual cognitive therapy; A pilot study. *Cognitive Therapy and Research,* 1981; 5, (1), 95-103.

13. **Scott, D. J., Nightingale. A.** Out-patient psychodynamic psychotherapy services: An analysis of patient discharge data. *Health Bulletin,* 2000; 58 (3), 177-185.

14. **McPherson, F. M., Watson, P. J., Taylor, V. J.** Audit of an adult mental health out-patient clinical psychology service. *Clinical Psychology Forum,* 1996; 98, 26-28.

15. **Espie, C. A., White, J.** The effectiveness of psychological intervention in primary care; a comparative analysis of outcome ratings. *Journal of the Royal College of General Practitioners,* 1986; 36, 310-312.

16. **McLoone, P.** Carstairs scores for Scottish Post Code Sectors from the 1991 Census. Public Health Research Unit, Univ. of Glasgow, 1994.

17. **The ICD-10 Classification of Mental and Behavioural Disorders:** Clinical descriptions and diagnostic guidelines: World Health Organisation, Geneva, 1992.

18. **Carstairs. V., Morris, R.** Deprivation and Health in Scotland. Aberdeen University Press. 1991.

19. **Hill, J., Evers, C., Thomas, S., Stevenson, J.** Clinical audit in clinical psychology: black hole or worm hole? *Clinical Psychology Forum,* 1999, 24-27.

20. **Altman, D. G.** Practical statistics for Medical Research. Chapman and Hall. London, 1991.

21. **Markman, P., Beeney, E.** DNA rates and the effect of 'opting-in' to a clinical psychology service. *Clinical Psychology Forum,* 1990; 29, 9-10

22. **Division of Clinical Psychology.** Clinical Psychologists caseloads and waiting lists: the DCP Survey. *Clinical Psychology Forum,* 1997; 110, 40-46.

23. **McAuliffe, E., MacLachan, M.** Consumers views of mental health services: the good, the bad and some suggestions for improvements. *Clinical Psychology Forum,* 1992; 47, 16-19.

24. **White, J.** Clinical psychology in primary care. *Primary Care Psychology,* 2001, in print.

2. Major Research Project Literature Review

Motivation to Change Addictive Behaviour

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Abstract

Helping people change addictive behaviour is an enduring challenge to clinicians. Over recent years attention has been focussing on what makes people *decide to stop* addictive behaviours, rather than which treatment is most effective per se. 'Motivation for change' has emerged as a key concept in understanding recovery from addictions, and it is considered a necessary component if any treatments are to be effective. Various theories have been offered to explain the initiation, maintenance and recovery from addictive behaviours. Although there are differences in conceptualising the phenomenon of 'motivation for change' among researchers, there is general agreement that there is a compelling need to understand it, and how it relates to recovery. This paper will describe some of the leading theories to account for changing addictive behaviour, with an emphasis on alcohol misuse, and highlight the main treatment approaches derived from them. Understanding of the nature of 'motivation' is still incomplete, as no one model fully accounts for all empirical findings. Finally, it is suggested that theoretical consideration should now be given to how predictive models interact, as further elucidation will require more integrative examinations of why some people change their behaviour and others do not, in the face of major negative consequences.

Introduction

Motivation for recovery has been a rapidly growing area of interest within the addiction field for the last 20 years. Different ways of conceptualising the phenomenon of motivation have emerged. Despite such differences in conceptualisation, there is general agreement among researchers that there is a compelling need to understand 'motivation' and how it relates to recovery. Helping people change addictive, harmful behaviour is an enduring challenge for clinicians and client motivation is considered necessary for treatment to be effective. (Simpson, Joe & Rowan-Szal et al, 1995).

We have come a long way from the historically held view of motivation as a personality trait which clients either do or do not possess. Lack of motivation was characterized by defence mechanisms such as denial, rationalisation and the projection of blame and it was these mechanisms which impeded recovery. Current views of motivation can account for the complex nature of the construct and the fact that it can be influenced by a variety of intrinsic and extrinsic factors (Joe, Simpson & Broome, 1998). Although *extrinsic factors* are often cited as the main reason people come for help e.g. legal or employment issues or marital dispute, it is the *intrinsic factors* that are considered more fundamental to the recovery process e.g. confidence in ability to change drinking and the perceived costs and benefits of change (Cunningham, Sobell & Sobell et al, 1994). Intrinsic factors have attracted considerable research attention in the search to understand why some people are successful and others not in their attempts to change addictive behaviour. Related to this is the puzzle of why some people are surrounded by alcohol-related problems yet fail to change their drinking in response.

Current conceptualisations of motivation acknowledge the complex and dynamic nature of behaviour change. There have been various theoretical perspectives offered to account for the initiation, maintenance and change of addictive behaviour. The purpose of this review is to highlight the contributions of some of the leading theories of behaviour change and their application to recovery from addictive behaviours. It is crucial for those in the clinical arena to understand the importance of 'motivation for recovery' as this phenomenon has been found to over-ride 'treatment' in terms of drinking outcome (Project MATCH research group, 1997). In doing this it will

be useful to briefly consider those who recover from addictions without the help of formal treatment and some of the ways 'non-specific' effects of treatment have been found to influence recovery. The Transtheoretical Model of Change will also be outlined due to its widespread influence and application. Its uses and criticisms will be briefly described. The contribution of Social Learning Theories, to the understanding of addictive behaviour, have been enormous and have attracted a broad research base. The central tenents of the social learning perspective predict multiple pathways to addictive behaviour. Theories grounded in the social learning perspective reviewed here will be Banduras central concepts of self-efficacy and outcome expectancy models. Of particular interest to this review is a recent motivational model of restraint from drinking proposed by McMahon and Jones (1993) which is based entirely on negative alcohol expectancy. Also, self-regulation theory will be briefly outlined as it has its basis in the social learning perspective, and has played a central role in accounting for addictive problems and understanding recovery.

The therapeutic interventions, based on each of the above theories proposed to enhance behaviour change, will be out-lined. Finally, I will highlight the importance of linking these constructs drawn from social learning perspectives, and suggest that a more integrated approach is required to comprehend the various strands of motivation. Suggestions as to how to extend the question of motivation for further research will be made.

Similarities of Natural and Treatment-assisted Recovery.

Most people with substance misuse problems in the general population overcome their problem without ever receiving professional help. Only a small proportion of problem drinkers present for help (Sobell, 1991). Most change is occurring outwith the context of formal treatment. This has led researchers to suggest that people overcoming addictive behaviour go through the same change process whether or not they receive treatment (Prochaska & Di Clemente, 1984). The crucial component of change is that a 'decision' has been made and a commitment to change has been carried out (Miller & Rollnick, 1991). Related to this is a finding in the literature that measures of treatment intensity i.e. outpatient/in-patient, short/longer treatments do not produce overall

differences in outcome (Miller & Hester, 1986). There is growing evidence that brief interventions can have just as significant an impact on assisting change as longer more traditional treatment approaches (Project MATCH research group, 1997). As brief interventions do not provide a skills training component, cue exposure or medication, the primary component of change is considered 'motivational'. Brief interventions help trigger change by assisting an individual to make a decision and commitment to change. Once this has been done, the individual can utilise their existing resources to accomplish change, with little more input from 'treatment' (Miller & Rollnick, 1991).

Non-specific effects of intervention have been found to contribute to change. Examples of this include findings that placebo medication can be just as successful in clinical outcome as active medication and that it is compliance with treatment that is crucial (Fuller, 1989). There are links between therapist style and drinking outcome. Clients show better short and long-term drinking outcomes when treated by therapists who display high levels of empathy as opposed to a more confrontational style (Miller, Benefield & Tonigan, 1993). All of this demonstrates that it is not 'treatment events' alone that lead to behaviour change. The state of readiness to change of the individual and other 'non-specific' factors are important in determining outcome.

The Transtheoretical Model of Change.

A model which has had enormous impact on the conceptualisation of motivation to change addictive behaviour is the transtheoretical model proposed by Prochaska & Di Clemente (1984). It is the 'stages of change' component of this model which has emerged as its key component. This model is primarily descriptive and states how people are thought to change rather than why they change. Originally developed to explain self-change in smokers, its application has become widespread and is used in relation to many health-related behaviours (Emmons, Marcus, Linnan et al, 1994).

The central concept in this model is that behaviour change takes place by progression through a series of five discrete stages; Precontemplation, Contemplation, Preparation, Action and Maintenance. Within this view change occurs by advancing from one stage to the next in progression. The stages are described as a 'wheel of

change' as it is recognised that individuals more round the wheel, progressing through the stages and it is normal for a person to exit from the wheel when they relapse, but re-enter it and start the process again. The movement is therefore cyclical rather than linear and it is considered typical to go round the wheel several times before achieving stable change. Prochaska, Velcer, Di Clemente et al, (1988) found that smokers went round the wheel on average of four times before stopping altogether.

One of the main appeals of this theory to those working within the alcohol field is that it provides a description to account for what they see in the counselling room. Matching therapeutic strategies to the 'stage of change' clients present in makes intuitive sense. In the earlier stages of change clients benefit more from exploring the costs and benefits of changing rather than action-orientated therapy (Heather, Rollnick & Bell, 1993). However the notion that specific interventions can be matched to particular stages has not always been confirmed (Project MATCH research group, 1997). It has been suggested that this may be due to the oversimplification of the link between stages and particular interventions and that it is maintaining congruence with the client that is more important (Rollnick, 1998).

Despite its overall appeal and acceptance this model has attracted criticism (Davidson, 1998). Criticism includes those directed towards stage models in general. The idea that behaviour change is described as occurring in discrete categories rather than on a continuum is considered a weakness in the model and raises a question over its internal validity. Other researchers have suggested that people changing addictive behaviour do not necessarily pass through all of the stages in progression (Orford, Somers & Daniels, 1992; Sutton, 1996). Because the model is more descriptive of dispositional states rather than providing an explanation of the initiation of addictive behaviour it has even been described as atheoretical (Davidson, 1992). Despite its criticisms the stages of change model has clearly highlighted the importance of assessing intention and motivation in the treatment of addictive behaviour (Stockwell, 1992). It remains an influential model to describe readiness for change in a variety of problem behaviours.

Contribution of Social Learning Theory.

The social learning perspective on understanding the initiation, maintenance and change of addictive behaviour has been extensively researched. It provides an explanation of the processes by which individuals acquire behaviour and can be coordinated with other models because it; incorporates the individuals biological vulnerability as well as experience, includes environmental antecedents and consequences of behaviour, and highlights the contribution of cognitive processes whose presence or absence can explain addictive behaviour (Institute of Medicine Report, 1992).

Unique to these perspectives, is the view that the individual is an active participant in the learning process. As they have learned to misuse alcohol, so they can learn to change their alcohol-related behaviour. As there are multiple pathways to alcohol use, likewise the same processes account for motivation to change. The three models emerging from social learning theory, which have attracted interest in the alcohol field are; 1. *Self-efficacy*, 2. *Outcome expectancy*, 3. *Self-regulation.*

Self-efficacy.

Bandura introduced the concept of Self-efficacy in 1977 and since then it has become one of the most influential frameworks to be applied to problem drinking and specifically the failure to maintain change. Self-efficacy is defined as an individuals appraisal of his/her ability to perform a specified behaviour. People with alcohol problems often express feeling overwhelmed by a lack of confidence to cope with ordinary life situations without alcohol. The predictive ability of self-efficacy has been supported by many studies in the addiction field (Bandura, 1994).

Self-efficacy theory has been central to the development of treatment interventions with problem-drinkers whereby increasing self-efficacy is considered a critical process in recovery (Annis, 1986; Annis & Davis, 1989). Relapse prevention treatments are based on facilitating an increase in an individuals self-efficacy. They involve a wide range of cognitive-behavioural strategies to help reduce the likelihood of relapse occurring, and to restore self-efficacy following setbacks. Within this model shifts in self-efficacy are considered to precede behaviour change.

Outcome Expectancies.

Alcohol outcome expectancies are the beliefs about the likely effect of alcohol and have been the focus of a lot of research attention in recent years. Presented alongside self-efficacy in Bandura's original model of behaviour change (Bandura, 1977) alcohol consumption is explained by the premise that an individual will drink as a result of having expectations about the reinforcing effects of alcohol. Positive expectancies about the effects of alcohol are recognised as representing motivation to drink and negative expectancies as motivation to restrain from drinking (McMahon & Jones 1993; Jones & McMahon, 1998). What is important is that it provides a continuum framework rather than a stage model to account for the initiation of alcohol use, motivation to continue using it and motivation to restrain.

Outcome expectancies are reliable predictors of alcohol consumption in that the higher the positive expectancies people have about the effects of drinking, the more they drink (Brown, 1985; Mooney, Fromme & Kivlahan et al, 1987). This pattern has been found across the range of social to problem to dependant drinkers. Positive outcomes of drinking are more immediate and considered more powerful in influencing drinking decisions initially than negative outcomes. Also, positive expectancies are more readily retrieved from memory during the initial and most critical phase of a drinking episode (Stacy, Widaman & Marlatt, 1990).

Motivation to stop drinking has recently been the focus of research considering the role of negative alcohol expectancies. McMahon & Jones (1993) have proposed a theory of motivation for recovery based entirely on negative expectancy. They cite evidence from individuals, who have recovered spontaneously and with formal treatment, stating that it is the anticipation of continuing or worsening negative consequences, which leads to change. Their motivational model is based on the assumption that adequate problem recognition has to take place for negative expectancy to develop (Jones & McMahon, 1998). They propose that negative expectancy increases with consumption in normal social drinkers and that this rise happens silently until a critical level is reached. Once at this threshold negative expectancy becomes more powerful in influencing alcohol decisions. They describe a problem recognition model,

which consists of three stages. Firstly the individual has to recognise that they are experiencing problems and secondly, accept that these problems are caused by their drinking (rather than being due to their spouse, employment demands etc.). The third stage necessary is that they must be able to predict that the problems are likely to get worse if they do not reduce their drinking. In this model people continue to drink, despite serious negative consequences, because they do not attribute their problems to their drinking and continue to believe there are positive benefits to be had by continuing to drink. Jones and McMahon (1998) describe this as 'faulty appraisal' of negative experiences and this inhibits recovery. In this way negative experiences are not translated into negative expectancies.

In a series of treatment outcome studies, higher negative expectancies at treatment intake are associated with more successful treatment outcome (Jones & McMahon 1994a, 1994b, 1996a, 1996b and McMahon & Jones, 1996). This lead to the suggestion that treatment strategies should focus on increasing negative expectancy rather than reducing positive expectancy which had previously been thought to be the way forward (Brown, 1985). Such treatment strategies have been found to be effective (McMahon, Jones & Smith, 1996; Saunders, 1996).

In addition to recognising that an individuals expectation of drinking consequences will influence behaviour, expectancy researchers have began to explore other factors which may mediate this relationship. Including a measure of 'value of outcome' (i.e.. desirability of the expected consequences) has been found to increase the predictive ability of expectancies on alcohol consumption (Grube, Chen & Madden et al, 1995). Considering the relationship between attitude and expectancy has generally yielded more inconsistent findings (Leigh, 1989). The effect of a social or "normative" group has also been considered and again results have been inconsistent. Some researchers have found that including a measure of an individuals desire to comply with norms relating to a natural peer group did not improve the predictive power of alcohol expectancy (Wood, Nagoshi & Dennis, 1992). It may be that belonging to a heavy drinking group may buffer the negative consequences of drinking because these outcomes are considered normal within the group (Jones & McMahon, 1992). Overall, beliefs about negative consequences of drinking are important predictors of behaviour change and offer a promising way forward in developing insight into the decision

making process which leads to restrain from drinking.

Self-Regulation.

Consistent with a social learning perspective is the view within the literature that addictions are due to a breakdown of self-regulatory processes (Storm & Cutler, 1975; Heather, Tebbut & Mattick et al, 1993; Miller & Brown, 1991). Miller and Brown (1991) define self-regulation as the capacity to plan, guide and monitor your behaviour flexibly in the face of changing circumstances. Therefore self-regulation depends on the ability to adhere to a decision about your behaviour even when the external support structures do not exist or if there is little immediate reward for doing so.

Self-regulatory capacities are learned in childhood when behaviour is mainly controlled by external forces, namely adults (Vygotsky, 1986). As they develop, children gradually extend their regulatory influences. They become more internally controlled as naturally the level of external direction is reduced. Of importance in this model is the notion of automatic and controlled processing (Kanfer, 1986). Automatic processing is carried out with little conscious effort e.g.. routine tasks. Controlled processing is required when an individual has to engage in unfamiliar or novel behaviours. Self-regulation is required during controlled processing.

Kanfer (1970) was the initial proposer of self-regulation theory. He suggested that individuals who depend more on external feedback rather than internal cues to guide their behaviour would be more vulnerable to substance misuse (Kanfer, 1986). Miller and Brown (1991) have proposed a model of self-regulation by expanding on Kanfers theory. They highlight those internal processes required for self-regulation that can become disrupted. The fundamental processes include the ability to correctly process information from external and internal sources, continual self-monitoring, self-evaluation and the ability to plan and change behaviour accordingly. Addictive behaviours are understood to result from a breakdown in these self-regulatory processes that would normally provide a corrective or protective function. A maladaptive response is chosen over a more adaptive one to provide immediate gratification or reward rather than considering the long-term consequences. Self-regulation can breakdown at any stage in the process. Individuals with alcohol problems have been

found to be less sensitive to internal cues that trigger drinking (Lipscomb & Nathan, 1980). Positive expectancies are more accessible to recall and more immediately gratifying at critical drinking times as opposed to longer-term effects (Stacy et al, 1990). In this way a shift does not occur from automatic to controlled processing despite the harmful effects of drinking. A search for alternative behavioural responses will not be made.

Another stage of possible breakdown in self-regulatory processes is that an individuals planned behaviour change may be hampered by beliefs that they cannot control their drinking once any drinking occurs. The notion of 'control' implies an intention, a decision to behave in a certain way. It also implies that there are some form of forces (either internal or external) that exist and go against this intention. This produces a tension between immediate gratification and later consequences. Therefore an obvious incentive to control drinking is the expectation of negative consequences. As negative consequences begin to outweigh the satisfaction, attempts at control should increase. The puzzle remains as to why for some individuals despite having high motivation (high negative-expectancy) to stop, they do not. According to self-regulation theory this may be due to perceived impaired control over drinking. Failure to change drinking behaviour is mediated by beliefs about ones ability to control alcohol consumption (Heather, Rollnick & Winton, 1983; Wilson, 1978; Babor, Cooney & Lauerman, 1987).

If the tenents of self-regulation theory are accurate then treatment strategies should be aimed at strengthening normal self-regulatory processes to compensate for deficits that predispose some individuals to addictive behaviour. Miller and Rollnick (1991) describe a therapeutic process named 'Motivational Interviewing' which is designed to assist individuals in reaching a decision and make a commitment to change. This is done by enhancing awareness of the cons of current behaviour and the pros of change. This should spark a chain of corrective action and a shift from automatic to controlled processing. Motivational enhancement therapies have been found to be just as efficient at producing successful outcomes as other treatment interventions (Project MATCH research group, 1997).

Conclusion.

This review has presented both descriptive models of how people change, and explanatory models that account for why such changes occur. What is clear is that there is no one theoretical model that fully accounts for all of the empirical findings within the literature. From the explanatory models considered here, we have some understanding of how predictive variables emerge, but how they interact is yet to be understood and requires further investigation.

Following two decades of research on the phenomenon of motivation for recovery from addictive problems Miller (1998) proposed that what researchers should now be focussing on is the linking of the constructs already found to be important; *"A step forward would be the development and testing of predictive models that integrate or compare the various explanatory metaphors. The needed theoretical pieces may already be available and simply in need of assembly, or it may need a new conceptual framework".*

Given Miller's call for integration and clarification, comparative testing of models of motivation, already found to be predictive of change, seems to be the way forward. As social learning theory predicts multiple pathways to alcohol misuse, from this review of the empirical literature, it is also clear that there are various strands to the phenomenon of motivation. .

Future Research.

Future studies should now be exploring the interactions of variables already found to be important predictors of behaviour change, rather than concentrating on which concept is most important. One of the most promising and comprehensive frameworks to explain motivation for recovery has been offered by Jones and McMahon in their motivational model based on negative expectancy. However as it stands this model is incomplete. Further investigation into the cognitive components that underline the problem recognition process will extend their theory by identifying the crucial components, which lead to the decision to change addictive behaviour. Some problem-drinkers may be more concerned about their perceived ability to control their drinking if they have

any alcohol rather than the advantages and disadvantages of change. Previous research has confirmed that both negative expectancy and beliefs about control over drinking are important predictors of behaviour change, but the relationship between the two concepts is less well understood. Negative expectancy could provide a useful framework for examining the question of how beliefs about control over alcohol use effect motivation for change. This would allow researchers to expand both expectancy theory and aspects of self-regulation theory and move away from the dispute about which is the more important concept. An understanding of their interaction could provide crucial insight into the decision-making process, which leads to commitment to change addictive behaviours.

In the translation from theory to practice, such an understanding would guide clinicians in important areas of assessment, prior to setting intervention goals for problem-drinkers. It would provide a basis for measuring, and most importantly, manipulating motivation in the desired direction, in order to enhance treatment effects.

References

Annis, H. M. (1986). A relapse prevention model for treatment of alcoholics. In Miller, W. R., & Heather, N., (Eds.). Treating Addictive Behaviours: Processes of change. New York: Plenum Press.

Annis, H. M., & Davis, C. S. (1989). Relapse Prevention. In: Hester, R. K., & Miller, W. R. (Eds.). Handbook of Alcoholism Treatment Approaches. New York: Pergamon.

Babor, T. F., Cooney, N. L. & Lauerman, R. J. (1987). The Dependence Syndrome Concept as a Psychological Theory of Relapse Behaviour: an empirical evaluation of alcohol and opiate addicts. *British Journal of Addiction,* 82, 393-405.

Bandura, A. (1977). Towards a unifying theory of behaviour change. *Psychological Review,* 84, 191-215.

Bandura, A. (1994). Self-efficacy: The exercise of control. New York: Freeman.

Brown, S. A. (1985). Reinforcements expectancies and alcoholism treatment outcome after a one-year follow-up. *Journal of Studies on Alcohol,* 46, 304-308.

Cunningham, J. A., Sobell, L.C., Sobell, M. B. & Gaskin, J. (1994). Alcohol and drug abuser's reasons for seeking treatment. Addictive Behaviours, 19, 691-696.

Davidson, R. (1992). Prochaska and Di Clemente's model of change: A case study. *British Journal of Addiction.* 87, 821-822.

Davidson, R. D. (1998). The Transtheoretical Model: A critical overview. In W. R. Miller and N. Heather (Eds.). Treating Addictive Behaviours, second edition. (pp. 25-38). New York: Plenum press.

Emmons, K. M., Marcus, B. M., Linnan, L., Rossi, J. S., & Abrams, D. B. (1994). Mechanisms in multiple risk factor interventions; smoking, physical activity and dietary fat intake among manufacturing workers. *Preventative Medicine,* 23, 481-489.

Fuller, R. K. (1989). Antidipsotropic medications. In R. K. Hester & W. R. Miller (Eds.), Handbook of alcoholism treatment approaches effective alternatives (pp. 117-127). Elmsford, N.Y.: Pergamon Press.

Grube, J. W., Chen, M., Madden, P., & Morgan, M. (1995). Predicting adolescent drinking from alcohol expectancy values: A comparison of addictive interactive and non-linear models. *Journal of Applied Social Psychology,* 25, 839-857.

Heather, N., Rollnick, S. & Winton, M. (1983). A comparison of objective and subjective measures of alcohol dependence as predictors of relapse following treatment.

British Journal of Clinical Psychology, 22, pp. 11-17.

Heather, N., Rollnick, S., & Bell, A. (1993). Predictive validity of the Readiness to Change Questionnaire, *Addiction*, 88, 1667-1677.

Heather, N., Tebbut, J. S., Mattick, R. P., Zamir, R. (1993). Development of a scale for measuring impaired control over alcohol consumption: A preliminary report. *Journal of Studies on Alcohol*, 54 (6), 700-709.

Institute of Medicine. (1992). Prevention and Treatment of Alcohol-Related Problems: Research Opportunities. *Journal of Studies on Alcohol*, Vol., 53, 5-15.

Joe, G. W., Simpson, D. D., Broome, K. M. (1998). Effects of readiness for drug abuse treatment on client retention and assessment of process. *Addiction*, 93 (8), 1177-1190.

Jones, B. T., McMahon, J. (1992). Negative expectancies in group and lone drinkers. *British Journal of Addiction*, 87, (6), 929-930.

Jones, B. T., & McMahon, J. (1994a). Negative alcohol expectancy predicts post-treatment abstinence survivorship: The whether, when and why of relapse to first drink. *Addiction*, 89, 1654-1665.

Jones, B. T., & McMahon, J. (1994b). Negative and positive alcohol expectancies as predictors of abstinence after discharge from a residential treatment programme: a one and three month follow-up study in males. *Journal of Studies on Alcohol*, 55, 543-548.

Jones, B. T., & McMahon, J. (1996a). Alcohol expectancies at admission and discharge and changes in these expectancies relate to post-treatment abstinence survivorship. *British Journal of Clinical Psychology*, 35, (2), 221-223.

Jones, B. T., & McMahon, J. (1996b). A comparison of positive and negative alcohol expectancy and value and their multiplicative composite as predictors of post-treatment abstinence survivorship. *Addiction*, 91, 89-99.

Jones, B. T. & McMahon, J. (1998). Alcohol Motivations as Outcome Expectancies. In W. R. Miller and N. Heather, (Eds.). Treating Addictive Behaviours, second edition. (pp. 75-91), New York: Plenum Press.

Kanfer, F. H. (1970). Self-regulation: Research issues, and speculations. In C. Neuringer & J. L. Michael (Eds.), Behaviour Modification in clinical psychology (pp. 178-220). New York: Appleton- Century Crofts.

Kanfer, F. H. (1986). Implications of a self-regulation model of therapy for treatment of addictive behaviours. In W. R. Miller & N. Heather (Eds.). Treating Addictive

Behaviours: Processes of change (pp. 29-47). New York: Plenum Press.

Leigh, B. C. (1989). In search of the seven dwarves: Issues of measurement and meaning in alcohol expectancy research. *Psychol. Bull.* 105, 361-373.

Lipscombe, T. R., & Nathan, P. E. (1980). Blood alcohol level discriminations: The effects of family history of alcoholism, drinking pattern and tolerance. *Archives of General Psychiatry,* 37, 571-576.

McMahon, J., & Jones, B. T. (1993). Negative expectancy in motivation. *Addiction Research,* 1, 145-155.

McMahon, J. & Jones, B. T. (1996). Post-treatment abstinence survivorship and motivation for recovery: The predictive validity of the Readiness to Change (RCQ) and the Negative Alcohol Expectancy (NAEQ) questionnaires, *Addiction Research,* 4, 161-176.

McMahon, J., & Jones, B. T., & Smith, I. (1996). Negative expectancy based intervention within a motivational context. Paper presented at the annual conference of the British Psychological Society (Social Psychology Division), Symposium on Alcohol Motivations. Strathclyde University, Glasgow, Scotland.

Miller, W. R., & Hester, R. K. (1986). The effectiveness of alcoholism treatment methods: What research reveals. In W. R. Miller and N. Heather (Eds.), Treatment of addictive behaviours: Processes of change (pp. 121-174). New York: Plenum Press.

Miller, W. R. & Brown, J. M. (1991). Self-regulation as a conceptual basis for the prevention and treatment of addictive behaviours. In N. Heather, W. R. Miller & J. Greeley (Eds.), Self-control and the addictive behaviours. Sidney: Pergamon Press.

Miller, W. R., Rollnick, S. (1991). Motivational Interviewing: Preparing people to change addictive behaviour. New York: Guilford.

Miller, W. R., Benefield, R. G., & Tonigan, J. S. (1993). Enhancing motivation for change in problem drinking: A controlled comparison of two therapists' styles. *Journal of Consulting and Clinical Psychologist,* 61, 455-461.

Miller, W. R. (1998). Why do people change addictive behaviour? The 1996 H. David Archibald Lecture. *Addiction,* 93 (2), 163-172.

Mooney, D. K., Fromme, K., Kivlahan, D. R. & Marlett, G. A. (1987). Correlates of alcohol consumption: sex, age and expectancies relate differentially to quantity and frequency. *Addictive Behaviours,* 12, 235-240.

Orford, J., Somers, M., & Daniels, V. (1992). Drinking amongst medical patients: Level of risk and Models of Change. *British Journal of Addiction,* 87 (12), 1691-1703.

Prochaska, J. O. & Di Clemente, C. C. (1984). The transtheoretical approach: Crossing traditional boundaries of therapy. Homewood IL: Dow Jones/Irwin.

Prochaska, J. O., Velcer, W. F., Di Clemente, C. C. & Fava, J. S. (1988). Measuring the processes of change: Applications to the cessation of smoking. *Journal of Consulting and Clinical Psychology,* 56, 520-528.

Project Match Research Group. (1997). Matching alcoholism treatments to client heterogenity; Project Match post treatment outcomes. *Journal of Studies on Alcohol,* 58, 7-29.

Rollnick, S. (1998). Readiness, Importance and Confidence: Critical conditions of change in Treatment. In W. R. Miller and N. Heather (Eds.). Treating Addictive Behaviours, second edition. (pp. 49-59). New York: Plenum Press.

Saunders, B. (1996). Relapse revisited: A critique of current concepts and clinical practice in the management of alcohol problems. Paper presented to the Addictions '96 conference, Hilton Head Island, South Carolina.

Simpson, D. D., Joe, G. W., Rowan-Szal, G. A. & Greener, J. M. (1995). Client engagement and change during drug abuse treatment. *Journal of Substance Abuse,* 7, 117-134.

Sobell, L. C. (1991). Natural recovery from alcohol problems. In N. Heather, W.R. Miller, & J. Greeley (Eds.), Self-control and the addictive behaviours. Sidney: Pergamon Press.

Stacy, W. A., Widaman, K. F., & Marlatt, G. A. (1990). Expectancy models of alcohol use. *Journal of Personality and Social Psychology,* 58, 918-928.

Stockwell, T. (1992). Models of Change, heavenly bodies and weltanshauungs. *British Journal of Addiction,* 87 (6), 830-832.

Storm, T. & Cutler, R. (1975). Notes toward the analysis of loss of control in normal and pathological drinkers. *British Journal of Addiction,* 70. 151-155.

Sutton, S. (1996). Further support for the Stages of Change Model? *Addiction,* 91 (9), 1287-1289.

Vygotsky, L. S. (1986). Thought and Language. Cambridge, MA: Mit Press.

Wilson, G. T. (1987). Cognitive Processes in Addiction. *British Journal of Addiction,* 82, 343-353.

Wood, M. D., Nagoshi, C.T., Dennis, D. A. (1992). Alcohol norms and expectations as predictors of alcohol use and problems in a college student sample. *American Journal of Alcohol Abuse,* 18 (4) pp 461-476.

3. Major Research Project Proposal

Impaired Control as a mediating factor in the 'negative expectancy-
motivation for recovery' relationship.

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Impaired control as a mediating factor in the 'negative expectancy-motivation for recovery' relationship.

Summary

In recent years more attention has been paid to the role of motivation for recovery within the alcohol field such that different ways of conceptualising the phenomenon of motivation have emerged. Considering alcohol motivations as alcohol-outcome expectancies within a social learning theory framework has attracted a lot of research attention. Within this framework, positive expectancies about the effects of alcohol represent motivation to drink and negative expectancies as motivation to restrain. The reason why people continue to drink despite experiencing serious aversive consequences is considered to be due to an inability to recognise that alcohol is the source of their problems. Proper problem recognition is considered necessary for negative expectancies to rise and result in motivation to restrain from drinking. This present study aims to explore why some individuals fail to translate negative experiences into negative expectancies by examining whether a recognition of impaired control over alcohol use is necessary for proper problem recognition to take place.

Introduction

The role of motivation for recovery has been given increasing attention within the alcohol field in the last 20 years. This interest has generated a large body of knowledge about motivation to change addictive behaviour and different ways of conceptualising the phenomenon of motivation have emerged (Miller & Rollnick 1991; Di Clemente & Prochaska, 1998).

One of the most influential frameworks to explain motivation for recovery from alcohol problems has emerged from social learning theory (Rotter, Chance & Phares, 1972). Alcohol outcome expectancy is an alcohol construct which accounts for alcohol consumption by suggesting that an individual drinks due to having expectations about the reinforcing effects of alcohol. Positive expectancies about the effects of alcohol are recognised as representing motivation to drink and negative expectancies represent motivation to restrain (McMahon & Jones, 1993). Social Learning Theory accounts for the origins of alcohol expectancies as originating from memory structures which result from direct and indirect learning (Lang & Michaelec, 1990). This theoretical position suggests that individuals have developed alcohol expectancies even before they have ever had a drink. Researchers have found that children as young as 3 years have developed alcohol schema which are able to drive behaviour (Zuckner et al, 1995).

Many researchers have found a relationship between positive expectancy and level of alcohol consumption showing that the higher the positive expectancy the higher the level of alcohol consumption. This pattern has been found across the range of regular drinkers from social to problem and dependent drinkers (Brown 1985; Mooney et al, 1987).

Motivation to drink alcohol is therefore explained by the level of positive expectancy an individual has. Positive outcomes of drinking are more immediate and considered more powerful in influencing drinking decisions initially than negative outcomes (Bandura, 1969; Marlatt, 1985). Also positive expectancies are more readily retrieved from memory during the initial and most critical phase of a drinking episode (Stacy et al, 1990). Motivation to stop or reduce drinking has more recently been the

focus of researchers considering the role of negative alcohol expectancies in influencing drinking decisions.

Jones and McMahon (1998) have developed a theory of motivation to restrain from drinking based entirely on negative expectancy. They cite evidence from individuals who have recovered spontaneously and those who have sought help with their drinking, and believe that people change their drinking behaviour in response to anticipation of continuing or worsening negative consequences. Their model of negative expectancy as motivation to restrain is based on their assumption that proper problem recognition has to take place for negative expectancy to develop. They propose that negative expectancy increases with consumption in normal social drinkers and that this rise happens " silently " until an optimal level is reached. Once at this threshold negative expectancy becomes powerful in influencing alcohol decisions and consumption. There are three important stages in the problem recognition model which firstly incorporates the need to recognise that there is a problem, secondly accept that alcohol is the source of the problem and thirdly predict that the problems experienced are likely to get worse if the current drinking level is not reduced. They claim that people continue to drink despite serious negative consequences because they do not attribute their problems to their drinking and continue to believe that there are positive benefits to be had by continuing to drink. In this way negative experiences are not translated into negative alcohol expectancies.

In a series of treatment outcome studies, Jones and McMahon (1994a, 1994b, 1996a, 1996b) and McMahon & Jones, (1996) have consistently found that higher negative expectancy at treatment intake is associated with more successful treatment outcome. In these studies positive expectancy was not a predictor of outcome and this led them to suggest that alcohol treatment strategies focusing on increasing negative expectancy rather than reducing positive expectancy (which was previously believed to be the best way forward) would be more effective. Such treatment strategies have been demonstrated to be effective (McMahon et al, 1996; Saunders, 1996).

Overall, research on alcohol outcome expectancy supports the validity of an expectancy framework in accounting for alcohol use and misuse and in understanding motivation to restrain. Both positive and negative expectancies appear to

have independent associations with alcohol use due to the different roles they perform. However, it has become recognised within expectancy research that an individual's expectation of drinking alcohol is likely to be moderated by other factors. More recently, attempts have been made to understand the associations between expectancy and behaviour. Other variables such as desirability of outcome (Fromme et al, 1993) and value (Jones & McMahon, 1996) have been found to moderate the alcohol expectancy - drinking relationship. Another construct which is likely to impact this relationship is the expectation of loss of control if "a drink" is consumed.

The concept of 'loss of control' or 'impaired control' over drinking has been central to the explanation of problem drinking for many years. It is at the heart of the disease models conceptualisation of alcoholism, which has had widespread acceptance (Jellineck,1960). More recently it has been considered to be one of the central features of the alcohol dependence syndrome (Edwards, 1977). Recently the construct of 'impaired control' and its relationship with the elements of the dependence syndrome has been reconceptualised (Heather et al, 1998). Heather et al (1993) have developed an Impaired Control Scale (ICS), to measure impaired control over drinking as a continuous variable rather than an all-or-nothing occurrence. They conceptualise addictive behaviour as a breakdown of self- regulatory processes and maintain that impaired control is present in variable degrees throughout the population of all drinkers of alcohol. Using the ICS they found that the degree of impaired control related to treatment outcome. Individuals with high levels of impaired control were less likely to have a successful treatment outcome. Also, impaired control independently predicted outcome when other features of the dependence syndrome were controlled for among a sub-group of subjects who aimed for abstinence but relapsed into drinking during follow-up. They speculate that the construct of impaired control may have independent predictive ability, beyond the features of the alcohol dependence syndrome, and is able to identify those individuals most at risk of relapsing from a goal of abstinence.

The expectation of loss of control if "a drink" is consumed rather than negative expectancy about the consequences of alcohol consumption per se, is a relationship that has yet to be explored. The Negative Alcohol Expectancy Questionnaire, developed by Jones and McMahon (1994), has been used in all of their

outcome studies. Individuals are asked about their expectancies of going for "a drink" over three consecutive temporary contexts. Clearly "a drink" represents variable amounts of alcohol to different individuals. Thus, the reported negative expectancy-alcohol relationship may be an artefact of the way the question has been asked. According to Jones and McMahon's motivational model, negative expectancy rises with consumption until a threshold is reached and it is at this point that negative rather than positive expectancies become more powerful in influencing behaviour. An alternative explanation of alcohol expectancy is that by asking people what they expect to happen if they have "a drink", what they are really recording is their perceived impaired control over any alcohol use rather than negative expectancy of alcohol consumption per se. For some individuals having "a drink" translates to a heavy drinking session because they regard this as an inevitable event if any alcohol is consumed.

It may be that the concept of impaired control is the mediating factor in the problem- recognition process considered necessary by Jones and McMahon. If this is the case, then negative expectancy may not rise to a level required to influence behaviour, despite some individuals experiencing serious aversive consequences, due to their inability to recognise impaired control over drinking as a personal issue. It is only once they acknowledge their difficulty in controlling alcohol intake that they recognise that alcohol is the source of their problems, and negative experiences can then be translated into negative expectancies of further alcohol consumption.

Given the significance of the concept of impaired control in explaining alcohol problems it is important to assess whether it mediates the expectancy-behaviour relationship. Such a finding would advance the evaluation of an alternative expectancy formulation. A clearer understanding of how impaired control and negative expectancy interact would help in considering treatment goals and identify which individuals are at the greatest risk of relapse.

Aims of Study

The aims of this present study are threefold;

Firstly, to independently replicate the studies which have found negative expectancy to be a predictor of treatment outcome.

The second aim is to consider the concept of impaired control in predicting treatment outcome. Heather et al (1998) found a relationship between high impaired control at treatment intake with a sub-group of subjects aiming for abstinence from alcohol but who failed. These results have yet to be independently replicated using the ICS.

Thirdly, this study provides an opportunity to extend the question of negative expectancy to treatment outcome by considering impaired control as a mediating variable. The study aims to examine whether negative expectancy and impaired control interact to predict outcome, and if a combined use of these assessment tools will identify specific groups of subjects, for whom particular treatment interventions would be recommended.

Hypotheses

1. Subjects who have higher levels of negative expectancy at treatment intake are more likely to have a successful outcome at 3-month follow-up than those with lower negative expectancy.

2. Subjects who have lower levels of impaired control at treatment intake will be more likely to have a successful outcome at 3-month follow-up than those with higher impaired control.

3. Negative expectancy and impaired control will interact, so that subjects with the best treatment outcome will have higher levels of negative expectancy combined with lower levels of impaired control at treatment intake.

Research Method and Design

Subjects.

The study will be carried out at the Alcohol Problems Treatment Unit (APTU), Gartnavel Royal Hospital. Problem drinkers taking part in the study will be those admitted as day patients. Typically, treatment consists of detoxification (lasting between 5-7 days) with a reducing dose of chlordiazepoxide and individual counselling. All individuals with a primary diagnosis of alcohol dependence admitted to the APTU

will be invited to take part in the study and interviewed as soon after admission as is their cognitive state will allow (at least by the third day).The treatment goal at the APTU is abstinence. As an initial target of three months of abstinence is universally recommended prior to a longer- term goal of abstinence or moderate drinking being set, it is assumed that abstinence of at least 3 months will be aimed for. In addition this is considered an acceptable time lapse in which to expect people to recall their drinking frequency and consumption levels.

A power calculation was conducted using previously reported mean scores for outcome groups (successful and unsuccessful in treatment outcome) on the ICS (Heather et al 1998). It was estimated that to achieve 80% power to detect a statistically significant result at the 5% level of significance for two tailed testing, the smallest sample size required would be 26 participants in each of these two groups (Machin et al 1997). In order to ensure an adequate sample size at follow-up, it is expected that an initial size of 80 will be required due to the high drop-out rate of this client group.

Procedure

Questionnaires and interviews will be administered within three days of admission to the APTU (Time 1) and again at 3- month follow-up (Time 2).

At treatment intake, the details of a collateral, and permission to contact them at the follow-up period for corroboratory information about alcohol consumption, will be sought. The project will be introduced to the subject as being concerned about their opinions on the effects of their drinking on their life, and how confident they are about being able to stop or control it. Informed consent to taking part in the project will be obtained. In addition to being assured of complete confidentiality, subjects will be told that involvement or otherwise in the project will not influence their normal treatment (See Appendix 3 for copies of information sheet; consent form; assessment schedule).

Initial Assessment (T1).

An interview schedule will include demographic information such as age, gender, marital status and employment status.

1. Subjects will be asked about their drinking history, including estimates of their alcohol consumption for each day of the previous 3-months using the time-line follow-back procedure which depends on calendar-memory cues to assist recall. (Sobell et al, 1988).

2. Negative Alcohol Expectancy Questionnaire (Jones & McMahon, 1994).

3. Impaired Control Scale (Heather et al, 1993).

4. Severity of Alcohol Dependence Questionnaire (Stockwell et al, 1983).

5. General Health Questionnaire –28 (Goldberg & Hillier, 1979).

6. Alcohol Problems Questionnaire (Williams & Drummond, 1994).

Follow-up Assessment (T2).

Follow-up measures will be collected at 3 months from initial assessment. Subjects will be given the choice of attending the APTU or being visited in their homes for a structured follow-up interview. The procedures to elicit alcohol consumption and the Alcohol Problems Questionnaire will be repeated. Information from collateral sources will be collected.

A. *Drinking Outcome Measure.*

The time-line follow-back procedure will be employed to provide detailed information about drinking using the date of the last interview as a starting point. The primary dependent measures chosen for analysis will be Percent days abstinent (PDA) which provides a measure of drinking frequency and Drinks per drinking day (DDD) which constitutes a measure of drinking severity. This is in keeping with the Project Match Research Group (1993). PDA and DDD will be summarised for the 3- month follow-up period.

B. *Categorical Measure of Outcome.*

On the basis of objective criteria described by Heather and Tebbutt (1992), measuring alcohol consumption, and reported alcohol-related problems, subjects will be categorised in one of four groups as either;

i.   Abstinent.   ii.   Non-problem drinker.

iii. Drinking but improved.   iv.   Unimproved.

These categories are consistent with the categorical measure of outcome used by the Project Match Research Group.

Statistical Analysis Plan.

The ability of the NAEQ and the ICS, with other demographic and dependence variables in predicting drinking outcomes, will be examined within the group using multiple regression. Differences between the outcome groups in terms of mean baseline scores on the NAEQ and ICS will be examined by one-way ANOVA. The results of these analyses will determine whether further statistical investigation is appropriate.

Practical Applications.

This study will extend our understanding of motivation for recovery based on negative alcohol expectancy. If impaired control is identified as a mediating factor in the expectancy- behaviour relationship then this has implications for refining or suggesting an alternative expectancy framework. This study will extend our understanding of the variables associated with motivation for recovery and will be useful for clinicians and researchers in its implications for assessment and treatment of problem drinkers.

Time scales

It is anticipated that data collection will begin in April 2000 and be completed by the end of May 2001. Collation and analysis of data, and writing up, will require a further 2 months.

REFERENCES

Bandura, A. (1969). Principles of behaviour modification. New York : Holt, Rinehart and Winston.

Brown, S.A. (1985). Reinforcement expectancies and alcoholism treatment outcome after a one year follow-up. *Journal of Studies on Alcohol*, 46, 304-308.

Di Clemente, C.C., & Prochaska, J.O. (1998). Toward a comprehensive, transtheoretical model of change : Stages of change and addictive behaviours. In W.R. Miller & N. Heather (Eds.), Treating addictive behaviours (pp. 3-24). New York : Plenum Press.

Edwards, G., Gross, M.N., Keller, M., Moser, J. & Room, R. (Eds.) (1977). Alcohol Related Disabilities, WHO Offset Publication No. 32 (Geneva, World Health Organization).

Fromme, K., Stroot, E., & Kaplan, D. (1993). Comprehensive effects of alcohol : Development and psychometric assessment of a new expectancy questionnaire. *Psychological Assessment*, 5, 19-26.

Goldberg, D.P. & Hillier, V.P. (1979). A scaled version of the General Health Questionnaire. *Psychological Medicine*, 9, 139-145.

Heather, N., Booth, P., Luce, A. (1998). Impaired Control Scale : Cross Validation and relationships with Treatment outcome. *Addiction*. Vol 93 (5), 761-771.

Heather, N. & Tebbutt, J. (1992). Definations of Non-Abstinent and Abstinent Categories in Alcoholism Treatment Outcome Classifications: A Review and Proposal. *Annual Rev. of Addictions Res. and Treatment*, pp. 279-288.

Heather, N., Tebbutt, J.S., Mattick, R.P., Zamir, R. (1993). Development of a scale for measuring impaired control over alcohol consumption : A preliminary report. *Journal of Studies on Alcohol.* Vol 54 (6), 700-709.

Jellineck, E.M. (1960). The disease concept of alcoholism. Hillhouse, New Haven.

Jones, B.T., & McMahon, J. (1994a). Negative alcohol expectancy predicts post-treatment abstinence survivorship : The whether, when and why of relapse to a first drink. *Addiction*. 89, 1654-1665.

Jones, B.T. & McMahon, J. (1994b). Negative and positive alcohol expectancies as predictors of abstinence after discharge from a residential treatment progremme : a one and three month follow-up study in males. *Journal of Studies on Alcohol.* 55, 543-548.

Jones, B.T., & McMahon, J. (1996a). Alcohol expectancies at admission and discharge and changes in these expectancies relate to post-treatment abstinence survivorship. *British Journal of Clinical Psychology.* 35 (2), 221-233.

Jones, B.T., & McMahon, J. (1996b). A comparison of positive and negative alcohol expectancy and value and their multiplicative composite as predictors of post treatment abstinence survivorship. *Addiction,* 91 (1), 88-89.

Jones. B.T., & McMahon, J. (1998). Alcohol Motivations as Outcome Expectancies. In W.R.Miller & N. Heather (Eds.), Treating addictive behaviours (pp. 75-91) New York : Plenum Press.

Lang, A.R. & Michalec, E.M. (1990). Expectancy effects in reinforcement from alcohol. In W.M. Cox (Ed.), Why People Drink : Parameters of Alcohol as a Reinforcer. New York : Gardner.

McMahon, J., & Jones, B.T. (1993). Negative expectancy in motivation. *Addiction Research,* 1, 145-155.

McMahon, J., & Jones, B.T. (1996). Post-treatment abstinence survivorship and motivation for recovery : The predictive validity of the Readiness to Change (RCQ) and the Negative Alcohol Expectancy (NAEQ) questionnaires. *Addiction Research,* 4, 161-176.

McMahon, J., Jones, B.T., & Smith, I. (1996). Negative expectancy based intervention within a motivational interviewing context. Paper presented at the annual conference of the British Psychological Society (Social Psychology Division), symposium on Alcohol Motivations. Strathclyde University, Scotland.

Machin, D., Campbell, M., Fayers, P., Pinol, A. (1997). Sample Size Tables for Clinical Studies (second edition), table 3.5, p62.

Marlatt, G.A. (1985). Relapse prevention : Theoretical rationale and overview of the model. In G.A. Marlatt & J.R. Gordon (Eds), Relapse prevention. (pp. 3-70). New York : Guilford Press.

Miller, W.R., & Rollnick, S. (1991). Motivational interviewing : Preparing people to change addictive behaviour. New York. Guilford

Mooney, D.K., Fromme, K., Kivlahan, D.R. and Marlatt, G.A. (1987). Correlates of alcohol consumption : sex, age and expectancies relate differentially to quantity and frequency. *Addictive Behaviours,* 12, 235-240.

Project Match Research Group. (1993). Project Match; Rationale and methods for a multisite clinical trial matching patients to alcoholism treatment. *Alcsm Clin. Exp. Res.* 17: 1130-1145.

Rotter, J.B., Chance, J.E., & Phares, E.J. (1972). Applications of social learning theory to personality. New York : Holt, Rinehart and Winston.

Saunders, B. (1996). Relapse revisited : A critique of current concepts and clinical practice in the management of alcohol problems. Paper presented to the Addictions '96 conference, Hilton head Island, South Carolina.

Sobell, L.C., Sobell, M.B., Leo, G. L and Cancilla, A. (1988). Reliability of a Timeline Method : assessing normal drinker's reports of recent drinking and a comparative evaluation across several populations. *British Journal of Addiction,* 83, 393-402.

Stacy, W.A., Widaman, K.F., & Marlatt, G.A. (1990). Expectancy models of Alcohol use. *Journal of Personality and Social Psychology,* 58, 918-928.

Stockwell, T., Murphy, D. & Hodgson, R. (1983). The severity of alcohol dependence questionnaire : its use, reliability and validity. *British Journal of Addiction,* 78, 145-155.

Williams, B. & Drummond, D.C. (1994). Alcohol Problems Questionnaire : reliability and validity. *Drug and Alcohol Dependence,* 35, 239-243.

Zuckner, R.A., Kincaid, S.B., Fitzgerald, H.E., & Bingham, C.R. (1995). Alcohol schema acquisition in preschoolers : Differences between children of alcoholics and children of non-alcoholics. *Alcoholism : Clinical and Experimental Research,* 19, 1011-1017

4. Major Research Project Paper

Impaired control as a mediating factor in the 'negative expectancy-

motivation for recovery' relationship.

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Abstract

Aims. To investigate if 'negative expectancy' and 'impaired control' over alcohol use have a role in the prediction of treatment outcome. To examine whether they differentially predict outcome or if they interact to identify specific groups for whom particular treatment interventions would be recommended. **Design.** In a follow-up study, questionnaires were administered and a clinical interview was carried out at Time one (T1) and again 3-months later at Time two (T2). **Setting.** The study was carried out in an Alcohol Problem Treatment Unit in a Glasgow hospital. **Participants.** Eighty-three problem drinkers, who were consecutive attenders at the APTU, had a primary diagnosis of alcohol dependence and agreed to a treatment goal of at least 3-months abstinence, took part. **Measurements.** At T1, NAEQ scores; ICS scores; Severity of dependence; Degree of alcohol-related problems; Level of psychological distress; 'Drinks per drinking day' (DDD), 'Percent days abstinent' (PDA) in last 3-Months. At T2, PDA and DDD since T1 and classification of outcome category using consumption levels and current alcohol-related problems. **Findings.** The ability of the NAEQ in predicting outcome was confirmed with both drinking outcome and categorical outcome. Two of the ICS sub-scales had a relationship with outcome, but ICS-3 (perceived control) was not in the predicted direction. Significant interactions were not found in addition to the predictive ability of the variables when considered on their own. **Conclusions.** Negative expectancy provided a useful framework to account for motivation to change problem drinking. For chronic, dependent drinkers, recognition that they are unlikely to control their drinking once any alcohol is consumed, is predictive of good outcome. The NAEQ and ICS have potential uses in research and as clinical tools in assessment. The NAEQ has further use in structuring motivational enhancement treatment approaches.

Introduction.

One of the most influential frameworks to account for motivation to drink alcohol, or to refrain from drinking is provided by Alcohol Outcome Expectancy Theory (Jones, Corbin & Fromme 2001). Grounded within a Social Learning perspective, this theory has provided a way of understanding variability in alcohol-consumption and related problems (Rotter, Chance & Phares 1972, Bandura, 1977). Alcohol consumption is explained by individuals having alcohol outcome expectancies, which are acquired as a result of direct and indirect personal experiences (Lang & Michaelec, 1990). Positive expectancies regarding the effects of alcohol represent motivation to drink, whereas negative expectancies represent motivation to stop or reduce drinking (Jones & McMahon, 1998). Several studies have confirmed the association between alcohol outcome expectancies and drinking behaviour. Alcohol consumption is positively associated with positive expectancies and inversely associated with negative expectancies (Lee, Greely & Oei 1999, Fromme & D'Amico, 2000).

A model of motivation to refrain from drinking has been proposed by McMahon & Jones (1993) and is based entirely on negative expectancy. Within this model it is the anticipation of continuous or worsening negative consequences which leads to a decision to refrain from drinking. For negative expectancy to rise to a level required to influence behaviour, individuals have to recognise that alcohol is causing them considerable problems. McMahon & Jones (1993) claim that some individuals continue to drink, despite serious negative consequences because they fail to attribute problems to their drinking. Such individuals will continue to drink because they still expect significant benefits from consuming alcohol. In this way, negative experiences are not translated into negative expectances of further alcohol use.

The Negative Alcohol Expectancy Questionnaire (NAEQ) was developed to specifically measure this construct (McMahon & Jones, 1993). Using this instrument, studies have found that the more negative expectancies held at treatment intake, the better the treatment outcome (Jones & McMahon 1994a, 1994b, 1996a, 1996b). Based on this evidence, Jones & McMahon (1998) have produced a strong argument for the view that negative expectancy provides a framework for measuring motivation to reduce alcohol consumption. They suggest that strategies aimed at manipulating

negative expectancies, in the desired direction, will increase motivation to restrain and this should be a central component of alcohol problem prevention and treatment interventions.

Overall, research evaluating alcohol outcome expectancies supports the validity of an expectancy framework in accounting for alcohol consumption. Negative expectancy, as a way of conceptualising motivation to refrain from drinking, seems a promising way forward in terms of measuring such a complex phenomenon (see literature review, p1). However, it is now being recognised by expectancy researchers that further investigation into the cognitive components that underlie the decision to change addictive behaviour is required (Jones, Corbin & Fromme, 2001). A construct which is likely to moderate the 'negative expectancy - alcohol consumption relationship' is belief about ability to control alcohol use once any drinking has taken place.

The concept of loss of control or impaired control over alcohol use has been central to the explanation of problem drinking for many years (Jellinek, 1960). It is considered one of the key features of the of the alcohol dependence syndrome (Edwards, 1977).

Heather, Tebbutt & Mattick et al, (1993) have developed an Impaired Control Scale (ICS) as a way of measuring impaired control over drinking as a continuous variable rather than an all-or-nothing construct. These authors view addictive behaviour as a breakdown of self-regulatory processes and a possible place of breakdown is due to the belief that drinking cannot be controlled once any alcohol is consumed. Therefore, failure to change drinking is mediated by beliefs about ones ability to control any alcohol consumption. Using the ICS, impaired control has been found to be a predictor of outcome, as those scoring highly on this measure at treatment intake had less successful outcomes (Heather, Booth & Luce, 1998). These researchers suggest that impaired control is a construct that can be reliably measured using the ICS, and it is able to identify those individuals most at risk of relapse.

The expectation of 'loss of control' if any alcohol is consumed and 'negative expectancy' about alcohol consumption per se, is a relationship that is yet to be explored. Previous research has found that both negative expectancy and impaired control are important predictors of behaviour change, but how they interact is less well understood. Given the key explanatory role of 'impaired control' in accounting for

problem drinking, it is important to assess whether it mediates motivation to refrain from drinking. Such a finding would provide crucial insight into the decision-making process that leads to behaviour change. This would have implications for considering both treatment strategies and goals, and in identifying those individuals at the greatest risk of relapse.

The current study examined the relationship between 'negative expectancy' and 'impaired control' in a sample of problem drinkers, with a goal of identifying variables that predict outcome. The following hypotheses were investigated;

1. Participants who have higher levels of negative expectancy at treatment intake will have more successful outcome at 3-month follow-up.

2. Participants who have lower levels of impaired control at treatment intake will have more successful outcome at 3-month follow-up.

3. Negative expectancy and impaired control will interact so that participants with the best outcome will have had higher negative expectancies and lower levels of impaired control at treatment intake.

Method.

Design

This was a 3-month follow-up study. At time 1 (T1) a battery of instruments were administered to measure psychological variables and alcohol-related problems. Drinking details were recorded in terms of history of problem drinking and estimates of current consumption. At time 2 (T2), 3 months later, drinking details and any related problems since T1 were collected.

Participants

The sample comprised 83 problem drinkers, who were consecutive attenders at an Alcohol Problems Treatment Unit (APTU) in Greater Glasgow Primary Care NHS Trust. They were admitted to the APTU as day patients and typically treatment consisted of detoxification (lasting between 5-7 days) with a reducing dose of

chloridiazepoxide and individual counselling. All participants who took part in the study met the inclusion criteria (a primary diagnosis of alcohol dependence and no evidence of cognitive impairment) and were interviewed within the first week of admission. The treatment goal at the APTU is abstinence. All subjects stated that they would aim for at least a 3-month period of abstinence. An initial target of 3-months abstinence is universally recommended prior to a longer-term goal of either continued abstinence or moderate drinking. All participants gave their signed, informed consent to take part in the study.

Procedure

In all cases data was collected by individual interview with the author at two time points. All interviews took place within the hospital, although at T2 participants were offered a home visit if preferred. Details of information collected are as follows;

Initial Interview (T1)

An interview schedule included the following demographic and clinical information; age, sex, marital and employment status, years of problem drinking, occupation and living arrangements. Each participant was then asked to complete the following measures;

1. *Drinking details* were recorded for the previous 3-months using time-line follow-back procedures (Sobell, Sobell & Leo et al, 1988). This is an established method to collect details of alcohol use and uses calendar memory cues to assist recall. From this, 'Percent Days Abstinent' and average 'Drinks per Drinking Day' were calculated for each participant, which gives an estimation of frequency and severity of alcohol consumption levels.

2. *Negative Alcohol Expectancy Questionnaire* (NAEQ), (McMahon & Jones, 1993). This instrument consists of 60 items related to expected negative consequences of alcohol consumption. Participants are asked to rate on a five-point likert scale whether they expect the content of the items to happen to them. Anchor points are 1 for 'highly unlikely' and 5 for 'highly likely'. The items are grouped into three sections of same-day, next-day and continued-drinking expectations. The same-day scores

represent a 'proximal subscale score' and the other two sections added together form the 'distal subscale score'. A total negative expectancy score is produced by adding the subscale totals (maximum300) (Appendix 4).

3.   *Impaired Control Scale* (ICS), (Heather et al 1993). This instrument is designed to measure the degree of impairment over control of alcohol consumption shown by a problem drinker. The ICS is made up of 3 parts: part 1 (Attempted Control) consists of 5 items measuring the degree to which a subject has attempted to exercise control over drinking in the last 6 months; part 2 (Failed Control) consists of 10 items measuring the degree of failure to control drinking in the last 6 months; part 3 (Perceived Control) consists of 10 items and measures the persons beliefs in their ability to control consumption if it were attempted. All of these items are scored on a five- point likert scale from 0-4. Normative ranges are available for each part of the ICS and are based on a sample of treatment seeking problem drinkers (Appendix 4).

4.   *Severity of Alcohol Dependence Questionnaire (SADQ)*, (Stockwell, Murphy & Hodgson, 1983). A well-established questionnaire measuring the degree of physical dependence on alcohol. It consists of 20 items each scored on a four-point scale. A score of 30 or below indicates mild to moderate dependence with a cut off point of 31 and above indicating severe dependence.

5.   *General Health Questionnaire-28* (GHQ), (Goldberg & Hillier, 1979). This item is used as a screening instrument comprising of four subscales measuring somatic symptoms, anxiety and insomnia, social dysfunction and severe depression. A threshold score of 5 or above indicates caseness. This measure was included primarily to explore the relationship between psychological distress and treatment outcome.

6.   *Alcohol Problems Questionnaire - Common Score* (APQ), (Williams & Drummond, 1994). This scale measures the extent of participant's alcohol problems across a range of domains. The common score is taken from the first 23 items and is derived from those domains that potentially apply to everyone i.e. Physical, emotional, financial, legal and relationship problems. Items are scored on the basis of '0' for the problem not having been experienced, or '1' for the problem having been experienced in the last six months (maximum score = 23), (Appendix 4).

Follow-up Interview (T2)

Follow-up data was collected by interview, which took place 3-months from the initial assessment. Time-line follow-back procedures were used to obtain details of any drinking that may have occurred and the APQ was re-administered to measure any alcohol- related problems since T1.

At this point, two main outcome measures were calculated for each participant based on their alcohol consumption levels, and current alcohol-related problems.

Each participant had a *drinking outcome* measure with 2 parts, PDA and DDD, and were categorized into one of four possible *outcome categories*; i) Abstinent / mostly abstinent, ii) Non-problem drinker, iii) Drinking but improved, iv) Unimproved.

A.   *Drinking Outcome Measure.*

The primary drinking dependent measures chosen for analysis are Percent Days Abstinent (PDA) and Drinks per Drinking Day (DDD), which provide a measure of drinking frequency and severity. This is consistent with the drinking outcome measure used by the Project Match Research Group (1993). PDA and DDD are summarised for the 3-month follow-up period.

B.   *Categorical Measure of Outcome.*

Participants were classified into one of four groups using the objective criteria outlined by Heather & Tebbut (1992). This categorical measure of outcome is in keeping with the classification used by the Project Match Research Group (1993).

The criteria used for classification are as follows;

i)   Abstinent / mostly Abstinent.

Complete abstinence or up to 2 'slips' permitted during the 3-month follow-up. No more than 8 units of alcohol for men or 6 units for women constitutes 'a slip'.

ii)   Non-Problem Drinker.

Never drinking to intoxication. No more than 1 'slip' per month during follow-up ('slip', defined as above). 'Slips' must not be associated with any serious or recurrent alcohol-related problems.

The above groups require a complete absence of alcohol-related problems including signs of dependence.

iii)   Drinking but Improved.

A reduction of at least 1/3 from the previous level of consumption and of reported alcohol-related problems from those recorded at intake.

iv)   Unimproved.

No improvement in alcohol consumption, or related problems.

Results.

Statistical Analysis.

All data were analysed using the statistical package SPSS for Windows, version 9.0 for the pc. To assess normality of distribution for all continuous data, significance of skewness was tested. This was done by converting the data to z scores with the criteria that a score greater than 1.96 would indicate a skewed distribution (Field, 2000). Using this criteria all continuous data were found to be normally distributed.

Apart from descriptive statistics, the statistical analysis had three main parts. The first stage examined which variables predicted good outcome using the drinking outcome measures (PDA, DDD). Correlation analysis was used initially within the entire follow-up group to measure the association between drinking outcome and baseline measures. Following this, stepwise multiple regression was performed to identify which variables were the best predictors of good drinking outcome.

The second stage involved examining differences between the categorical measure of outcome which was the different groups classified at T2. As the main aim of the study was to examine the predictive value of 'negative alcohol expectancy' and 'impaired control', this stage of the analysis took the form of logistic regression. This analysis aims to predict membership of a categorical dependent variable (in this case Treatment Successes v's Treatment Failures). To select potentially predictive variables for inclusion in the logistic regression analysis, a series of t-tests were carried out to test for significant differences between these dichotomous categories in terms of mean baseline scores. A power calculation using reported mean scores on the ICS between treatment outcome groups (successful v's unsuccessful) was carried out based on data from a previous study (Heather et al, 1998). It was estimated that to achieve 80% power to detect a statistically significant difference at the 5% level, 26 participants would be

adequate in each group.

The final stage of the analysis corresponds to the third aim of the study. The interaction between 'negative alcohol expectancy' and 'impaired control' measures were examined for both drinking outcome, using multiple regression, and the dichotomous outcome categories, using logistic regression.

Study Population.

Summary demographic and clinical information on the total sample (n=83), the follow-up group (n=60), and the non-follow-up group (n=23) are presented in Table 1.

Demographic Information.

The total sample consisted of 83 problem drinkers with 73 (88%) males and 10 (12%) females. The average age of the group was 43 yrs (SD = 10, 19-68 yrs.) and 59 (71%) of the sample were unemployed. Twenty-two (27%) described themselves as cohabiting or married, the majority being divorced / separated or single. The majority of the sample (58%) live alone. These sociodemographic details are similar to the characteristics of consecutive attenders at an APTU described by Allan (1991).

Alcohol Consumption and Related Problems.

Sixty participants (72%) scored above 30 on the SADQ (mean 37, SD = 12) which indicates severe dependence. In the 3-months prior to admission 32 (39%) reported that they were drinking on a daily basis, with a mean PDA for the period being 20% (SD = 27, range 0-92%). The mean DDD for the previous 3-months was 34 units of alcohol (SD = 12, range 13-60).

The average duration of problem-drinking was 18 yrs (SD = 9, range 3-40 yrs). In terms of alcohol-related problems the mean score on the APQ was 15 (SD = 5, range 2-22). As the maximum score on the measure is 23, this indicates that the sample are experiencing a wide range of drinking-related difficulties. The mean GHQ score was 14 (SD = 7, range 0-27) and 73 (88%) participants obtained a score of 5 or above, indicating high levels of psychological distress at the time of admission for treatment.

Characteristics of Follow-up sample (T2).

A total of 60 participants were followed up at T2. The demographic and clinical patterns described above were reflected in the follow-up and non-follow-up groups with the only differences being found in age and duration of problem drinking. The follow-up group were significantly older (mean FU group=45yrs, mean NFU group=39yrs, t = 2.68, p=0.009) and had longer drinking histories (mean FU group 20yrs, mean NFU group =15yrs, t = 2.43, p=0.017) than the non-follow-up group. The groups were similar in all other characteristics and measures.

[Insert Table 1]

Collateral Confirmation.

Collateral sources were contacted at T2 for 25 (42%) of the follow-up group. The poor response-rate of collateral sources was due to characteristics of the population. Only 38 (63%) of the follow-up group had provided the name of a collateral. Also, given the fact that most of the sample live alone, there was no obvious person to nominate to provide reliable information.

1.(i). Correlation analysis for the follow-up group for PDA and DDD with baseline scores.

Selection of potentially predictive variables for inclusion in the initial stepwise multiple regression analysis was based on significant associations being found between PDA and DDD at T2 with baseline scores at T1. Using Pearsons correlation, a significant positive correlation was found between PDA with NAEQ-Total score (r = 0.266, p=0.05), NAEQ-Distal (r = 0.352, p=0.01) and with two subscales of the ICS. The ICS-1, which measures 'attempted control', was positively correlated with PDA (r =0.254, p=0.05), as was ICS-3 which measures beliefs about ability to control alcohol intake (r = 0.227, p=0.05). A higher score on ICS-3 corresponds to individuals believing that if they were to attempt to control their drinking their failure rate would be high. There was only one significant association found for DDD at T2 with baseline scores. NAEQ-Distal was negatively correlated with DDD (r = -0.228, p=0.05). This means that the higher this score at baseline, the less average drinks per drinking day were consumed at follow-up.

The full results of the correlation analysis are displayed in Table 2.

[Insert Table 2]

No other significant correlations were found for either PDA or DDD with other potentially key variables like levels of dependence (SADQ), alcohol-related problems (APQ), or psychological distress (GHQ).

(ii) Predictors of good drinking outcome.

Extending the analysis of variables associated with good drinking outcome, stepwise multiple regression was performed with PDA as the dependent variable. Those variables found to be significantly correlated with PDA (NAEQ-Total score, NAEQ-Distal, ICS-1 and ICS-3) were entered into the regression equation. The results of this analysis are displayed in Table 3.

[Insert Table 3]

NAEQ-Distal was found to be the best individual predictor and accounted for 12.4% of the variance in PDA, ICS-1 adding a further effect of explaining an additional 6% of the variance. Cumulatively, these two variables account for 18.4% of the variance in PDA and the F value for this additive model is significant (F = 6.445, p=0.003). The other variables were excluded from the analysis as they did not significantly add to the explained variance once the effects of NAEQ-Distal and ICS-1 had been removed.

The only associated variable with DDD was also entered into a simple regression equation. NAEQ-Distal was negatively correlated with DDD, but this variable was not found to be a predictor of DDD (R^2= 0.052, F = 3.18, p=0.08).

2.(i). Differences between Outcome Categories.

At T2 each of the follow-up group were classified into an outcome category based on their reported alcohol-consumption and related problems since T1. Of the 60 participants followed-up, 20 (33.3%) were classified as 'Abstinent', 8 (13.3%) as 'non-

problem drinker', 8 (13.3%) as 'Drinking but improved' and 24 (40%) as 'Unimproved'.

Given the small numbers of participants falling into the two middle categories, for the purpose of the analysis, these groups were added to each of the extremes to form dichotomous categories. 'Abstinent' and 'Non-problem drinker' were added to form 'Treatment Successes' (n = 28), 'Drinking but improved' and 'Unimproved' were added to form 'Treatment Failures' (n = 32).

These dichotomous categories allow sufficient numbers for statistical analysis to be carried out, and meet the power calculation requirements in terms of an adequate sample size. These categories provided the basis for the between-group analysis. In order to select potentially predictive variables for inclusion in the logistic regression analysis, differences between the dichotomous outcome categories were explored. As the main aim of this study is to examine the effects of 'negative alcohol expectancy' and 'impaired control' on outcome, the means of these questionnaires were compared between the groups. Table 4 displays the means and standard deviations for these questionnaires for the total and each of the outcome categories of 'Treatment Successes' and 'Treatment Failures'.

[Insert Table 4]

A series of T-tests were carried out to test mean scores. The NEAQ-Total score was significantly higher in the 'Treatment Success' group (TS mean=201, TF mean=177, t = 2.07, p=0.04), even more significant was the higher score for this group on the Distal subscale (TS mean=142, TF mean=123,t = 2.33, p=0.02). The only significant difference found between the outcome groups on the ICS subscales was with the successful group scoring higher on the ICS-3 (TS mean=30, TF mean=26,t = 2.22, p=0.04). This means that the successful group were more likely to believe that they would fail, if they attempted to control alcohol intake, once any drinking had occurred. No statistical differences were found between these outcome groups on severity of dependence using the SADQ (t = 0.513, p=0.67), alcohol-related problems as measured by the APQ (t = 0.25, p=0.30) or psychological distress as measured by the GHQ (t = 0.195, p=0.38).

(ii). Predicting outcome as classified as 'Treatment Success' or 'Treatment Failure'.

Important differences were found to exist between the two outcome groups on the NAEQ and ICS questionnaires by examining mean questionnaire scores using t-tests. Therefore, initial inclusion in the logistic regression analysis included the following variables; NAEQ-Total score, NAEQ-Distal and ICS-3 (see Table 4).

A model was built with the intention of establishing the combination of variables which best predicted membership into either group. Variables were removed if they did not did not improve the prediction of the outcome group in addition to those already in the model. The results of this analysis are shown in Table 5.

[Insert Table 5]

Although each of the selected variables individually significantly predicted outcome, once the effects of NAEQ-Distal were accounted for, ICS-3 and NAEQ-Total score ceased to add any further information in terms of discriminating between groups.

3. Interactive effects of 'negative expectancy' and 'impaired control' in predicting outcome.

As a final analysis, following the third aim of the study, interaction effects were explored between the best predictors of drinking outcome (using PDA) and categorical outcome ('Treatment Successes' v's 'Treatment Failures).

In the stepwise multiple regression analysis, NAEQ-Distal and ICS-1 (attempted control) were the best predictors of successful outcome as measured by PDA. It was established that their combined use accounted for additional variance (see Table 3). To examine if there is an interaction between these two variables, they were selected together to form an 'interaction variable' by multiplying their values together for each participant. A further multiple regression analysis was carried out with NAEQ-Distal, ICS-1 and the interaction variable of Distal x ICS-1. The results of this analysis are shown in Table 6.

[Insert Table 6]

To examine the effect of the interaction, all variables were entered into the equation. As models are being compared containing different numbers of explanatory variables, it is more appropriate to compare the adjusted R^2 values. As there is no significant change in this value (model 1, Adj R^2 = 0.156; model 2, Adj R^2 = 0.154), the interactive effect is not significant. We can assume that the effects of the variables NAEQ-Distal and ICS-1 are additive, since there is no significant interaction.

In considering whether there is an interaction effect for the prediction of categorical outcome, a similar examination was carried out for those variables that predicted membership into either group of 'Treatment Success' of 'Treatment Failure'. NAEQ-Distal was the best predictor of categorical outcome and ICS-3 was the only significant predictor of group membership for the ICS-scales (see Table 5). A logistic regression model was fitted which included both of these variables and included the interactive variable of Distal x ICS-3. This variable was computed by selecting these variables for the 'interaction' option for regression analysis. The results of this logistic regression analysis are displayed in Table 7

[Insert Table 7]

The results demonstrate that the interaction effect between these variables does not reach significance (p= 0.069). The interactive variable does not add further predictive ability than the variables considered on their own, to the prediction of outcome category.

Discussion.

The main aim of the present study was to investigate whether 'negative expectancy' and 'impaired control' have a role in the prediction of good treatment outcome. The discussion will proceed initially according to the three hypotheses listed in the introduction to the study.

It was hypothesised that higher negative expectancy at treatment intake would predict good outcome. Results of this study provide confirmation that negative expectancy is a reliable predictor of good outcome, and findings described earlier by Jones and McMahon in their series of studies, were replicated. This relationship was

consistently found in measures of drinking outcome (PDA) and categorical outcome (Success v's Failures). This study confirms the results of previous studies, that the 'active' negative expectancies are Distal rather than Proximal. It was the Distal subscale of the NAEQ that emerged as the most powerful predictor of good outcome. These results strongly support the view that negative expectancies represent 'motivation for change' at treatment entry, as those most motivated (reporting higher negative expectancies) do better in treatment.

The second hypothesis was based on previous findings that impaired control, measured at intake, has a relationship with treatment outcome. Lower scores on the 'failed control' (ICS-2) and 'perceived control' (ICS-3) were previously associated with successful outcome (Heather et al, 1998). 'Attempted control' (ICS-1) is a measure of how many times a person has attempted control over drinking in the last 6 months and represents a motivational measure. On this scale, higher scores are associated with more success. Results of this study have yielded mixed findings and do not replicate previous findings. Higher scores on 'attempted control' (ICS-1) were, like previously, found to be a predictor of successful drinking outcome as measured by PDA at follow-up. There was no relationship between 'attempted control' and the categorical outcome measure. However, results concerning 'perceived control' (ICS-3) run counter to the relationship previously found. Higher scores on the ICS-3 were predictive of more successful outcome in terms of membership in the group of 'Treatment successes'. Those individuals who believed they were unable to control their alcohol intake, once any drinking had taken place, were more likely to be successful. There was no relationship found in the current study with ICS-2 (failed control) for either measure of treatment outcome. Again, this runs counter to previous findings where ICS-2 has been highlighted as the subscale that most directly measures degree of impairment over control.

The third hypothesis aimed to extend our understanding of 'negative expectancy' and 'impaired control' by examining how they interact. It was predicted they would interact so that higher negative expectancy and lower impaired control (as measured by ICS-2 and ICS-3) would combine to predict more successful treatment outcome. It was anticipated that exploring their interaction would illuminate the processes through which decisions to refrain from drinking are made. Interactions were

were not found to explain variability in treatment outcome in addition to the additive model containing the two constructs. When the interactive variables were added simultaneously to the additive models, there was no significant increment in variance explained for frequency of drinking (PDA) or categorical outcome (Success v's Failure) . However, there was a trend found that approached significance with Distal x ICS-3 (perceived control) predicting membership into the 'Success or Failure' groups. It may be that with a larger sample size, this trend would reach significance. If this was the case, higher negative expectancy (motivation) combined with greater beliefs in personal inability to control alcohol intake following any drinking, would predict more successful outcomes.

Of interest in this study is that other clinical and demographic variables showed no clear relationships with outcome. The absence of any association with severity of alcohol dependence was especially interesting, in view of severity of dependence as a predictor of poorer outcome in previous research (Sitharton & Kavanagh, 1990). The SADQ is a well recognized questionnaire and this result is unlikely to be due to its insensitivity to alcohol dependence. This result is more likely to be due to the restricted range in the group, given the very high average dependence in the current sample. A larger sample, with a wider range of responses would be necessary to establish whether there is a predictive effect from dependence. Related to this was the finding that level of psychological distress was not associated with outcome. Again, this may be a reflection of the group characteristics as the vast majority scored above caseness in this measure and a wide range of scores was not available.

McMahon and Jones (1993) maintain that in order for negative expectancy to rise to a level that is required to influence drinking decisions, adequate problem recognition has to take place. They describe this 'problem recognition process' as having three stages. Firstly, an individual has to recognise they are experiencing problems. Secondly, they must accept that alcohol misuse is at the root of the problems. Finally, they have to anticipate continuing or worsening problems if they maintain their current drinking pattern. The results of this current study have also found that beliefs about inability to control drinking are a prerequisite of good outcome. It appears that those individuals who recognise (based on past failed attempts) that they continue to drink more than they had intended, once they have any alcohol at all, do better in

treatment. It may be that this 'belief' is necessary for adequate problem-recognition to take place in the way that McMahon and Jones (1993) suggest. It is only once these individuals accept that they are unable to control alcohol intake that they can benefit from treatment. Although this finding runs counter to much of the research advocating controlled drinking as a viable treatment option, this result is based on the current sample. This sample consists of chronic drinkers, with long histories of dependent, problematic drinking. For this group, those individuals who recognise their inability to control drinking, have better outcomes at 3-month follow-up. It is not this group of problem-drinkers that a 'controlled-drinking' option would be advocated as an initial treatment goal (Heather & Robertson, 1983).

Although a significant interactive affect was not found in this sample, a trend was identified, which suggests that further exploration about 'beliefs' about control, may be one factor that underpins the decision to change addictive behaviour. Being highly motivated is clearly important in terms of predicting good outcome, but recognising personal inability to control alcohol use also exerts influence, additionally, to outcome.

Treatment Applications

The findings of this study confirm that motivation, measured at treatment intake, has a bearing on outcome. Also, negative expectancy provides a reliable framework for measuring, and manipulating motivation in the desired direction (Jones, McMahon & Smith, 1996).There is also support for considering a, combined 'motivation / beliefs about control' assessment as this is likely to provide a better representation of a clients likelihood of achieving an abstinence or controlled drinking treatment goal. A clients beliefs about their ability to control drinking may have more impact on outcome than traditional ways of selecting treatment goals such as severity of dependence and social stability (Heather & Robertson, 1983). Focusing on interventions, a clients personal NAEQ ratings could be used within motivational enhancement sessions (Miller & Rollnick, 1991). Those negative expectancies rated most severly could be reinforced, while those evaluated more mildly could be challenged (Jones & McMahon, 1996). Increasing motivation in this way seems especially important for those individuals who enter treatment in a low motivational state. Through an individually tailored

motivational interview, clients can be guided through the problem-recognition process considered as a necessary stage prior to commitment to change. This may, in itself, be all that is required to bring about change, or as a way of maximising the effect of more traditional treatments for problem drinkers.

Conclusions

Overall, the results of this study provide further evidence that the concept of 'motivation for change' plays a central part in recovery from problem drinking. Negative expectancy provides a useful framework for accounting for motivation, and this can be reliably measured using the NAEQ. For chronic, dependent drinkers, recognition that they are unlikely to control drinking once any alcohol is consumed, is predictive of good outcome. For this group, this may be a necessary step for accurate problem recognition which is part of the process which leads to behaviour change. Motivational enhancement strategies, based on individual NAEQ evaluations, can be used as a treatment approach on their own, or to maximise the effect of traditional treatment.

Future Research

This study was based on a sample of chronic, dependent problem-drinkers who described significant alcohol-related problems. It may be that the high-level of alcohol-related damage within this sample, prevented relationships between 'negative-expectancy' and 'impaired-control' from emerging, beyond the trend that was identified. A sample including those with lower average consumption and related problems, may yet demonstrate interactions to indicate appropriate treatment goals. The relationship between motivation and impaired control among clients pursuing different treatment goals (rather than just abstinence) is an area which requires further research.

REFERENCES.

Allan, C.A. (1991). Psychological symptoms, psychiatric disorder and alcohol dependence amongst men and women attending a community-based voluntary agency and an Alcohol Treatment Unit, *British Journal of Addiction*, 86, 419-427.

Bandura, A. (1969). *Principles of behaviour modification.* New York : Holt, Rinehart and Winston.

Edwards, G., Gross, M.N., Keller, M., Moser, J. & Room, R. (Eds.) (1977). **Alcohol Related Disabilities, WHO Offset Publication No. 32 (Geneva, World Health** Organization).

Field, A. (2000). *Discovering Statistics Using SPSS for Windows.* Sage Publications.

Fromme, K. & D'Amico, E.J. (2000). Measuring adolescent alcohol outcome expectancies. *Psychology of Addictive Behaviours*, 14, 206-212.

Goldberg, D.P. & Hillier, V.P. (1979). A scaled version of the General Health Questionnaire. *Psychological Medicine*, 9, 139-145.

Heather, N. & Robertson, I. (1983). *Controlled Drinking* (2nd Ed.). London. Methuen.

Heather, N. & Tebbutt, J. (1992). Definitions of Non-Abstinent and Abstinent Categories in Alcoholism Treatment Outcome Classifications: A Review and Proposal. *Annual Rev. of Addictions Research and Treatment*, pp. 279-288.

Heather, N., Tebbutt, J.S., Mattick, R.P., Zamir, R. (1993). Development of a scale for measuring impaired control over alcohol consumption : A preliminary report. *Journal of Studies on Alcohol.* Vol 54 (6), 700-709.

Heather, N., Booth, P., Luce, A. (1998). Impaired Control Scale : Cross Validation and relationships with Treatment outcome. *Addiction.* Vol 93 (5), 761-771.

Jellineck, E.M. (1960). The disease concept of alcoholism. Hillhouse, New Haven.

Jones, B.T., & McMahon, J. (1994a). Negative alcohol expectancy predicts post-treatment abstinence survivorship : The whether, when and why of relapse to a first drink. *Addiction.* 89, 1654-1665.

Jones, B.T. & McMahon, J. (1994b). Negative and positive alcohol expectancies as predictors of abstinence after discharge from a residential treatment programme : a one and three month follow-up study in males. *Journal of Studies on Alcohol.* 55, 543-548.

Jones, B.T., & McMahon, J. (1996a). Alcohol expectancies at admission and discharge and changes in these expectancies relate to post-treatment abstinence survivorship. *British Journal of Clinical Psychology.* 35 (2), 221-233.

Jones, B.T. & McMahon, J. (1996b). A comparison of positive and negative alcohol expectancy and value and their multiplicative composite as predictors of post-treatment abstinence survivorship. *Addiction,* 91 (1), 88-89.

Jones , B., McMahon, J. & Smith, I. (1996, November). Can a motivational enhancement session driven by client-specific information obtained from the Negative Alcohol Expectancy Questionnaire improve outcome? Paper presented at the Association for the Advancement of Behaviour Therapy 30th Annual Convention, New York.

Jones. B.T., & McMahon, J. (1998). Alcohol Motivations as Outcome Expectancies. In W.R. Miller & N. Heather (Eds.), *Treating Addictive Behaviours* (pp. 75-91) New York : Plenum Press.

Jones, B.T., Corbin, W. Fromme, K. (2001). A review of expectancy theory and alcohol consumption. *Addiction,* 96, 57-72.

Lang, A.R. & Michalec, E.M. (1990). Expectancy effects in reinforcement from alcohol. In W.M. Cox (Ed), *Why People Drink: Parameters of Alcohol as a Reinforcer.* New York, Gardner.

Lee, N.K. , Greely, J. & Oei, T. P. S. (1999). The relationship of positive and negative alcohol expectancies to patterns of consumption of alcohol in social drinkers, *Addictive Behaviours,* 24, 359-369.

McMahon, J., & Jones, B.T. (1993a). Negative expectancy in motivation. *Addiction Research,* 1, 145-155.

McMahon, J., & Jones, B.T. (1996). Post-treatment abstinence survivorship and motivation for recovery : The predictive validity of the Readiness to Change (RCQ) and the Negative Alcohol Expectancy (NAEQ) questionnaires. *Addiction Research,* 4, 161-176.

Project Match Research Group (1993). Project Match; Rationale and methods for a multisite clinical trial matching patients to alcoholism treatment. *Alcsm Clin. Exp. Res.* 17: 1130-1145

Rotter, J.B., Chance, J.E., & Phares, E.J. (1972). *Applications of social learning theory to personality.* New York : Holt, Rinehart and Winston.

Sitharton, T. & Kavanagh, D.J. (1990). Role of self-efficacy in predicting outcomes from a program for controlled drinking. *Drug and Alcohol Dependence, 27,* 87-94

Sobell, L.C., Sobell, M.B., Leo, G. I. and Cancilla, A. (1988). Reliability of a Timeline Method : assessing normal drinker's reports of recent drinking and a comparative evaluation across several populations. *British Journal of Addiction, 83,* 393-402.

Stockwell, T., Murphy, D. & Hodgson, R. (1983). The severity of alcohol dependence questionnaire : its use, reliability and validity. *British Journal of Addiction, 78,* 145-155.

Williams, B. & Drummond, D.C. (1994). Alcohol Problems Questionnaire : reliability and validity. *Drug and Alcohol Dependence, 35,* 239-243.

Table 1 : Summary demographic and clinical information on the total sample (n=83), the follow-up group (n=60) and the non-follow-up group (n-23).

Variable	Total Sample (n=83)	Follow-up Group (n=60)	Non-follow-up Group (n=23)

Demographics

Age	43 (10)	45 (9)	39 (10)
Mean yrs. (SD)			
Range yrs.	19-6	29-68	19-59
Gender			
Male (n/%)	73 (88%)	52 (87%)	21 (91%)
Female (n/%)	10 (12%)	8 (13%)	2 (9%)
Marital Status			
Single (n/%)	30 (36%)	18 (30%)	12 (52%)
Married (n/%)	22 (27%)	19 (32%)	3 (13%)
Sep/divorced (n/%)	30 (36%)	22 (36%)	8 (35%)
Widowed (n/%)	1 (1%)	1 (2%)	0 (0%)
Living Arrangements			
Alone (n/%)	48 (58%)	36 (60%)	12 (52%)
Partner/family (n/%)	34 (41%)	24 (40%)	10 (44%)
Hostel (n/%)	1 (1%)	0 (0%)	1 (4%)
Employment Status			
Employed (n/%)	20 (24%)	13 (22%)	7 (30%)
Unemployed (n/%)	59 (71%)	43 (72%)	16 (70%)
Retired (n/%)	4 (5%)	4 (6%)	0 (0%)

Drinking Details

Years Problem Drinking			
Mean yrs. (SD)	18 (9)	20 (9)	15 (9)
Range yrs.	3-40	3-40	3-34
PDA in last 3 months			
Mean (SD)	20% (27)	21% (27)	17 (25)
Range	0-92	0-92	0-83
DDD in last 3 months			
Mean (SD)	34 (12)	34 (12)	34 (13)
Range	13-60	13-60	14-60
SADQ			
Mean (SD)	37 (12)	38 (12)	36 (10)
Range	14-58	14-58	14-53
APQ			
Mean (SD)	15 (5)	15 (5)	15 (5)
Range	2-22	6-22	2-22

Psychological Distress

GHQ			
Mean (SD)	14 (7)	15 (8)	13 (7)
Range	0-27	0- 27	1-27

Table 2 : Pearsons Correlation analysis which displays baseline scores correlated with PDA and DDD (T2). The correlations between the other variables are shown below the broken line.

	PDA	DDD	NAEQ-TS	Proximal	Distal	ICS-1	ICS-2	ICS-3	SAD-Q	GHQ	APQ
PDA	1.00	-.718	.266*	.077	.352**	.254*	-.075	.227*	.014	.141	-.064
DDD		1.00	-.198	-.069	-.228*	-.127	.126	-.147	.067	.000	.109
NAEQ-TS			1.00	.820**	-.948**	-.106	.529**	.453**	.626**	.463**	.463**
Proximal				1.00	.624**	-.188*	.551**	.420**	.541**	.254*	.377**
Distal					1.00	-.028	.431**	.407**	.568***	.500**	.415**
ICS-1						1.00	-.449**	-.021	-.132	.061	-.168
ICS-2							1.00	.432**	.499**	.181	.413*
ICS-3								1.00	.34**	.269**	.312**
SAD-Q									1.00	.335**	.571**
GHQ										1.00	.423**
APQ											1.00

* Correlation significant at 0.05 level (1-tailed)

** Correlation significant at 0.01 level (1-tailed).

Table 3 : Stepwise multiple regression for drinking outcome (PDA) with predictor variables, NAEQ-Total Score, NAEQ-Distal, ICS-1 and ICS-3

Variable	B	S.E.	R^2	t	Sig
Step 1. NAEQ-Distal	.412	.143	0.124	2.89	0.005
Step 2. NAEQ & ICS-1	1.83	.891	0.184	2.06	0.044

1.   Excluded variables : ICS - 1,   ICS - 3, NAEQ-Total Score.

2.   Excluded variables :   ICS - 3. NAEQ-Total Score.

Table 4 : **Means and standard deviations for each of the NAEQ and ICS subscales for the total sample and each of the outcome categories at follow-up. Results of t-tests comparing the means of the outcome categories are displayed.**

	Total Sample	Treatment successes	Treatment failures.	t	sig.
NAEQ					
Full score.					
Mean	188	201	177	2.07	0.04*
SD.	44	42	47		
Proximal					
Mean	57	59	55	0.93	0.35
SD.	16	17	15		
Distal					
Mean	131	142	123	2.33	0.02*
SD.	32	28	35		
ICS					
1 - Attempted Control					
Mean	9	9	9	0.20	0.29
SD	5	5	5		
2 - Failed Control					
Mean	29	28	29	-0.37	0.71
SD	7	6	8		
3 - Perceived Control					
Mean	28	30	26	2.11	0.03*
SD	8	6	10		

* = $p < .0.05$

Note - Higher NAEQ, Proximal and Distal scores suggest greater motivation. Higher ICS-1 scores indicate that participants have attempted more often to control their alcohol intake in the last 6 months, higher ICS-2 scores indicate they have failed more often, and higher ICS-3 scores indicates these participants are more likely to predict failure to control alcohol consumption once they drink any alcohol at all.

Table 5 : **Results of stepwise logistic regression analysis which included NAEQ-Total score, NAEQ-Distal and ICS-3 as predictors of the outcome groups, 'Treatment Success' and 'Treatment Failures'.**

Variable Included in model	B	S.E.	Wald	Sig
NAEQ-Distal	-.019	.008	4.88	0.02

model x^2 significance = p<0.02

Variables excluded from the analysis: NAEQ-Total score, ICS-3.

NAEQ-Total score	p = 0.704
ICS-3	p =0.289

Table 6 : **Displays model summarys for regression analysis where 'model 1' is an additive model including NAEQ-Distal and ICS-1, and 'model 2' includes a third variable, NAEQ-Distal x ICS-1 which is the interaction between the two.**

Model	R	R^2	Adjusted R^2
1	0.429	0.184	0.156
2	0.444	0.197	0.154

Table 7 : Results of logistic regression analysis which includes NAEQ-Distal, ICS-3 and a third variable, NAEQ-Distal x ICS-3, which is the interaction between the two.

Variable	B	S.E.	Wald	Sig.
NAEQ-Distal	-.101	.049	4.11	0.042
ICS-3	-.450	.234	3.6 9	0.054
NAEQ-Distal x ICS-3	.003	.007	3.30	0.069

5. Clinical Case Research Study

Cognitive interventions in a patient with an anxiety disorder related to diabetes.

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Abstract

The use of cognitive models for understanding and treating anxiety disorders have proven efficacy. For patients with chronic medical problems their use seems particularly relevant if patients engage in 'safety behaviour' which in itself leads to poor management of the physical disease. This study extends the data on the efficacy of cognitive interventions and describes the case of a 37yr-old woman with an anxiety disorder related to diabetes. The effects on panic frequency, use of safety behaviour and related beliefs were investigated on the introduction of two main cognitive interventions. The results are consistent with predictions from the cognitive model of panic. The case provides an example of how self-correction of distorted beliefs had not happened due to the occurrence of safety-seeking behaviour. It demonstrates the usefulness of directly challenging the 'meaning' of the feared situation in order to produce clinically significant improvements. The discussion focuses on the need for increased recognition of the role of psychological factors in helping patients adjust to chronic medical problems and in treating co-existing psychological disorders.

Keywords; cognitive interventions, anxiety, safety-behaviour, diabetes, chronic medical problems

6. Appendices

Notes for Contributors

Papers, articles and other contributions should be sent to the Editor, *Health Bulletin*, Scottish Executive Health Department, Room IE05, St Andrew's House, Edinburgh EH1 3DE. They must be submitted exclusively for *Health Bulletin*. Acceptance is on the understanding that editorial revision may be necessary. All papers are reviewed by the Editor and by peer review, referees being drawn from a panel of appropriate professionals. No correspondence can be entered into in relation to articles found to be unsuitable and returned to authors.

Potential contributions can be submitted in two ways. Material submitted for publication must be typewritten on one side of the paper only, in double spacing and with adequate margins, and each page should be numbered. The top typed copy should be submitted, with four other copies. We are willing to receive one copy typewritten in the above format and accompanied by a disk (Microsoft Word version 98, Excel for tables and figures). All papers should be prefaced by a structured Abstract, of about 250 words in length. It should normally contain six clearly headed sections entitled Objective, Design, Setting, Subjects, Results and Conclusion. The name, appointment and place of work of the authors should be supplied on a separate title page. This same page should include the full postal address of one author, to whom correspondence and reprints will be directed. There should be adequate references to any relevant previous work on the subject; these references should appear at the end of the material on a separate page or pages, using the Vancouver style, which in the case of papers in journals includes:

> Surname and initials of author(s)
> Title of paper
> Full name of journal
> Year published
> Volume number
> Opening and closing page numbers

Reference to books should similarly include author's name and initials, full title, edition (if necessary), place of publication, publisher's name, year and, if required, volume number, chapter number or page number.

Short Communications. *Health Bulletin* publishes short communications (not exceeding four pages in length) as a separate section, and we aim to offer speedier publication for these. Material intended for this section should be submitted in the above form, and the covering letter should state the intention.

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Proofs

Contributors will receive one set of proofs. This should be read carefully for printer's errors, and any tables, figures and legends should be checked. Alterations should be kept to a minimum, and the proofs should be returned promptly.

Reprints

Ten reprints will be supplied free of charge.

Patient Discharge Sheet

Patient Code:

Psychologist:

DNA FIRST APPT

Failed to attend first appt	1
Failed to attend other first appt	2
N/A	3

Date of Proposed Initial Assessment ....

Insert Problem / Diagnosis and Code (Please use ICD-10)
(a)
(b)
(c)
(d)   N/A

POST TREATMENT

No. of appointments / Individual Sessions				No. of group sessions			
Attended		Canc		Attended		Canc	
DNA		N/A		DNA		N/A	

Form of Treatment

Individual	Yes / No
Conjoint	Yes / No
Group	Yes / No
N/A	Yes / No

Type of Treatment

Cognitive - Behav	1
Behav Mod	2
Psychotherapy	3
Counselling	4
Cognitive Assessment	5
N/A	6

OUTCOME

Problem Outcome

	(a)	(b)	(c)
Worse	1	1	1
No Change	2	2	2
Slightly Improved	3	3	3
Moderately Improved	4	4	4
Substantially Improved	5	5	5
N/A	6	6	6

General Well-being

Generally Worse	-1
Much the same	0
A bit better	1
A lot better	2
Completely Well	3
N/A	4

Length of time in treatment (months / weeks) ....

Date of Discharge ....

Displays the full range of presenting problems in the discharge sample.

Frequency of Problem Types in Discharge Sample
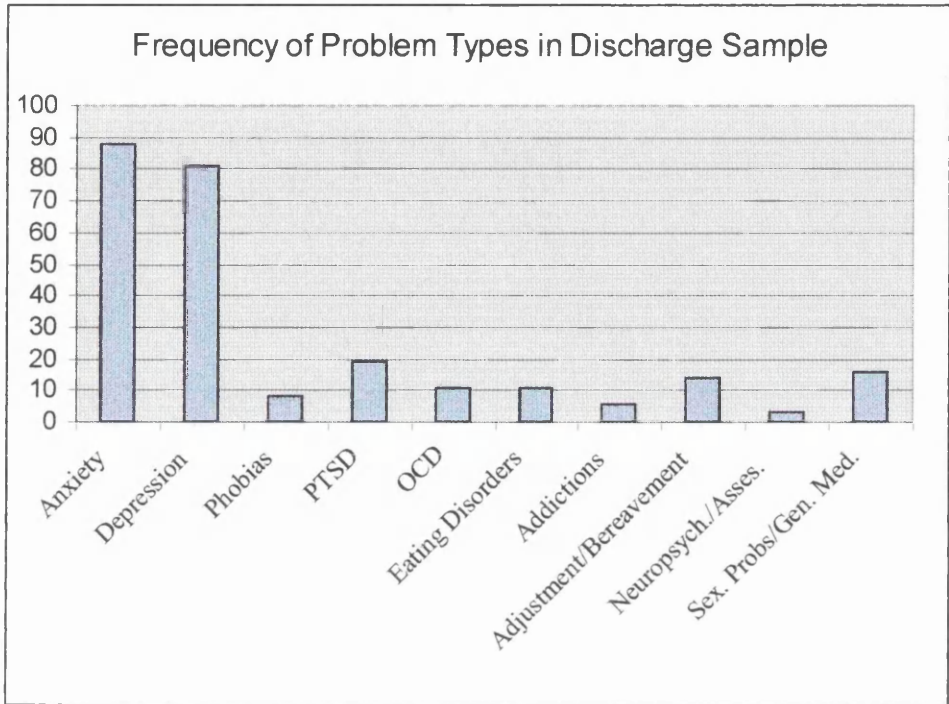
Problem Type	Frequency
Anxiety	88
Depression	81
Phobias	8
PTSD	19
OCD	11
Eating Disorders	11
Addictions	6
Adjustment/Bereavement	14
Neuropsych./Asses.	3
Sex. Probs/Gen. Med.	16
Total	257

Displays the 'Status' of patients at discharge (non-attenders;drop-outs;completers), with 'Primary Diagnosis'.
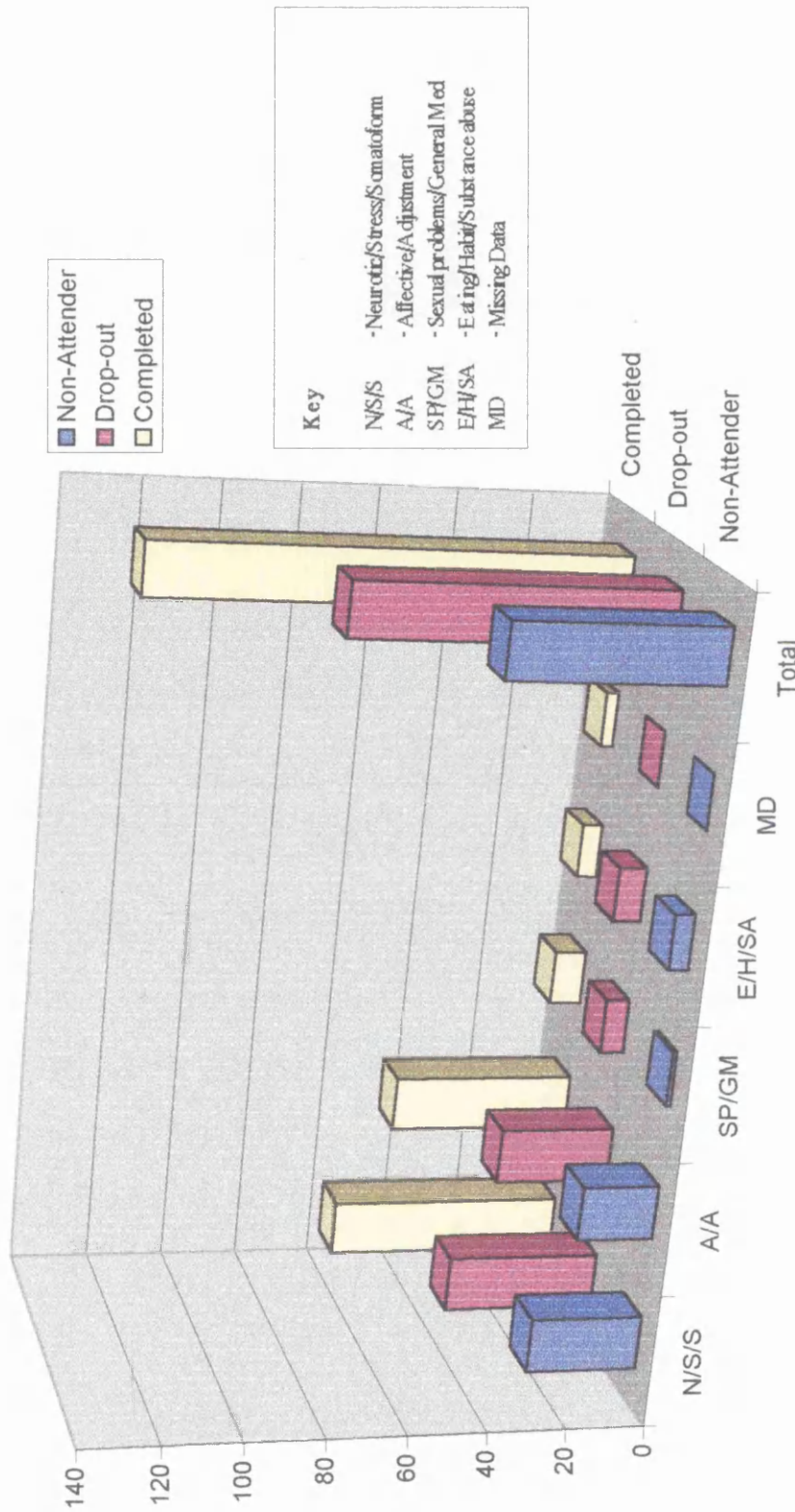
	N/S/S	A/A	SP/GM	E/H/SA	MD	Total
Non-Attender	28	19	1	5	0	53
Drop-out	39	29	6	7	0	81
Completed	60	47	8	5	3	123

Key

N/S/S - Neurotic/Stress/Somatoform
A/A - Affective/Adjustment
SP/GM - Sexual problems/General Med
E/H/SA - Eating/Habit/Substance abuse
MD - Missing Data

Addiction

The journal fully supports the "Farmington Consensus" (*Addiction*, 1997, 92, 1617–1618).

Guidance to Authors

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General matters

Addiction's goal is to serve international and interdisciplinary scientific and clinical communication, to strengthen links between science and policy, and to stimulate and enhance the quality of debate. Books and major reports may be submitted for review, and material for the News and Notes section is welcomed. We seek to serve the developing as well as the developed world. We regret that we are not able to return manuscripts.

Ethical standards

Manuscripts are accepted on the understanding that they are subject to editorial revision. Submissions must be accompanied by a signed statement from all authors saying that: (a) the material has not been published in whole or in part elsewhere; (b) the paper is not currently being considered for publication elsewhere; (c) all authors have been personally and actively involved in substantive work leading to the report, and will hold themselves jointly and individually responsible for its content; (d) all relevant ethical safeguards have been met in relation to patient or subject protection, or animal experimentation. This statement must also declare sources of funding, direct or indirect, and any connection with the tobacco, alcohol or pharmaceutical industries. With regard to points (a) and (b): if data from the same study are reported in more than one publication, this should be stated in the manuscript and/or covering letter to the editor, along with a clear explanation as to how the submitted manuscript differs, and copies of closely related manuscripts reporting these data should be enclosed. If at any stage during the handling of their submission, authors decide to withdraw it, we ask them to notify the editor.

Length

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For electronic submissions by email or disk please see the *Addiction* page on our Website:
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Abstract

In the case of research reports, abstracts should use the following headings: Aims, Design, Setting, Participants, Intervention (experimental trials only), Measurements, Findings, and Conclusions. The findings should be clearly listed because it is the list of findings that will form the main basis for the editorial decision. Each finding will be evaluated in terms of its **importance if true** and the **confidence that can be placed on it** given the evidence. In the case of other types of paper, there are no formal requirements for the structure of abstracts but it must be clear from the abstract what conclusions are being drawn because evaluation of these will be central to the refereeing process. Abstracts should normally be no more than 250 words.

References

These may be submitted in either the Harvard or Vancouver systems. When following the *Harvard system* references should be indicated in the typescript by giving the author's name, with the year of publication in parentheses, e.g. Smith (1984); if there are three authors Smith, Green & Jones (1984) on the first citation

and Smith *et al.* (1984) subsequently; or if there are more than three authors Smith *et al.* (1984) throughout. If several papers from the same authors and from the same year are cited, (a), (b). (c). etc. should be put after the year of publication. References should be listed at the end of the paper in alphabetical order. Examples are:

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The references should be listed in numerical order at the end of the paper. Examples are:

1. COTTON, N. (1987) The familial incidence of alcoholism, *Journal of Studies on Alcohol*, 40, 89–116.
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Information Sheet

For patients in a Clinical Research Study.

Project Aim:

We are undertaking a study to look at some of the factors we think may influence peoples decision to reduce or stop their drinking. This kind of research can increase our knowledge about alcohol problems and help us to plan treatment intervention to suit individuals who come for help.

Who am I looking for ?

I would like to meet patients who have been admitted to the Alcohol Problems and Treatment Unit over the last week.

What do I have to do ?

Taking part in this study involves having 2 separate interviews with the researcher which will each last about 40 minutes. The first meeting will take place a few days after you have been admitted to the Alcohol Problems and Treatment Unit and the second meeting will be around 3 months later.

We are interested in your opinion about the effect that drinking alcohol is having on your life and about your attempts to control or stop drinking in the past. You will be asked some questions about yourself and about your drinking. Next, the researcher will work through a few questionnaires with you. These ask your opinion about the effects of your drinking on your life and your attempts to reduce your drinking.

You will have no further contact with the project for 3 months and then you will be contacted again to arrange a second meeting at a time and venue that suits you. At this meeting you will be asked about your drinking over the 3 months since you were first interviewed. You will also work through the same questionnaires with the researcher that you completed at the first interview.

Where ?

This study will be conducted in Gartnavel Royal Hospital either in the Alcohol Problems and Treatment Unit or in the Out-Patients Department. If you prefer the interview can take place in your own home.

Will taking part or not taking part influence my treatment ?

If you agree to participate in the study you will be free to withdraw at any stage. Refusal or withdrawal will not effect the treatment that you receive.

If I agree to take part ?

If you agree to take part in this study your responses will be treated as strictly confidential. The forms will be destroyed at the end of the study.

If you would like to take part in this research please read and sign the consent form attached.

Thanks for your attention.

Susan Boyle
Clinical Psychologist
Gartnavel Royal Hospital.

Consent Form

Aims of Study:

To understand some of the factors which influence peoples decision to reduce or stop their drinking.

(delete as appropriate)

- I have read the attached information letter   YES / NO

- I agree to take part in this study   YES / NO

- I understand that I am free to withdraw from this
  study at any point without giving any reason and
  this will not have any effect upon my normal treatment   YES /NO

- I understand that all my responses will be treated as
  strictly confidential.   YES / NO

- I have had the opportunity to ask questions.   YES / NO

Consent

I……………………………………………………………… (name in capitals)

of……………………………………………………………………………….

……………………………………………………………….(address in capitals)

agree to take part in this research project, the nature and purpose of which has been described to me.

Subjects signature

……………………………………………………   Date…………………

Researchers signature

……………………………………………………   Date…………………

Assessment Schedule   Date:

- Demographic Information

    Surname: _____   Male / Female
    Forename: _____

    Address: _____

                _____
                _____   Date of Birth: _____

    Contact telephone number: _____

    Currently living with: _____
    Employment status: _____
    Marital status: _____
    Occupation: _____

- Name of Collateral: _____

    Address: _____   Relationship: _____

                _____
                _____

    Contact telephone number: _____

- Brief Alcohol History

    Number of years problem drinking: _____
    Number of years relief drinking: _____
    Age at first drink: _____

    Estimated number of days abstinent in
    past 3 months: _____

    Estimated average number of drinks
    per drinking day in last 3 months: _____

- Treatment Aim

  Abstinence   Control   Undecided

- <u>Questionnaire Scores</u>

  Initial   Follow-up

	Initial	Follow-up
PDA - 3 months		
DDD - 3 months		
NAEQ		
ICS		
APQ		
GHQ		
SADQ		

Alcohol Problem and Treatment Unit
Gartnavel Royal Hospital
1055 Great Western Road
GLASGOW
G12 0XH

Dear

It is now 3 months since we met in the Alcohol Unit when you kindly agreed to take part in my research project. You will recall that you filled in some questionnaires for me and answered some questions about your drinking.

When we last met I told you that I would contact you again in 3 months to see how you are getting on with trying to change your drinking. I would be grateful if I could see you again. I have arranged an appointment for you

On...

At...

If this date and time is not suitable could you please telephone me to rearrange it. If you cannot attend an appointment I would welcome the chance to speak to you on the telephone to find out how you are.

I look forward to seeing you.

Yours sincerely

Susan Boyle
<u>Chartered Clinical Psychologist</u>
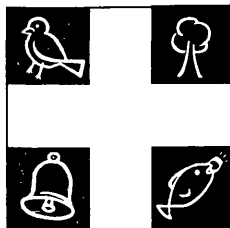
Ref: AMcM

**GREATER GLASGOW
PRIMARY CARE
NHS TRUST**

27 April, 2000

Dr Susan Boyle
Lansdowne Clinic
3 Whittinghame Gardens
Great Western Road
Glasgow
G12 0AA

Dear Dr Boyle

**PROJECT: *Does imparied control over drinking mediate "the alcohol expectancy -
motivation for recovery relationship"***

Many thanks for sending the above named submission to the Research Ethics Committee - it was
discussed at our meeting on Thursday, 13 April, 2000.   I am pleased to be able to tell you that
ethical approval has been granted subject to change -

a) There was some dubiety regarding the length of time of the interview sessions - one part of
    the submission indicated a 60 minute session and then a 40 minute session; the Committee
    would suggest that the patient information sheet indicate that the participant would be seen
    twice for 40 minutes.
b) The phrase "Your participation would be very much appreciated.." should be deleted from the
    patient information sheet as this could be interpreted as being coercive.

Yours sincerely

**A W McMAHON
Administrator – Research Ethics Committee**

Addiction

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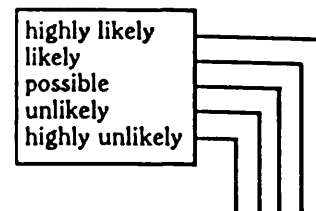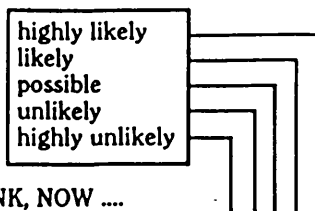http://www.tandf.co.uk/journals/carfax/09652140html

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NEGATIVE ALCOHOL EXPECTANCY QUESTIONNAIRE

Below is a list of things that you might or might not expect to happen to you during or after drinking. Please will you indicate the likelihood of each of these things happening to you if you were to go for a drink NOW. Do this by circling the appropriate number on the 1-2-3-4-5 scale. Please be sure to answer every question.

```
highly likely
likely
possible
unlikely
highly unlikely
```

```
highly likely
likely
possible
unlikely
highly unlikely
```

IF I WENT FOR A DRINK, NOW ....

1 I would become argumentative   1 2 3 4 5
2 I would become aggressive   1 2 3 4 5
3 I would become violent   1 2 3 4 5
4 I would become anxious   1 2 3 4 5
5 I would have an accident   1 2 3 4 5
6 I would become depressed   1 2 3 4 5
7 I would get drunk   1 2 3 4 5
8 I would get in a fight   1 2 3 4 5
9 I would have memory lapses   1 2 3 4 5
10 I would lie about how much I had to
   drink   1 2 3 4 5
11 I would end up in jail   1 2 3 4 5
12 I would argue with my spouse   1 2 3 4 5
13 I would have difficulty sleeping   1 2 3 4 5
14 I would wet the bed   1 2 3 4 5
15 I would become boastful   1 2 3 4 5
16 I would borrow money   1 2 3 4 5
17 I would consider taking other drugs   1 2 3 4 5
18 I would take other drugs   1 2 3 4 5
19 I would lose my driving license   1 2 3 4 5
20 I would drink more than the others
   in my company   1 2 3 4 5
21 I would have difficulty in stopping
   drinking   1 2 3 4 5
```

IF I WENT FOR A DRINK, NOW,
THEN TOMORROW...

```
22 I would miss work                     1 2 3 4 5
23 I would have 'the shakes'             1 2 3 4 5
24 I would have 'the sweats'             1 2 3 4 5
25 I would have a hangover               1 2 3 4 5
26 I would feel depressed                1 2 3 4 5
27 I would have low self-esteem          1 2 3 4 5
28 I would crave a drink                 1 2 3 4 5
29 I would have difficulty sleeping      1 2 3 4 5
```

```
30 I would feel generally ill            1 2 3 4 5
31 I would feel frightened               1 2 3 4 5
32 I would feel guilty                   1 2 3 4 5
33 I would feel remorseful               1 2 3 4 5
34 I would feel anxious                  1 2 3 4 5
35 I would be shy of meeting people      1 2 3 4 5
36 I would feel restless                 1 2 3 4 5
37 I would be sick                       1 2 3 4 5
38 I would be unable to eat              1 2 3 4 5
39 I would go on a binge                 1 2 3 4 5
```

IF I CONTINUED TO DRINK AT
MY PRESENT LEVEL, THEN.....

```
40 I would lose my wife/husband          1 2 3 4 5
41 I would lose my house                 1 2 3 4 5
42 I would lose my job                   1 2 3 4 5
43 I would have the DTs                  1 2 3 4 5
44 I would have convulsions              1 2 3 4 5
45 I would lose my friends               1 2 3 4 5
46 I would get into debt                 1 2 3 4 5
47 I would end up in hospital            1 2 3 4 5
48 I would end up sleeping rough         1 2 3 4 5
49 I would consider suicide              1 2 3 4 5
50 I would attempt suicide               1 2 3 4 5
51 I would feel frightened               1 2 3 4 5
52 I would feel depressed                1 2 3 4 5
53 I would feel self-loathing            1 2 3 4 5
54 I would feel self-pity                1 2 3 4 5
55 I would lose all respect for myself   1 2 3 4 5
56 I would end up in jail                1 2 3 4 5
57 I would damage my liver               1 2 3 4 5
58 I would feel I was going mad          1 2 3 4 5
59 I would choke on my own vomit         1 2 3 4 5
60 I would die                           1 2 3 4 5
```

Part 1	Please tick the alternative, which best describes <u>how often</u> the following items have applied to you **during the last six months**.	

1   **During the last six months, I tried to limit the amount I drank.**

Never ☐0   Rarely ☐1   Sometimes ☐2   Often ☐3   Always ☐4

2   **During the last six months, I tried to resist the opportunity to start drinking.**

Never ☐0   Rarely ☐1   Sometimes ☐2   Often ☐3   Always ☐4

3   **During the last six months, I tried to slow down my drinking.**

Never ☐0   Rarely ☐1   Sometimes ☐2   Often ☐3   Always ☐4

4   **During the last six months, I tried to cut down my drinking (i.e. drink less)**

Never ☐0   Rarely ☐1   Sometimes ☐2   Often ☐3   Always ☐4

5   **During the last six months, I tried to stop drinking for a period of time.**

Never ☐0   Rarely ☐1   Sometimes ☐2   Often ☐3   Always ☐4

Score 1

Part 2 | Tick the alternative which best describes how often you have experienced the following situations or feelings **during the last six months**. Please note - we are not interested in what you believe about your drinking, but what you have <u>actually done</u> in the last six months. If a statement does not apply <u>because you have made no attempt to limit your drinking in the situation described in the last six months, please tick "Does not apply"</u>.

For example, it might ask you how often in the last six months you were able to resist drinking when you saw your favourite drink. If you <u>did not try</u> to resist drinking when you found yourself in this situation in the last six months, you would tick "Does not apply". You would only tick "Never" if you <u>tried to resist</u> drinking but were never able to manage to do so. Please use "Does not apply as often as you think necessary. If you have any problems with these instructions, please ask the questionnaire administrator.

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1   During the last six months, I found it difficult to limit the amount I drank.

Never ☐0   Rarely ☐1   Sometimes ☐2   Often ☐3   Always ☐4   Does not apply ☐

2   During the last six months, I started drinking even after deciding not to.

Never ☐0   Rarely ☐1   Sometimes ☐2   Often ☐3   Always ☐4   Does not apply ☐

3   During the last six months, even when I intended having only one or two drinks, I ended up having many more.

Never ☐0   Rarely ☐1   Sometimes ☐2   Often ☐3   Always ☐4   Does not apply ☐

4   During the last six months, I was able to cut down on my drinking (i.e. drink less) when I wanted to.

Never ☐4   Rarely ☐3   Sometimes ☐2   Often ☐1   Always ☐0   Does not apply ☐

5   During the last six months, I started drinking at times when I knew it would cause me problems (e.g. problems at work, with family or friends, with the police etc.)

Never ☐0   Rarely ☐1   Sometimes ☐2   Often ☐3   Always ☐4   Does not apply ☐

6   During the last six months, I was able to stop drinking easily after one or two drinks.

Never ☐4   Rarely ☐3   Sometimes ☐2   Often ☐1   Always ☐0   Does not apply ☐

7   During the last six months, I was able to stop drinking before becoming completely drunk.

Never ☐4   Rarely ☐3   Sometimes ☐2   Often ☐1   Always ☐0   Does not apply ☐

8   During the last six months, I had an irresistible urge to continue drinking once I had started

Never ☐0   Rarely ☐1   Sometimes ☐2   Often ☐3   Always ☐4   Does not apply ☐

9   During the last six months, I found it difficult to resist drinking, even for a single day.

Never ☐0   Rarely ☐1   Sometimes ☐2   Often ☐3   Always ☐4   Does not apply ☐

Score 2

10   During the last six months, I was able to slow down my drinking when I wanted to.

Never ☐4   Rarely ☐3   Sometimes ☐2   Often ☐1   Always ☐0   Does not apply ☐

Part 3	In the previous section we asked you about what actually happened with your drinking over the last six months. In this section we are interested in what you think would happen with your drinking **now**. (Please assume that you have not decided to give up completely.)

1   I would find it difficult to limit the amount I drink.

Strongly Disagree ☐0   Disagree ☐1   Undecided ☐2   Agree ☐3   Strongly Agree ☐4

2   I would start to drink, even after deciding not to.

Strongly Disagree ☐0   Disagree ☐1   Undecided ☐2   Agree ☐3   Strongly Agree ☐4

3   Even if I intended having only one or two drinks, I would end up having many more.

Strongly Disagree ☐0   Disagree ☐1   Undecided ☐2   Agree ☐3   Strongly Agree ☐4

4   I could cut down on my drinking (i.e. drink less) if I wanted to.

Strongly Disagree ☐4   Disagree ☐3   Undecided ☐2   Agree ☐1   Strongly Agree ☐0

5   I would start drinking at times when I knew it would cause me problems (e.g. problems at work, with family/friends or with the police etc.).

Strongly Disagree ☐0   Disagree ☐1   Undecided ☐2   Agree ☐3   Strongly Agree ☐4

6   I could stop drinking easily after one or two drinks.

Strongly Disagree ☐4   Disagree ☐3   Undecided ☐2   Agree ☐1   Strongly Agree ☐0

7   I could stop drinking before becoming completely drunk.

Strongly Disagree ☐4   Disagree ☐3   Undecided ☐2   Agree ☐1   Strongly Agree ☐0

8   I would have an irresistible urge to continue drinking once I started.

Strongly Disagree ☐0   Disagree ☐1   Undecided ☐2   Agree ☐3   Strongly Agree ☐4

9   I would find it difficult to resist drinking, even for a single day.

Strongly Disagree ☐0   Disagree ☐1   Undecided ☐2   Agree ☐3   Strongly Agree ☐4 | Score 3 |

10   I could slow down my drinking if I wanted to.

Strongly Disagree ☐4   Disagree ☐3   Undecided ☐2   Agree ☐1   Strongly Agree ☐0

THE ALCOHOL PROBLEMS QUESTIONNAIRE:

All questions refer to <u>the past 6 months</u>. Please answer yes or no and complete all questions.

1) Have you tended to drink more on your own than you used to?   Yes / No

2) Have you worried about meeting your friends again the day after drinking?   Yes / No

3) Have you spent more time with drinking friends than other kinds of friends?   Yes / No

4) Have your friends criticised you for drinking too much?   Yes / No

5) Have you had any debts?   Yes / No

6) Have you pawned any of your belongings to buy alcohol?   Yes / No

7) Do you find yourself making excuses about money?   Yes / No

8) Have you been caught out lying about money?   Yes / No

9) Have you been in trouble with the police due to your drinking?   Yes / No

10) Have you lost your licence due to drinking and driving?   Yes / No

11) Have you been in prison?   Yes / No

12) Have you been physically sick after drinking?   Yes / No

13) Have you had diarrhoea after a drinking session?   Yes / No

14) Have you had pains in your stomach after a drinking session?   Yes / No

15) Have you had pins and needles in your fingers and toes?   Yes / No

16) Have you had any accidents, requiring hospital treatment, after drinking?   Yes / No

17) Have you lost any weight?   Yes / No

18) Have you been neglecting yourself physically?   Yes / No

19) Have you failed to wash for several days at a time?   Yes / No

20) Have you felt depressed for more than a week?   Yes / No

21) Have you felt so depressed that you felt like doing away with yourself?   Yes / No

22) Have you given up any hobbies you enjoyed, due to your drinking?   Yes / No

23) Have you found it hard to get enjoyment from your usual interests?   Yes / No