THE DEVELOPMENT AND EVALUATION
OF A PROGRAMME FOR THE TREATMENT OF
ALCOHOL DEPENDENCE

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Clive Garry Long PhD
Department of Psychology
University of Leicester

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CLIVE GARRY LONG

ABSTRACT

This thesis describes the development and the research evaluation of an alcohol treatment programme and was undertaken within the period 1990-1997. An independent healthcare organisation (St Andrew's Hospital) provides the setting for the study. The first chapter is concerned with placing the above development within an historical context, both in terms of a national/international treatment perspective and in terms of developments within the healthcare system. Chapter 2 focuses on the planning and implementation of change within the above unit, with particular reference to the development of an evidence-based treatment programme and the strategies used to ensure the successful management of change. The third chapter is concerned with examining the methodological and philosophical issues pertinent to the evaluation of outcome success for addiction treatment.

The findings from the major outcome study of the comparative merits of two treatment programmes are discussed in Chapter 4. The cost effectiveness of the two treatments is also assessed. Two further papers are concerned with the intake and process variables that may relate to treatment outcome. Chapter 5 examines the topic of dynamic and static predictors of outcome. Two studies deal respectively with staff and peer predictors of treatment success and of cognitive/subjective variables (self-efficacy and outcome expectations) as they relate to outcome. The final chapter (6) examines the implication for clinical practice and service development of the above work.
ACKNOWLEDGEMENTS

The realisation and completion through to publication of research in clinical settings is of necessity a team effort – firstly because the clinician, unlike the full-time researcher, is a part-time gatherer of data and, secondly, because the usefulness of applied clinical research is enhanced if it is 'owned' by more than one member of a clinical team. Many people (particularly those acknowledged below) have helped in the development of this work.

I owe a particular debt of gratitude to my supervisor Professor Clive Hollin whose wisdom and guidance has been vital to the completion of these studies.

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Finally, I would like to acknowledge the love, support and encouragement of my family with this, as with other projects I have undertaken – my wife Philippa, my late parents George and Jean, my brother Richard and my sister Sharon.
INTRODUCTION
This dissertation that follows is a development from PhD research undertaken at the University of Birmingham (Long C. G. 'The Clinical Psychologist as Scientist-Practitioner', 1995). Within this thesis, the Scientist-Practitioner model in clinical psychology was initially examined and illustrated by reference to applied research using archival data as well as survey, single-case and group design methodology. The definition of the Scientist-Practitioner as one who consumes and utilises research findings and who may also undertake applied research, was espoused and defended. The realisation of the Scientist-Practitioner ideal was viewed as being dependent on psychologists embracing a wide range of alternative research methods, on employment settings that support and internalise the model and on a recognition by researchers that they have a responsibility for disseminating their research findings through effective communication channels (Long & Hollin, 1997).

The dissertation that follows focuses on one aspect of the activity of the Scientist-Practitioner as researcher: the development of a clinical programme using research evidence and the concurrent evaluation of treatment services. It is specifically concerned with the treatment programme change and evaluation on a Hospital-based addiction unit. The work coincides with a considerable growth of interest in the measurement of outcomes of healthcare provision. This has been facilitated by the contracting process between purchasers and providers of services. The Health of the Nation document (1992) not only identifies "key areas" for actions but also specifies targets (outcomes) in several areas. Within the key area of coronary heart disease and stroke for example, one target is (see Health of the Nation 1992, p57): "to reduce the proportion of men drinking more than 21 units of alcohol per week from 28% in 1990 to 18% by 2005, and a proportion of women drinking more than 14 units of alcohol per week from 11% in 1990 to 7% by 2005". The National Health Service (NHS) Executive has reinforced the need to consider clinical effectiveness in contracting. Executive letter (1993) EL(93) 115 "Improving Clinical Effectiveness" and EL executive letter (1994) EL(94) 74 "Improving the Effectiveness of the NHS" encourages the accelerated adoption of clinical services with proved superior outcomes, from reports in the scientific literature into mainstream provision. Sources of information recommended by the NHS Executive Letters as useful for planning services include Effective Health Bulletins which have, themselves, been scrutinised for efficacy (Torgerson et al 1995) and Epidemiologically Base Needs Assessments. Alcohol misuse has been the theme of both (Effective Health Care No.7, 1993; Edwards and Unnithan, 1992). Providers and purchasers of services for alcohol dependency are likely to be progressively sensitised to issues of outcome, treatment efficacy and trends in the literature. In the United States, the advice to Congress
(Institute of Medicine 1990, p326) has been that: "A quantum increment in attention to outcome determination is crucial to the future of the effort to treat alcohol problems". A movement towards scientifically underpinned services has therefore not been confined to the United Kingdom.

Whether or not alcohol treatment is a priority and explicitly on the agenda of purchasers, the effects of alcohol misuse and alcohol dependency will effectively take up a massive part of a total purchasing budget. Further, there are persuasive reasons why all practising psychologists should be proficient in the assessment and treatment of alcohol problems (Miller & Brown, 1997). Surveys undertaken since the 1960's have consistently found that one in ten adults of the general population have significant problems related to his or her use of alcohol (Calahan, 1970; National Institute on Alcohol Abuse and Alcoholism, NAAA, 1993). Heavy drinking contributes to all "key areas" with the Health of the Nation – cancer, coronary heart disease and stroke, mental illness, accidents and human immunodeficiency virus (HIV) acquired immune deficiency syndrome (AIDS). Often, alcohol-related problems are treated in their acute form or symptomatically in general medicine, general practice, casualty and observation departments and psychiatry. About one-quarter of men in medical wards have a current drinking problem (see Lloyd et al, 1986). Problem drinkers consult their GPs nearly twice as often as the average patient (Buchan et al, 1981) and 51% of men and 31% of women who attempt suicide drink more than recommended limits (Merrill et al, 1992). Together substance abuse disorders represent the most frequently occurring mental health problem (Reiger et al, 1990). Substance abuse disorders are also the most frequently occurring comorbid disorders among those with mental health problems (Reiger et al, 1990) and adversely affect the clinical course and prognosis for other mental health problems (Rounsaville et al, 1987). Alcohol is involved in nearly one-half of road traffic fatalities and a substantial proportion of violent deaths, suicides, drowning, falls and other fatal accidents, constituting (after AIDS) the leading contributor to death among young people (Stinson et al, 1993). A failure to deliver effective treatment for alcohol problems results in escalating medical problems and healthcare costs (Kranzler et al, 1990). The cost to society of alcohol misuse is enormous (Maynard, 1989) and yet the benefit of timely brief intervention can be considerable (Effective Healthcare, 7, 1993). There is also evidence that the reduction in total healthcare costs of alcohol dependent patients, following treatment for alcohol problems, can more than offset the costs of their treatment (Holder & Blose, 1992). A failure therefore to recognise, assess and effectively treat alcohol problems is a most serious omission in any clinical setting.
The following thesis is concerned with the results to date of a continuing attempt to refine and evaluate a treatment programme for individuals with alcohol problems. It seeks to place this development within its historical and cultural context and to examine a sample of the multiplicity of factors that relate to treatment outcome.
CHAPTER ONE:

THE TREATMENT OF

PROBLEM DRINKING

IN A

HISTORICAL CONTEXT
The dangers of alcohol abuse have been recognized from the beginning of recorded history, although the term 'alcoholic' was not used until 1849 when the Swedish physician Magnus Huss used it to describe the adverse effects of excessive drinking. The public, professionals and politicians employ a number of models to understand and explain alcoholism. However, conventional notions concerning the nature of alcoholism are seldom clear and unambiguous. Caddy, et al (1976a, 1976b), however, claimed that explanations for alcoholism can be conceptually clustered into the three general categories of physical disease, underlying psychological illness, and learned patterns of behaviour. To these broad concepts, Brower, et al (1989) and Meyer and Babor (1989) have added the understanding of alcoholism as a social career as well as a number of integrative models. Brower, et al (1989) also brought the moral model up to date. However, the debate on conceptual issues has been intense in recent years. Following Lindström (1992) five conceptions of alcoholism are briefly reviewed: the moral model; the disease model; the symptomatic model; the learning model; and the social model.

(1) The Moral Model

In the initial stage of treatment interventions, alcoholism was regarded as a sin or a vice. Temperance was propagated primarily from a spiritual point of view. Characteristic of the moral model was its view of the alcoholic as an individual with a weak or a bad character who had made an unfortunate personal decision to drink excessively.

Alcoholics anonymous (AA) and other twelve-step treatment programmes combine elements of both the moral and the disease model. Although these programmes describe themselves as spiritual programmes, Brower et al (1989) rightly consider the spiritual model to be a variant of the moral model. AA treatment aims to help the alcoholic adopt a more 'complementary' view of his relationship to others and to the universe of God.

(2) The Disease Model

Among the earliest advocates of alcoholism as a disease were Thomas Trotter (1804) and Benjamin Rush (1785). However, it was not until after the Second World War that the public and legislators began to conceive of habitual drinking as a disease. Impetus was provided by Alcoholics Anonymous (AA) (eg, Alcoholics Anonymous, 1939) and the view of alcoholism as a disease has been a dominant American view since the 1960's, after Jellinek (1960) completed his famous formulation 'The Disease Concept of Alcoholism'. Although his theory was presented as a working hypothesis, this preliminary
thesis became for many an established truth (Lindström, 1992). The intervention implications of this model are relatively straightforward. Persons with the alcoholism disease must be identified, informed of their condition, brought to accept their diagnosis and persuaded to remain abstinent for the rest of their lives.

(3) Symptomatic Model

Early in the twentieth century the psychiatric literature generally considered alcoholism to be symptomatic of another primary mental disorder (Bowman & Jellinek, 1941) or abnormality of the personality. In the mid-twentieth century psychoanalysts proposed a variety of hypotheses regarding the causes of alcohol problems and up until 1980 the American Psychiatric Association classified alcoholism and drug addiction as subtypes of sociopathic personality disorder.

The logical treatment intervention within the symptomatic model is psychotherapy to resolve basic underlying conflicts and bring the individual to more mature levels of functioning.

(4) The Learning Model

This model differs from the disease and symptomatic models in a number of respects. It assumes that both deviant and normal behaviour are learned and that the events influencing this process can be identified, measured and altered. During the latter half of the twentieth century principles of behaviour expanded beyond basic conditioning processes to yield more complex learning models. Like the conditioning models these social learning models focused on interactions between the individual and the environment in shaping patterns of alcohol use. They also emphasize the importance of coping skills and interventions focused on altering the client's relationship to his or her environment and in the tuition of new skills. Recent models of 'Relapse Prevention' stress the importance of cognitive processes in evoking or averting relapse. Most recently cognitive therapies have been applied to cope with craving and urges, manage concomitant mood problems, alter positive expectancies and modify beliefs that promote problematic use (Beck, Wright, Newman, & Liese 1993).

(5) The Social Model

Proponents of the social model emphasize relations 'between' individuals in the social
context where problem drinking develops and is maintained. According to this view, successful rehabilitation must address the environmental, cultural, social, peer, or family matrix of drinking (Beigal and Ghetner, 1977). Examples of interventions within this model range from treatment of the entire family system (e.g., Steiner, 1971) to a "community reinforcement approach" (Azrin, 1976). A yet wider level intervention may occur in terms of social policy, price and distribution controls.

All the preceding models emphasize one of the agent (i.e., alcohol), host factors, or environmental factors, often to the exclusion of the other two. A temperance model points to the destructive power of the agent itself, i.e., alcohol. Moral and symptomatic models place strong emphasis on host factors. Emphasis on the environment can be found in the learning and social models. There is a clear relationship between models and treatment strategies. Yet treatment has often been guided by a single model operating as if it were the only complete or accurate understanding of alcohol problems and their etiology.

By the mid 1970's there had been a range of different approaches to treatment of alcoholism and to the setting in which it was conducted, whether in a hospital or community setting. The 'medicalisation' of alcoholism via the disease model had been effective in furthering the establishment of treatment facilities, in making alcoholism a morally acceptable condition and in raising funds for research. However, the research by the Sobells (Sobell & Sobell, 1973) into the usefulness of controlled drinking for some problem drinkers had challenged the perceived wisdom that an abstinence goal was necessary for all.

Further, the term 'alcoholism' was in the process of being abandoned as a diagnostic term, to be replaced by the term 'alcohol dependence syndrome' (WHO, 1977). There was a move toward dimensional concepts such as abuse (problems) and dependence which were seen as lying along a behavioural continuum, varying quantitatively (in severity), but not qualitatively from normality (Institute of Medicine, 1990). In the mid-1970's Pattison, Sobell & Sobell (1977) observed that treatment research was in the midst of a 'paradigmatic' change. It was becoming increasingly difficult to fit the growing body of data on problem drinking into traditional models and concepts. Most researchers and many clinicians were beginning to adopt a multivariate approach according to which alcohol dependence is maintained by a complex interaction of biological, psychological and social antecedents and consequences.
It was in this evolving treatment and research context that the alcohol treatment unit (The Thomas Prichard Addiction Unit) was formed at St Andrew's Hospital (Northampton) in 1977. The Hospital, formed in 1836 as the Northamptonshire County Lunatic Asylum, had treated the poet John Clare among others and at the introduction of the National Health Service had opted to remain independent. Since this time it has functioned as a not-for-profit independent charity administered by a Board of Governors and a Board of Directors. It is a fee paying Hospital whose patients are drawn from the National Health Service (90%) with a much smaller proportion (10%) being funded by health insurance or self-funded. Areas of specialisms include challenging behaviour, treatment of mentally ill offenders, developmental disabilities, brain injury rehabilitation, psychiatry of the elderly and, within its Acute Psychiatry Division, eating disorders and addictions.

At the time of its establishment (1977) the Thomas Prichard Addiction Unit was only the second such unit within the independent healthcare sector. There followed a rapid growth in commercial healthcare organisations and addiction beds were built rapidly in the 1980's to coincide with the boom in private health insurance. The unit, in the early 1980's, was in terms of Prochaska and DiClemente's stage of change model (Prochaska et al, 1992) at the 'precontemplation' stage. The unit was busy, optimism was high and there was little competition. By 1990 the unit had reached the 'contemplation' stage of change. There were by this time 30 independent addiction units and private health insurance companies were becoming wary about their coverage of addiction problems. Within the independent sector the 'Minnesota' model (Cook, 1988) was dominant and in the Health Service addiction treatment was increasingly community-based. The unit was therefore becoming increasingly isolated in the independent sector as it was institutionally based but did not run a 'Minnesota-type' programme.

The unit's treatment programme, although cognitive behavioural in philosophy, had been developed in a progressively ad hoc method with individual therapists developing their own style and treatment content, with a programme that was becoming increasingly less coherent. Staff retention had become a problem and an internal paper written in 1990 commented that only one of the six counsellors working on the unit had been in post for over one year.

These factors provided the impetus for the 'action' stage of change: it was necessary to developing a more coherent treatment approach that would be professionally acceptable and as effective as possible.
CHAPTER TWO:

PLANNING AND IMPLEMENTING CHANGE ON AN ADDICTION UNIT
This chapter describes the evolution of a treatment programme change on an addiction unit in terms of treatment content. It is also concerned with the management of change with reference to the work environment and factors relevant to the successful negotiation of altered practices within complex institutions.

The decision to alter (and hopefully) improve practice on the Thomas Prichard Addiction Unit at St Andrew's, followed logically from a decision to evaluate the effectiveness of the existing five-week residential programme. This took place in a research climate that questioned both the validity of longer over shorter stays and the need for residential care for undifferentiated problem drinkers (Miller & Hester, 1986). A second stage in the programme's evolution was systematic team evaluation of evidence based clinical practice within the treatment of problem drinkers, and the concurrent employment of an external consultant objectively to evaluate the treatment programme and direct changes in assessment, content and method of service delivery. A detailed description of this evolutionary process and of treatment change is contained in the following paper which is under editorial review:

THE EVOLUTION OF AN EVIDENCE-BASED PROGRAMME FOR PROBLEM DRINKING: TREATMENT COMPONENTS

C. G. Long*, T. Kidger
ST ANDREW'S HOSPITAL
NORTHAMPTON, NN1 5DA

and C. R. Hollin
CENTRE FOR APPLIED PSYCHOLOGY
UNIVERSITY OF LEICESTER

*Corresponding author

SHORT TITLE: EVIDENCE-BASED PROGRAMME FOR PROBLEM DRINKING
ABSTRACT

The development of an evidence-based treatment for problem drinking is described in detail alongside a clear description of the treatment programme. A model for effective programme development is outlined, along with issues relevant to the management of change within mental health settings. Methods to help ensure treatment integrity are discussed and the results of outcome evaluations summarised. The paper concludes with an examination of the implications for future service development in the field of problem drinking.
INTRODUCTION

A number of previous publications have documented the evaluation of treatment programme effectiveness on the addiction unit at St Andrew's Hospital, Northampton (Long, et al, 1998a, 1998b; Long, et al, 1995; Long, et al, in press). The presentation of these data on the clinical effectiveness and cost effectiveness of programme change and predictive outcome factors, has, of necessity, limited description of the treatment programme. The published research to date has, therefore, been characteristic of much published work in the alcoholism treatment field (Nathan & Skinstad, 1987; Morley, et al, 1996) in not giving full details of the treatment protocol. However, when outcome data are presented, the substance of the programme requires an elaboration for the benefit of the field. The focus of this paper is, therefore, to provide such information in support of previously published work. This paper describes the content of an addiction unit treatment programme through its evolution from a cognitive-behavioural 5-week residential programme, to an evidence-based 2-week in- and day-patient programme. The factors necessary to maintain integrity and vitality within such a treatment setting will also be considered.

Pre-Change Programme

Throughout the 1980's, the alcoholism treatments most widely available in the British Independent Healthcare sector and in North America were remarkably similar to those used several decades earlier (Cook, 1988; Fingarette, 1988; Peele, 1990). These treatments either lacked research support or were contraindicated by their research evidence (Fingarette, 1988). The treatment programme which is the subject of this article, flew against two trends of the time: the trend in the independent treatment of addiction sector towards a belief-based Minnesota model treatment, which employed 12 step treatments based on the alcoholics anonymous literature (Nowinski, et al, 1992); and the trend towards community based treatments. As a cognitive-behavioural treatment programme, influenced by Edwards' (1986) work on the alcohol dependence syndrome, Marlatt’s work on relapse prevention (Marlatt & Gordon 1985), Litman et al's (1979) work on coping skills, and Prochaska and DiClemente’s (1986) model of stages of change, it used a multidisciplinary team of professionally trained staff. The original programme contained some research-based sessions such as those incorporating the use of low alcohol drinks (Long & Cohen, 1989), but emphasised residential treatment and was in practice a hybrid of therapeutic influences and styles. Specifically, the original programme tended towards a confrontational didactic style that used the
"drinkalogs" that are characteristic of AA, and gave high profile to recreational counselling and adopting alternative life-styles. The treatment programme at St Andrew's Hospital had evolved in a relatively random manner, resembling a house with numerous extensions rather than a rounded coherent purpose-built facility. This state of affairs reflected the situation in the UK that had developed following the recommendations in 1962 for the establishment of alcoholism treatment units (ATUs) within the NHS (Ministry of Health, 1962). These ATU treatment facilities were subsequently scattered haphazardly throughout the country's psychiatric hospitals.

The need for a "broad-based" type of service expressed by the Advisory Committee on Alcoholism (DHSS Advisory Committee on Alcoholism, 1978), led to a series of studies by Ettorre (1984; 1988) of treatment activities within the developing ATUs. A survey of thirty ATUs between 1978 and 1982 (Ettorre, 1984) found that for in-patients the most used treatment procedure was "group psychotherapy", followed by counselling, occupational therapy, and relaxation sessions. Physical exercises, social skills or assertion training or individual psychotherapy were rarely or never used in the majority of units. A low uptake of after-care options was noted, although there were continued links with AA. A follow-up of ATUs in 1984 to 1985 found that although the average length of stay had decreased over the previous 10 years, the average length of in-patient stay was 5 weeks (Ettorre, 1988).

In keeping with the national picture, the St Andrew's Treatment Programme, until 1991, included the following diverse elements: (a) Educational videos on drinking sensibly, exercise use, stress and recreational counselling; (b) Didactic lectures on blood results, alternatives to disease models/cognitive-behavioural approaches of addiction, alcohol dependence syndrome, time management, aversive imagery, low alcohol drinks, resolution and motivation; (c) Individual counselling; (d) Physical education/sport; (e) Cognitive-behavioural group therapy focused on handling negative emotions, problem-solving, interpersonal skills training, changing life-style and relapse prevention; (f) Group sessions aimed at each individual's appraisal of their drinking problem and adopting an historical perspective (a "drinkalog"); (g) Family group adopting the principles of Alcoholics Anonymous; (h) Interactive group sessions on low alcohol drinks; (i) Open-ended group follow-up sessions.

The St Andrew's programme also encouraged patients to attend the AA sessions held on two evenings per week within the hospital grounds, and made use of carefully selected volunteers to help with certain group sessions. Thus, at that time the unit was similar to
the national picture in terms of offering a programme based on a mixture of evidence-based and unproven strategies for treating alcoholics. In this sense, the programme represents a partially "informed eclecticism" (Miller & Hester, 1995). The reviews of alcohol treatment outcome studies (eg Miller & Hester, 1986) concluded that there were a number of promising treatment approaches supported by outcome research, and that the practice at the time reflected little of this knowledge, choosing to focus on strategies for which scientific evidence was lacking. This discrepancy between evidence-based treatment approaches and practise has often been highlighted (Sobell, 1996; Long & Hollin, 1998). Indeed, as Miller et al (1995) note "Just two decades ago virtually anyone could claim to be an alcohol/drugs specialist and provide whatever form of counselling he or she thought appropriate. Ensuing years have seen increasing professionalisation of this field (and) a rapid expansion of new knowledge on the relative efficacy of different alcohol treatment approaches" (p.13).

It was in the context of a perceived drift in practice, problems of staff retention, the fact that patients stayed for less than the recommended 5-week programme (an average of 19 out of a recommended 35 days), and increased emphasis on brief interventions such as the "Drinkers Check-Up" (Miller & Sovereign, 1989), that a major review of treatment content and delivery was undertaken at St Andrew's Hospital. This decision, prompted by the Unit Director T. Kidger, coincided with the development of the MATCH evaluation project in the USA (Project Match Research Group, 1997).

A Model for Effective Treatment Programme Development

The model adopted for effective treatment programme development is discussed in Hollin, Epps, and Kendrick (1995). It views the process of development within the scientist-practitioner framework (Long & Hollin, 1997), and incorporates the implementation of the six principles that Reppucci (1973) identified as necessary to overcome organisational barriers to treatment integrity: (1) A guiding philosophy that is clearly understood by all members of the treatment team; (2) Organisational structure that facilitates communication and accountability; (3) Involvement of all staff in decision making; (4) Using all team member skills to maximum effect; (5) Maintaining community-orientation and community involvement; (6) Setting reasonable time constraints in developing and tuning programmes.

As Hollin, et al (1995) point out, Reppucci's (1973) first point suggests the need for staff development training within a clear organisational philosophy and structure. The second,
third and fourth points are concerned with the structure in which treatment takes place, while the fifth and sixth deal with the monitoring and functioning of that structure. This model is presented below (see Fig. 1).

In this model, research findings are used to shape practice and to help in the formation and revision of the aims and philosophy underpinning the programme: these processes influence staff training which, along with continued evaluation, is essential to ensuring treatment integrity. An important area here is the need to go beyond manualised treatments to ensure an understanding by treatment staff of the theory that informs the treatment programme. Lack of awareness of the principles that underline behavioural change programmes has been related to programme failure (Emerson & Emerson, 1987). The most effective programmes are those with high treatment integrity, delivered by trained practitioners, and in which the programme planners are involved in all the operational phases of the programme (Lipsey, 1992). Research evaluation covers the three dimensions of system (Long, et al, 1995), process (Long, et al, in press), and outcome (Long, et al, 1998a).

Implementing Change

At St Andrew's Hospital a phased programme of treatment evaluation was conceived as follows: (a) Follow-up of the effectiveness of the current programme; (b) External review of treatment and subsequent revision; (c) Introduction of procedures to ensure treatment integrity; (d) Comparative study of outcomes for the original and the revised programme.

The review and evaluation of the treatment were driven by the aims of avoiding therapist bias and allegiance effects (Kendall, 1988), and ensuring external objective scrutiny (Peele, 1989). These aims were achieved by the use of independent experts to review and advise on treatment programme change and to oversee the treatment evaluation of the project. The external treatment advisor "sat in" on the treatment programme and interviewed staff and patients over the course of six working days which followed an
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extensive written briefing on the unit's current programme. Observations and recommendations from the advisor led to the changes detailed in Table 1.

Revised Programme

The following research-based principles guided the development of the revised programme: (a) That in-patient admission would be used only for detoxification or for cases where issues of social instability or psychiatric comorbidity made day-patient treatment problematic (McLellan et al, 1996); (b) A brief intensive day-patient programme of 14 days duration would replace previously routine residential care; (c) There would be a continued emphasis on goal choice, i.e., patients wishing to drink in a controlled way would be supported in this (Sobell, Bogardis, Leo et al 1992); (d) That a core group therapy programme would be supplemented on a matched/as needs basis by group and individual therapy on specific topics.

Staffing remained unchanged with the unit employing a full-time psychiatrist (Unit Director), supported by a part-time Consultant Psychologist and four full-time counsellors (three nurses and one occupational therapist).

Assessment

Patients who are referred for screening assessment are seen by the Unit Director or by counsellors with appropriate medical liaison for an interview of approximately two hours duration (see Figure 2). During this assessment use is made of a modified form of the Comprehensive Drinkers profile (CDP; Miller & Marlatt 1984) and the Screening of Alcohol Dependence Questionnaire (SADQ; Stockwell et al 1983). The CDP is a highly structured individual interview requiring one to two hours for completion by patient and clinician jointly. The CDP invites the patient to participate and co-operate in his or her diagnosis, self-understanding and treatment selection. The interview is organised systematically to collect objective and subjective information classified as demographic (eg residential arrangements, occupational and education histories), drinking (eg consumption levels and patterns, alcohol-related life problems, drinking settings,
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associated behaviours) and motivational (eg reasons for drinking, effects of drinking, associated life problems). The CDP is an averaging or grid method of measuring alcohol intake, which has been found to be comparable to other retrospective measures (eg timeline follow-back) and to guard against underestimates of consumption (Grant et al 1995). The SADQ was developed by Stockwell et al (1983) as a "pure" measure of the degree to which help-seeking problem drinkers were experiencing the syndrome of alcohol dependence. It is a 20-item self-administered scale, which refers to the individual's last month of heavy drinking. The range of the total score is 0-60 with a cut-off of 31 for higher or severe dependence. SADQ scores have low but significant correlations with indicators of withdrawal severity and help predict the likelihood of a controlled drinking or abstinence outcome.

Patient's relatives/significant others are also interviewed and relevant medical notes obtained. A minimal data set is gathered on each patient involving the assessment of level of dependency (using the SADQ, Stockwell et al, 1983) blood test data, and demographic, drinking and motivational information from the CDP (Miller & Marlatt, 1984). Part of the comprehensive treatment assessment package includes breath alcohol concentration, physical examination, pathological examination of blood and urine drug screen (daily supervised urine screen where appropriate). In addition, the following are arranged if required: neuropsychological screening, special investigations (eg, CT scan, liver biopsy) and blood test for HIV and hepatitis status, plus pre- and post-test counselling. Where possible assessment is conducted on an out-patient basis with subsequent assignment to in-, day- or out-patient treatment. In- and day-patients enter all or selected parts of an intensive 5-day, 2-week group treatment programme that is supplemented by individual counselling, involving 1-2 sessions per week. The criteria employed to decide on the setting of treatment are summarised in Figures 2 and 3. Patients who are severely dependent on alcohol (SADQ score greater than 31) and currently showing severe withdrawal symptoms, are also routinely admitted for detoxification and transferred to day- or out-patient care on completion. The decision to admit patients who are not severely dependent is determined by comorbidity and social problems/lack of support in accord with both clinical experience and research findings (Gottheil et al 1992). Only two criteria are used to assess suitability for in-patient treatment, the ability to communicate in English and being over 16 years of age.

__________________________________________________________

INSERT FIGURE 2 and 3 ABOUT HERE

__________________________________________________________
Treatment

Treatment is monitored at two ward rounds per week, which also serve to communicate details of individual case histories. Weekend leave is prescribed following detoxification for in-patients to augment the process of identifying high risk (relapse) situations and factors, to begin the rebuilding of relationships, and to attend to practical affairs of daily living. The process of treatment is informed by the care programme approach and discharge may be to further treatment on an out-patient basis, or rehabilitation. The typical length of stay as an in-patient is 14 days.

In-patients see both their Consultant Psychiatrist and their keyworker for individual sessions twice per week. Self-monitoring of desire to drink, mood state and cognitions is encouraged during time away from the programme. A motivational enhancement counselling style (Miller & Rollnick, 1991) is employed throughout individual sessions. The day and in-patient programme runs 5 days per week, 9.30am – 12.30pm and 2.00pm – 5.00pm. Treatment core sessions are derived from the published research on coping skills training (Monti, et al, 1989; Litman, et al, 1987) and relapse prevention (Annis & Davis, 1989; Marlatt & Gordon, 1985).

The core treatment group sessions are described below:

(1) **Functional Analysis**

A:B:C (Antecedent: Behaviour: Consequences), analysis is used to identify cues and triggers to drinking. Ways of avoiding, reducing or scrambling drinking cues are developed and examination of the beliefs and expectations about drug use precedes the identification of alternative routes to achieving desired effects.

(2) **Self-Reward**

This strategy highlights the importance of rewarding difficult behaviour changes, examines types of reward, and looks at positive behavioural alternatives to alcohol use.
(3) **Changing Lifestyle**

This session examines the balance between 'wants' and 'shoulds' (Mariatt & Gordon, 1985). Ways of fulfilling lifestyle needs are examined along with the positive restructuring of time formerly spent drinking (expanding recreational pursuits) and time management.

(4) **Relapse Prevention**

Patients define their own profile of high risk situations and work on individual cognitive-behavioural strategies to deal with stages of the relapse process. Clients are taught to identify the kinds of seemingly irrelevant decisions that may culminate in high risk situations. A further focus here is on dealing with a lapse.

(5) **Coping Skills**

This input gives an overview of the contribution of coping skills to relapse prevention in the maintenance stage of change, with emphasis on cognitive (motivational) strategies. Central to this session is developing an awareness of attitudes and thought processes that decrease vigilance. A decisional matrix (Mariatt & Gordon, 1985) is used as a way of helping clients to organise and prioritise their reasons for change. Ways of dealing with urges or cravings to drink are examined.

(6) **Dealing With Negative Emotional States**

Sessions focus on the link between stress/anxiety/depression and alcohol and drug use; behavioural, cognitive and physiological ways of coping are taught.

(7) **Progressive Muscle Relaxation**

In- and day-patients receive five relaxation training sessions per week.

(8) **Assertiveness Training**
Skills practised within this session include "saying No", handling criticism, and drink refusal skills within high risk social situations: role-play/behavioural rehearsal is used throughout.

(9) **Problem Solving**

The problem solving model (D'Zurilla & Goldfried, 1971) is described and applied to an addiction relevant problem, for example, rebuilding trust with a significant other.

A personalised (matched) programme involves the addition to the core therapy programme of the following: (a) Behavioural marital therapy (if indicated by screening); (b) Antabuse with compliance training; (c) Covert sensitisation (for those choosing an abstinence goal); (d) Bibliotherapy and video therapy resources are available to patients with benzodiazepine dependence, abnormal blood tests (personalised by the results of individual blood tests), sleep disturbance, those contemplating the use of low alcohol drinks, significant physical damage, time management problems, and recreational needs.

**Aftercare**

A variety of aftercare options are explored with patients that include residential rehabilitation, attendance at Alcoholics Anonymous, individual counselling, conjoint marital therapy, and telephone support.

**Ensuring Treatment Integrity**

The importance of treatment integrity has been highlighted in a number of recent publications (Hollin, 1995). For example, meta-analysis in the forensic field, has shown that the most successful treatment programmes are those with the highest integrity (Lipsey, 1992). Similarly, findings from the Project Match Researchers (Project Match, 1997) have shown that factors such as close adherence to a manualised treatment programme and other treatment delivery attributes, can ensure a high level of successful outcome for problem drinkers despite different treatment types and philosophies. At St Andrew's Hospital a number of strategies were employed in an attempt to ensure treatment integrity (Long et al, 1995). These strategies include:
Evidence-Based Programme For Problem Drinking
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(1) Careful monitoring of the work climate to ensure that a positive treatment change for patients was not offset by a decrease in the quality of the work environment for staff. Previous work has demonstrated the relationship between a positive work climate and the effectiveness of treatment programmes with a formal cognitive-behavioural ideology placed in a research setting (Cherniss & Krantz, 1983);

(2) Continual staff education/training such that in the six months before programme change, weekly staff education sessions were devoted largely to presentations and discussions of research and treatment papers (based largely on the work of W R Miller at the University of New Mexico), that would inform the programme revision. This included work that assessed the evidence of the effectiveness of particular treatment strategies (eg, Miller & Hester, 1986; Institute of Medicine, 1990; Holder, et al, 1991), motivational interviewing (Miller & Rollnick, 1991), matching patient to treatment (eg, Litt et al, 1992; DiClemente, et al, 1991), brief interventions (eg Miller & Sovereign, 1989), and treatment outcome (eg, Moos, et al, 1990; Miller, et al, 1992). In addition to attendance at external workshops, current 'in-house' training is conducted on a weekly basis with six staff members rotating presentations that group around the following themes: (i) 'rehearsal' of treatment programme sessions to ensure fidelity to the manual and to ensure performance feedback (Fleming & Sulzer-Azaroff, 1989); (ii) discussion of findings and implications of practice-based research papers; (iii) practical skills: presentations covering unit procedures, history taking and case formulation, motivational interviewing, use of relevant equipment including 'breathalyser', relevance and use of medication, e.g., acamprosate.

(3) Involvement of all staff in the planning and implementation of a manualised programme of group therapy. An outline manual developed by the first two authors was elaborated by unit counsellors to ensure applicability within the specific treatment context.

(4) The practise of internal audit and review of group sessions to highlight "drift" from an agreed practise. All treatment sessions were 'rehearsed' by the staff group and peer reviewed to ensure a learning through doing/skills practise focus and an effective presentation method. Methods include 'sitting in' on sessions, or team evaluation of audio or videotaped sessions. A rolling programme of peer
review ensured that all staff could deliver all elements of the group therapy programme in a consistent manner.

(5) External audit by an independent "expert" to confirm continued adherence to the prescribed treatment programme.

Evaluation

At the time of the programme review in 1991, over 100 consecutive admissions with an ICD-10 diagnosis of Alcohol Dependence Syndrome had entered the comparative outcome study (for results see Long, et al, 1998a). Evaluations of aspects of the pre-change programme had involved an assessment of the usefulness of low alcohol drinks as alcohol substitutes for dependent clients (Long & Cohen, 1989), and staff and patient prediction of success (Long, et al, 1997). Further evaluation of the St Andrew's programme included measures of the ward environment as perceived by staff (Long et al, 1995), patient satisfaction, and a number of within-treatment measures that included the therapeutic alliance, and broader measures of patient treatment evaluation (see Long, et al, in press).

Data gathering to assess outcome spanned a 4-year period. In a sequential study design consecutive referrals with an ICD-10 (World Health Organisation, 1992) diagnosis of alcohol dependence syndrome were evaluated at intake and at 6-and 12-months follow-up (Long, et al, 1998). One hundred and twelve patients underwent a 5-week residential programme, while a subsequent 100 patients followed the revised 2-week in- and day-patient programme. Patients from the unit before and after the programme changes were compared in order to assess the effect of changing programme delivery. Patients were classified into abstinent, non-problem drinker, drinking but improved, and unimproved groups (Heather & Tebbutt, 1989) using self-report, collateral report and blood test data. Measures of drinking intensity, percentage of days abstinent, time in treatment, use of aftercare and treatment costs were also taken.

Of all patients in the evaluation study, 55.6 per cent were classified as abstinent or non-problem drinker at one year follow-up. There was no difference in treatment outcome between the original and programmes. However, there were significant reductions in cost (33%), hours of treatment (38%) and length of stay for the revised programme. Although the conclusions of the study must be viewed as tentative pending a randomised controlled trial, the evidence endorsed the usefulness of the revised programme on the

What Next?

The completion of a formal evaluation of a treatment programme, and the assimilation of its findings and implications by treatment staff, must, of necessity, signal a revision of that programme and its re-evaluation in the light of experience and further treatment related research. The findings of outcome studies that have adopted best practice in terms of therapy and evaluation, continue to leave a significant proportion of individuals unchanged and unhelped. "Programme drift" (Johnson, 1981) or the gradual shift over time with the aim of a programme, and the subtle incorporation of other treatment elements, is a further reason for review. The duration of a treatment study typically covers a period of sufficient time to see the production of significant further research findings, or the revision of “established” findings. Research findings with practical implications that have come into more widespread usage during the period of the St Andrew's evaluation, include developments in marital therapy for alcoholic families (O'Farrell, 1995) and the use of craving suppressant medication, such as naltrexone and acamprosate (Check, 1996). Of perhaps most significance has been the completion of the largest scale psychotherapy trial for problem drinkers to date (Project MATCH, 1997). The finding in Project MATCH that treatments with very different methods and philosophies were very effective with problem drinkers if delivered in a highly structured way to prevent sample attrition, has brought to the forefront issues of treatment integrity and the value of non-specific factors in therapy (Frank, 1973). The possible implication of this development is that in a treatment setting where technical competence in the administration of manualised treatment has been established, there needs to be a thorough and systematic attempt to maximise the effectiveness of those variables within a treatment situation that were in past decades seen as "superfluous" artefacts (Kazdin, 1979). This will inevitably mean a focus on issues that relate to the therapeutic relationships or working alliance between therapist and clients in addiction settings where contact with therapists are, of necessity, brief and time limited. A further significant challenge in the real world of clinical work is the development of optimal treatments for those alcohol dependent patients who present with comorbid disorders that adversely affect treatment outcome (Kranzler, et al, 1996).

A number of key principles underpin the next phase of the unit's evolution. The first of these is the ongoing systematic assessment of efficacy that includes management,
teaching, purchasing and policy making. This will include the undertaking of a 5-year follow-up study of the current cohort to determine longer term patterns of recovery.

Recent work suggests that duration of aftercare may be more important than duration of time on a treatment programme (Trent, 1988), and particular types of aftercare are effective despite their mismatch with the model/philosophy of the treatment programme (Longabaugh et al, 1998). These findings make even more important a comparison of the relative efficiency of different aftercare options (eg AA attendance versus other).

A further focus is the continued monitoring of the staff work environment and of consumer and purchasers' perspectives on the value of treatment. The feed-back of these results for the benefit of staff and patients is likewise essential.

Finally, there must be ongoing attempts to provide an increasingly wide variety of treatment alternatives in order to decide on the minimally intrusive therapeutic intervention required to effect and maintain positive change in a patient. On a broader front research by Finney et al (1996) outlines the paradigm for the next generation of studies: identification of active treatment ingredients that mediate the relationship of treatment setting to outcome; and identification of the patient environments and patient types that are most likely to benefit from these active ingredients. Such a theoretically driven research agenda will have practical value in assisting treatment programmes to provide more effective treatment.
References:


1. Include only elements of proven effectiveness with Problem Drinkers (cf Holder et al, 1991).

2. Focus on skills training/practise rather than description.

3. Monitor patient's practise of skills such as relaxation.

4. Discontinue physical exercise sessions, history giving in groups, and educational video/lectures.


6. Aftercare to be structured, intensified and time limited on an individual or group basis.
Fig. 1 – MODEL FOR EFFECTIVE TREATMENT PROGRAMME DEVELOPMENT

PRACTICE
Aims and Philosophy

PROGRAMME DEVELOPMENT

MANAGEMENT → PROGRAMME IMPLEMENTATION

STAFF TRAINING

RESEARCH & EVALUATION
(Process & Outcome)
Fig 2: Assessment of Alcohol Dependant Clients
(Thomas Prichard Addiction Unit, St Andrew's Hospital)

Initial Assessment:

START HERE
Collect information then phone GP

Are you the patient's doctor?

YES

Is the patient in crisis?

YES
Admit for assessment

NO

Is the patient intoxicated?

YES

Able to attend sober

NO

How long since last drank Alcohol?

Less than 7 days

Currently showing withdrawal symptoms?

YES

Severity of withdrawal Symptoms

Mild
Severe
Moderate

NO

Over 7 days

Less than 7 days

Attend as out-patient

Admit for detox

Home detox

Collect information then phone GP

Is there a physical illness?

Ask duty Consultant

Is there another psychiatric diagnosis?

Ask GP if home detox contraindicated

Don't know

Mild

Severe

Moderate
Fig 3: Assessment of Alcohol Dependant Clients
(Thomas Prichard Addiction Unit, St Andrew's Hospital)

Phase Two Assessment:

Phase Two Assessment

Severity of Dependence?

Mild

Moderate

Severe

Admit to in-patient Programme

Yes

Refer to psychiatrist

Is there significant other psychiatric pathology?

No

Has patient received significant previous counselling?

No

Arrange out-patient counselling

Yes

Is history over 3 years?

No

Is home environment stable?

Yes

Admit to day-patient programme

No

Has patient received significant previous counselling?

Yes

Is home environment stable?

No

Is there significant other physical pathology?

Yes

No
PREPARING STAFF FOR CHANGE

The significant changes in the therapeutic programme previously described and in the manner in which treatment was delivered, initially sparked concern about the quality of the staff environment and its influences on morale and the quality of patient care. As well as providing a treatment setting for patients, an intervention programme provides a work environment for healthcare staff. In an effective treatment setting the work climate should satisfy the staff therein. While there had been at the time of the initiation of the current study considerable research on the staff work environment in intensive care and medical units, relatively little was known about the work place in psychiatric and substance abuse treatment programmes. According to Allen (1993) substance abuse treatment staff are opposed to work-related conditions that may impede care giving, such as conflict with other staff members, lack of direction and clarity, and high work demands.

Responses from over 1500 healthcare employees to a measure of organizational climate, the Work Environment Scale (WES), highlighted the particular problems of healthcare facilities (Moos, 1986). In comparison to workers in other settings, healthcare staff report less job involvement, and less support from co-workers and supervisors. In addition, healthcare settings are lacking in autonomy and clarity, are less comfortable physically and have more work demands and supervisor control. As Moos (1988) points out, these conditions probably reflect the stressful and emotionally difficult nature of healthcare, and problems associated with large highly structured organizations. Variations in work climate affect the morale and performance of healthcare employees. Thus staff who see their work as independent and challenging, and as characterised by clear and consistent policies and good personal relationships, tend to be more satisfied and to perform better. In contrast, staff morale is lower in highly demanding work settings that lack cohesion and autonomy (Moos & Schaefer, 1987).

An important application of this work is the use of information about the work climate to monitor the process of organizational change (eg, Griffin, 1989, Maloney et al, 1991). In a study comparable to the current investigation (Eriksen, 1987), a short-term alcoholism in-patient treatment unit was restructured into patient and staff teams, while a new programme was developed based on behavioural and social learning principles. Patients and staff reported, via the Ward Atmosphere Scale (WAS), increased involvement, autonomy, practical orientation, organization and clarity. Jackson's (1983) study of a hospital out-patient unit found that the increased participation in decision-making among nursing and clerical employees lessened role strains and enhanced valued individual and
organizational outcomes. Participation had a positive impact on perceived influence (as measured in part by WES autonomy) and job satisfaction, and helped reduce role-conflict ambiguity. However, there was no positive effect on work support (as measured in part by WES peer cohesion and supervisor support). This latter point reminds us that organizational change can have both positive, neutral and negative impacts on the work environment.

It was important therefore to ensure that innovations in treatment did not reduce the quality of the working environment for stable staff teams who already showed high levels of satisfaction with their work. The goal for the St Andrew's organization was to maintain a positive work environment following a research-driven change in healthcare delivery.

In addition to attempting to fashion a state-of-the-art treatment programme for problem drinkers, particular attention was given to the negotiation and management of change. The major changes in the working practices of staff were delivering a new core treatment programme and preparing patients for discharge more quickly. This modified treatment programme (which repeated itself on a 2-week basis) had some potential for decreasing the satisfaction of treatment staff by virtue of a shorter, and therefore less intense, relationship with those they were counselling, and by virtue of the repetitiveness of the programme content. The vital importance of working to aid the organization's integration and acceptance of the new programme was demonstrated by the extensive work of Fairweather et al (1974). Accordingly, many of the principles for creating change in mental health organizations, identified by Fairweather et al (1974) (eg, action orientated intervention; participation; group action and implementation; and simple innovation) were adhered to.

A study was undertaken to assess the impact of introducing a streamlined addiction unit treatment programme on staff responsible for programme delivery. This was achieved by measuring the work environment in the 5-week in-patient regime (Programme A) and in the 2-week in- and day-patient regime (Programme B). The study was published in the Journal of Advanced Nursing (Long et al, 1995) and is summarised below.

Three versions of the Work Environment Scale (WES) (forms R, I and E) were used to provide descriptions of the social climate on the unit. WES form R assesses perceptions of the work environment at the time of form completion; form I identifies a hypothetical 'ideal' environment; and form E indicates expectations of how a future working environment will be.
The value of the measurement of the social climate of a treatment setting, and the constructive feedback of results to institute positive change, has been demonstrated frequently in settings such as burn units (eg Koran et al, 1983), psychiatric day hospitals (Milne, 1986), psychiatric wards (James et al, 1990) and alcoholism treatment units (Verinis, 1983). However, the ongoing measure of a favourable social climate is equally important in order to ensure its maintenance over time in response to staff and organizational changes.

The study clearly demonstrated that a change that is congruent with staff expectations, and which involves all treatment staff, can maintain a positive working environment. Just as patients perform best in those settings where their expectations about the treatment environment are accurate (eg Brown & Miller, 1993), the same is probably true of staff. The importance of this position is underlined by those studies that show a relationship between work climate and job morale and performance (Moos & Schaefer, 1987) and between irregular patient (self-discharges from an alcoholism treatment unit and staff absence from work (Bowen & Tremlow, 1978).

In addition to meeting staff expectations, the most likely explanation for the maintenance of a positive work climate in this study includes continued identification with a formal cognitive behavioural ideology in a programme anchored to research findings and placed in a research setting (Chemiss & Krantz, 1983). Such a formal belief system both lessens the ambiguity of human service work and provide a rationale for difficult decisions.

The findings of the study confirm those of the one previous comparable study of an alcoholism unit, which showed improved social climate ratings by staff after it was restructured according to behavioural and social learning principles (Eriksen, 1987). Indeed, the general effect of new treatment programmes based on social learning principles is to enhance involvement autonomy and practical orientation, although these programmes may, as in our own study, decrease temporarily programme clarity (Lacoursiere & Bradshaw, 1983). Recent research has highlighted further the importance of the staff's perception of the work environment in treatment settings. Moos and Moos (1998) who reported on the characteristics of the work environment in fifteen substance abuse programmes, found variations between them to be associated with staff beliefs and treatment orientation. Further, the workplace and staff beliefs were associated with a more direct treatment environment, patient involvement in the programme and better outcomes at discharge. It is clear therefore, that a positive work environment for staff
provides a favourable setting condition for successful treatment.

While much effort within the mental health area has been devoted to creating new treatment programmes, there has been less attention paid to the use of specific techniques that will facilitate their adoption (Fairweather et al, 1974). This study emphasizes the importance of actively preparing staff for change, involving them intimately in the process, and the importance of employing an outside change agent. In doing this, it highlights the diffusion of treatment innovation as a process that goes through several stages (knowledge – persuasion – decision – confirmation), with different channels of communication being more or less important at different stages (Fairweather et al, 1974). Early preparation for change, and a small stable staff team where there were no major changes to norms and roles, helped to ensure that plans to minimise disruption were successful. A further example of the effectiveness of this preparation for change is arguably the finding that staff did not expect the new work environment to differ significantly from the pre-change programme.

When findings of the sort identified here occur, it is important to guard against complacency by regular monitoring of the unit's work environment. The insights such surveys of work climate provide may help anticipate problems and provide solutions to current organizational challenges (Moos & Schaefer, 1987). Research to date has provided only an initial understanding of healthcare milieus and their influence on staff and the quality of patient treatment. Future evaluations of the impact of healthcare jobs should aim to identify the precise aspects of work that are linked to varied staff and patient outcomes (Moos & Schaefer, 1987), so that work settings that benefit healthcare staff as well as their patients can be created.

Considerations such as the social context in which treatment occurs are a necessary backdrop to a broad based service evaluation that is concerned with treatment structure and process as well as outcome (Donabedian 1992). The detailed examination of treatment outcome for the two alcohol programmes described is preceded in Chapter 3 by a consideration of the factors (methodological and political), that are pertinent to a meaningful exploration of the effectiveness of therapy.
CHAPTER THREE:

MEASURING SUCCESS
The NHS's research and development strategy (Peckham, 1991; Department of Health, 1996) emphasizes "implementation" which concerns the establishment in routine practice of those clinical procedures or methods of care for which there is evidence of effectiveness or efficiency. The establishment of a revised, evidence-based alcohol treatment programme had followed this principle. The term 'development' within the NHS research and development strategy is intended to apply to the experimental introduction of alternative clinical procedures or methods of care, together with a simultaneous evaluation of their effectiveness or efficiency.

The central aim of the investigation into the two different treatment programmes was to look at the clinical outcomes achieved by clients in the two settings. There has always been a recognition that mental health services should be subjected to evaluation although this may more often be advocated than implemented (Speer & Newman, 1996). This problem was seen as particularly acute within the independent or "private" healthcare sector where within addiction services there has been a tendency to claim "success" without the ability to substantiate this (Booth, 1992).

A second problem had been the move within the addiction field from a situation where no data were required to substantiate outcome claims to one where the field came to expect success rates of 67%, 80% or even higher (Miller & Sanchez-Craig, 1996). These 'success rates' were often the product of evaluations that were not tied to rigidly to scientific standards. In view of these considerations it was deemed important to plan an outcome study that met minimal standards for scientific credibility, which would provide 'clinical feedback' and which would help in the process of decision making (Milne, 1987). The decision to pursue the path of empirical validation inevitably provokes a consideration of the factors involved in providing an approximate answer to this complex question.

The paper that follows explores this issue. It was published as follows:

How Do You Know if Your Treatment of Problem Drinking is Successful?

Clive G. Long* and Clive R. Hollin
1St. Andrew’s Hospital, Northampton, NN1 5DG, UK
2Centre for Applied Psychology, University of Leicester, Leicester, LE1 7RH, UK

The particular importance of examining the issue of the effectiveness of treatment for problem drinking is based on: (a) the history of a separation of science and practice in the alcohol field; (b) an era of increased accountability for the results of clinical practice. Consideration of the complexities involved in deciding whether treatment makes a difference is followed by an examination of the relative merits of empirical and non-empirical evaluative approaches. Barriers to using knowledge effectively (therapist and cultural) are identified along with the use of knowledge destruction tactics. It is concluded that the most realistic alternative is an empirical approach that uses a wide range of methodologies to bridge the scientist-practitioner divide. © 1998 John Wiley & Sons, Ltd.

WHY POSE THE QUESTION?

Contemporary clinical psychology clings to the scientist-practitioner model of practice (Long and Hollin, 1997). The essential problem facing the scientist-practitioner lies in teasing out the effects of treatment from the confounding effects of other factors influencing a client’s well-being. This classic research problem assumes a special significance in the alcoholism treatment field where ‘treatments’ are getting shorter, where more has to be learned of the natural course of the problem, and where valid evaluations depend, amongst other factors, on a lengthy follow-up in excess of 2 years (Nathan and Skinsted, 1987). Such follow-up periods make it more likely that subsequent therapeutic interventions and/or life events may have influenced the evolution of the patient’s final state. Yet paradoxically, the progressive diminishment of some therapeutic effects over time, both within and across treatments, stresses the importance of examining changes over a long time interval. Mash and Terdal (1980), while discussing the main difficulties associated with long-term assessment in behaviour therapy, highlight the discrepancy between the perceived importance of follow-up and the non-availability of meaningful information. More recently, Davies and Crombie (1995) suggested that measuring processes of change may make a more important contribution to evaluating quality than outcome data. They note in particular that a major weakness of outcome data is that they have to be interpreted and that this interpretation requires some form of comparative data which are not always to hand. Individual difference effects are bound to be large and attempts to adjust for these are not always successful. Davies and Crombie (1995) also cite evidence that even ‘hard’ outcome measures such as death rates are insensitive to ‘quite wide variations of quality of care’. Further, given that rigorous experimental designs are not always possible in health care settings, alcohol treatment research frequently has to make do with ‘quasi-experimental’ designs (Cook and Campbell, 1979), so that the effects of treatment have to be taken with caution.

Despite these problems and limitations, outcome research and the question of treatment effectiveness has assumed a heightened practical significance given the growing pressure for programme evaluation from funding sources, insurers, purchasers,
consumers and regulatory agencies (Miller and Sanchez-Craig, 1996). NHS facilities faced with financial constraints are increasingly required to show their ability to produce meaningful and cost-effective benefits (Ham, 1995; Harrison, 1995; Peckham, 1995). This thrust towards ‘evidence-based practice’ is clearly stated in a recent NHS executive document Promoting Clinical Effectiveness (PCE, 1996); namely that ‘We need to ensure that decisions about the provision and delivery of clinical services are driven increasingly by evidence of clinical and cost-effectiveness, coupled with systematic assessment of actual health outcomes’ (p. 7). A recent report in the national press also noted that some health authorities are only paying for clients to go to units with good success records, and not to those that have poorer outcomes with the same conditions and treatment regime (Mihill, 1995). In view of this pressure to provide outcome data, it is vital that clinicians attempt to provide the best possible answer to the question of treatment effectiveness. Our focus here is to apply this question of effectiveness to the treatment of problem drinking, and in doing so to focus on the scientific method as a means of developing a practical knowledge base.

Long and Hollin (1997) provided a critique of the scientist-practitioner model within clinical psychology, raising several issues: (i) whether controlled empirical investigations (the scientific method) were capable of evaluating the clinical effects of treatment; (ii) whether it was possible for clinicians to combine the roles of scientist and practitioner in a way advocated by proponents of evidence-based practice within the mental health field (Geddes and Harrison, 1997); (iii) whether psychological research was ‘applicable’ as well as applied; and (iv) whether research was misleading and irrelevant. In supporting the scientist-practitioner model, they noted the indirect as well as the direct benefits of empirical research in providing an objective basis for service and skill development as a means of developing theory and contributing to prediction (Vanderycken and Meermann, 1992). They concluded that among the many obstacles to applying science to practice a major factor was practitioner acceptance of adverse stereotypes of empirical research, and researcher attitudes that tended to justify and reinforce the isolation of the scientific community from the practitioner community. These issues, which are of broad relevance to clinical practice, seem particularly germane to evaluating the outcome of treatment for problem drinking.

WAYS OF ANSWERING THE QUESTION OF EFFECTIVENESS

An approximation to an accurate answer about alcoholism treatment effectiveness involves consideration of at least three interrelated issues: (i) deciding whether treatment makes a difference, or is effective because of non-specific elements common to all forms of therapy, or is a result of a natural healing process; (ii) deciding between competing methodologies, including empirical and non-empirical answers to the question; (iii) using knowledge gained appropriately and effectively.

Does Treatment Make a Difference?

It is perhaps easy for psychotherapists who think of themselves as the principal cause of remission in patients with alcohol problems to forget that treatment success is culturally defined and varies according to time. The main thesis of The Mental Health Industry: A Cultural Phenomena (Magaro et al., 1978) is that ‘evidence confirming the success of a treatment decreases with the length of time treatment is practised’ (p. 15). Tourney’s (1970) analysis of a number of psychiatric therapies confirmed that treatment seemed to have a characteristic life cycle: ‘Initial statistics often indicate results of 90% recovery or marked improvement, whereas subsequent studies find these figures reduced. … Often such therapeutic developments become more like a religious movement, … than a scientific development. Rejected techniques are often re-introduced in new guises with new names and new theoretic foundations. … Too often psychiatric treatment reflects some of the social and political philosophies of the day, rather than a sound medical orientation applying the scientific laws of cause and effect’ (Tourney, 1970, pp. 6–7).

Magaro et al. (1978) who investigated the scientific support for psychosocial therapies, from moral treatment milieu therapy and behaviour modification in American psychiatric care, found no convincing evidence of the universal effectiveness of therapies. They therefore interpret the preference for one treatment over another as a cultural phenomena, and advocate that treatment should be conceptualized as an interactional process where outcome is determined by a number of therapy, therapist, and patient variables.

To date, the assumptions on which alcoholism treatments have been based can be classified into four categories (Lindström, 1992): these are the technique hypothesis, the matching hypothesis, the
non-specific hypothesis, and the natural healing hypothesis. Lindström (1992) notes that it is only after hundreds of trial and errors guided by technique-centred assumptions, that research has taken an interest in the latter three categories.

Matching Hypothesis
The potential benefit of treatment matching include enhancement of treatment effectiveness, increases in cost effectiveness, and avoidance of therapeutic mismatches that could contribute to a lack of response to treatment or dropout from treatment. The empirical research to date (Longabaugh et al., 1994; Mattson et al., 1994; Project Match Research Group, 1997) indicates that matching is a promising but not yet fully realized strategy for increasing treatment effectiveness. Psychologists such as Mischel (1981) have pointed out that when clients are exposed to weak treatments, individual differences should exert a significant effect. The relevance of the matching hypothesis is, thus, inversely proportional to the potency of the treatment method. A similar line of reasoning can be followed regarding the non-specific hypothesis: when the weaker effect of treatment is compared with no or minimal treatment, the greater the likelihood that a number of treatment methods will achieve the same outcome (Lindström, 1992).

Non-Specific Hypothesis
An assumption that underlies the non-specific hypothesis of psychosocial treatment is that therapies do not differ in efficacy. Indeed, within the alcoholism field individually delivered psychosocial treatment embodying very different treatment philosophies appear to produce comparable outcomes (Hester and Miller, 1995), particularly when treatment integrity is assured and compliance enhancement procedures are used (Project Match Research Group, 1997). According to Frank (1973, 1982) all therapies are beneficial because they have common healing components which are shared by age-old procedures of psychological healing. These components are a ‘relationship’ and ‘setting’ that arises the patient’s expectations of help, a ‘rational’ for symptoms and therapy, and a ‘ritual’ in which patient and therapist participate. This view is essentially repeated in Torrey’s (1986) book *Witch-Doctors and Psychiatry*, in which he argues that the important ingredients of successful therapy are a shared world view, the personal qualities of the therapist, the expectations of the client, and an emerging sense of mastery. In his view, while psychiatrists and witch-doctors do remarkably similar things and produce beneficial results, there is very little science involved. In an early review of research on alcohol treatment outcome, Voegtlin and Lemere (1942) warned against an over-enthusiastic reception of any new apparently highly effective method that had not been subject to the test of time. Vaillant (1983) pointed to other examples of treatment that initially showed improved drinking behaviour in 50 to 85% of alcoholics 2 years after treatment: these treatments included emetine aversion conditioning (Shadel, 1944), Antabuse and group therapy at the Meninger Clinic (Wallerstein, 1956), attendance at Alcoholics Anonymous, coupled with the indigenous calypso singing on Trinidad (Besufrun, 1977), and behaviour therapy aimed at controlled drinking (Sobell and Sobell, 1976). Vaillant (1983) concluded that each programme maximized the power of those healing components which, according to Frank (1973), characterize successful therapy and applied the newest method of the decade. The question of why history has been so unkind to past methods of treating alcohol problems and why no superior treatment has emerged, most probably relates to the fact that alcoholism treatment is a culturally determined phenomenon (Vaillant, 1983).

Natural Healing Hypothesis
There is to date growing recognition that there are multiple paths to recovery from alcohol problems, that includes formal treatment, self-help, and natural recovery as seen in those who have never received treatment (Institute of Medicine, 1990; Hawks, 1991; Sobell et al., 1992). Lindström (1992) suggests that psychosocial treatment research has started at the wrong end of the spectrum: rather than starting with technique hypothesis, it should have started with a natural healing hypothesis. The natural healing hypothesis denies that treatment is effective: that is, that the effects of therapy are illusory and that improvement observed after treatment are no greater than the expected rate of spontaneous remission. Of the few published studies available in this area, all have serious methodological weaknesses (e.g. the absence of a non-treated, non-resolved control group), yet this is clearly an important area of research. A study by Sobell et al. (1993) highlights the fact that 26% of their sample had negative attitudes to treatment. 47.4% avoided treatment because of embarrassment or pride, and 37.7% wanted to handle their problem alone. Clearly there is a need to develop self-change strategies for a number of problem drinkers who are unwilling, unlikely, or not ready to enter alcoholism.
treatment programmes. An example of an approach in this vein is the self-help programme for problem drinkers developed by Savage et al. (1991).

Since the alcoholism treatment field does not have enduring treatments, the understanding of natural recovery processes may help lead to the development of effective strategies. Hawks (1991) notes that the preoccupation with fine tuning treatment approaches is not a practical response to the problem of alcoholism, and stresses the importance of prevention. Finally, because individuals in treatment programmes represent a small portion of those with alcohol problems, our understanding of this disorder may be highly biased or circumscribed. The benefits of psychosocial treatment may well relate to its power to facilitate a natural healing processes and support the patient's efforts to cope with his or her drinking problem (Frank, 1982). Therefore, defining the influences either inside or outside formal treatment that may have been effective in recovery may be a better way of clarifying active alcoholism treatment ingredients. When these ingredients become better known it will be easier to match the clients with interventions, and to specify and evaluate various treatment approaches. The complexity of this process, given our current state of knowledge, has been highlighted by the project MATCH researchers (Connors et al., 1994) who, to date, have recruited the largest subject pool to study client-treatment interaction effects. A starting point for the treatment outcome investigator is deciding between a variety of competing research methodologies.

**Deciding Between Competing Methodologies**

Healthcare professionals are under great pressure to respond to the challenge of evidence-based practice and to provide the optimal use of treatments and resources (Roth et al., 1996). How to define and measure outcome is, however, a hotly debated issue in the field of psychotherapy. Measures of treatment effectiveness include the therapist’s opinions, self-reports from clients, self-monitoring, role-playing, observation of behaviour in real-life settings, and data from archival records. These sources of outcome information differ in their accuracy and reliability. Therapist opinion or interpretation is not necessarily reliable because the client accepts this view: for example, insecure people accept both positive and negative feedback more readily than do more secure individuals (Snyder and Clair, 1977). In terms of self-report, concerns about pleasing therapists may encourage clients to offer inaccurate reports of their progress. The interactive nature of therapy and predictions of progress often obscures the true relationship between actions and outcomes (Einhorn, 1988). Nonetheless, there are both empirical and non-empirical means of attempting to determine whether the treatment of problem-drinking is successful.

**Non-Empirical Methods**

Testimonials are often offered in support of the effectiveness of intervention methods which are vivid but give information about one or two cases that may not represent the population of concern. Reliance on testimonials as evidence of the effectiveness of a particular method is a technique widely relied on by the followers of Alcoholics Anonymous organizations and is a version of the fallacy of a small sample, as well as the use of absolute rather than relative frequency (Gambrill, 1990). Testimonials usually describe positive results and rarely describe failures. Clinicians often overlook the possible role of other changes, and client’s life circumstances when attributing positive gains to therapy, thus, the reasons given for success or failure may be self-surviving (Jordan et al., 1988). In other words, if self-report is relied upon the ‘hello-goodbye’ effect (the tendency to report a situation as worse than it is at the start of therapy, and better than it is at the end), is likely to suggest only positive accounts of progress.

**The Non-Empirical Masquerading as the Empirical**

A recent paper offering tongue-in-cheek advice to novice alcoholism programme evaluations (Miller and Sanchez-Craig, 1996), attempted to show how researchers could give the illusion of scientifically respectable outcome research. These methods included; choosing only good prognosis clients to evaluate; keeping follow-up periods as short as possible; avoiding control and comparison groups; choosing measures carefully; focusing only on alcohol outcomes; using liberal definitions of success; relying solely on self-report; and always declaring victory regardless of findings. Miller and Sanchez-Craig (1996) also quote an example of what can be achieved by following their rules in referring to a report by Wallace et al. (1988). This study claimed a 72% rate of abstinence based on ‘located’ patients at 6 months follow-up. Their clients were initially screened for the ‘restorative potential’, their absence of medical psychiatric detoxification and self-care problems, their social stability, their wealth, and their ability to have completed at least 21 days of treatment. Wallace et al. (1988) then
chose a randomly selected pool of patients and included in the success group those who were continuously abstinent, those who had slipped, and those who were currently but not continuously abstinent. Publication of research of this type (presumably because it meets a minimum scientific standard) places alcoholism treatment evaluators in a difficult position: they are faced with a demand to evaluate outcome with the knowledge that the purchasers who demand this evidence may be impressed by evaluations that do not cling too rigidly to scientific standards.

**Empirical Studies**

Technically valid outcome studies are less numerous than the first two categories. An early assessment of alcoholism treatment studies by Crawford and Chalupsky (1977) found sufficient methodological flaws to ‘cast doubt on the integrity of the reported results’, and suggested that most studies were ‘scientifically and practically unproductive’ (p. 74). More recently, a review of 339 alcoholism treatment studies published between 1980 and 1992 (Morley et al., 1996) highlighted areas of improved methodological quality such as adequate follow-up periods and independent corroboration of self-report of drinking. However, Morley et al. (1996) also highlighted several areas of concern. The literature confirmed low rates of treatment implementation assessment and treatment process analysis, and many studies failed to report the number of patients in treatment during the study recruitment phase. Further, patient descriptive data were underreported with an average of less than four of seven basic patient characteristics being reported in the typical study, a finding of significance when the underreporting of such data has been cited as the reason for the non-use of research findings by clinicians (Francis and Aronson, 1990). Further, there was a low mean statistical power to detect a medium treatment effect and only one-tenth of studies reported that therapists were trained in the treatment provided, a picture that accords with findings in other fields (e.g. Sedlmeier and Gigerenzer, 1989; Cohen, 1992).

Particularly useful guidelines for evaluating treatment for alcohol problems have been provided by Nathan and Skinsted (1987) and Miller (1986). Examples of outcome studies that adhere to or exceed these guidelines include Miller et al. (1992), Barbor et al. (1992), Litt et al. (1992), Finney and Moos (1991, 1992), Project Match Research Group (1997), and the work of researchers at the Penn-V.A. Centre (McLellan et al., 1996). The latter group have, for example, elected to use the designs, methods and measurement standards recommended by the Food and Drug Administration (1980). These standards include an ‘intent to treat design’, data collection by independent evaluators, and a high rate (over 70%) of contact at follow-up. Recent quantitative synthesis of a large number of alcohol treatment studies have provided important first (Holder et al., 1991) and second (Finney and Monahan, 1996) approximations of the cost effectiveness of different interventions. These syntheses note, however, how differences between studies in terms of variation in treatment implementation and patient characteristics can affect the overall effectiveness in such analysis. Indeed, Kazdin (1996) notes that while there is general agreement that validated treatments are worthwhile, there is less consensus about how to identify and select these treatments. ‘Multiple perspectives’ on validated treatments derive from questions about the criteria for deciding whether a treatment is empirically supported, the relation of outcomes demonstrated in research (efficacy) to those obtained in practice (effectiveness), and the relevance, utility and limitations of methods used in therapy studies (e.g. use of treatment manuals, standardization of treatment) in relation to the demands of clinical practice.

In a thought-provoking article, Bergmark and Oscarsson (1991) focus on problematic questions that relate to the methodology of treatment service research. They note that clinical practice is more often governed by internal pragmatism and less by scientific evidence, and that the success of non-scientific programmes such as AA can be explained by treatment factors other than a belief in a disease model of alcoholism. They highlight questions such as which factor constitutes a therapeutic agent, noting that individual qualities among personnel play an active role, and that it is often difficult to control and separate out dependent variables (client characteristics) from independent variables such as treatment techniques. Other problems include those of treatment integrity (do practitioners do what they say?), and whether practitioners know what they do (i.e. why are there significant differences in treatment outcome between units who use the same treatment method?). A recent survey of 21 major journals that published outcome studies of psychological treatment revealed the use of a ‘staggering’ number of separate measures of change, making an integrated picture of research results impossible (Froyd et al., 1996). While some efforts at building measurements consensus within diagnostic categories have been made by societies such as the

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American Psychological Association (Horowitz et al., 1994), the results have yet to be made available in a form that facilitates implementation. Recent work advocates the use of an organizational model in conjunction with specific criteria to develop instruments, select outcome measures, and guide the creation of assessment batteries (Lambert et al., 1986; Newman and Ciarlo, 1994; Froyd et al., 1996).

**Using Knowledge Effectively**

Having defined success in technical terms, the issue becomes one of using knowledge to develop new understandings by effective dissemination (Beutler et al., 1992; Sobell 1996) and through the development of theory. This is the use of knowledge to inform the 'bigger picture'. There is growing awareness of the factors that can increase the likelihood of research findings being taken up positively by organizations: these include a consistency between the research content, the context in which the research is conducted, and the process of implementation (Hardy, 1995). However, 'the output of science presents a threat and an opportunity' (Peckham, 1995) in that the generation of knowledge challenges accepted ways of thinking, and the fate of research can depend on how acceptable the findings are to the scientific and clinical community. One factor that influences whether a treatment innovation is adopted is compatibility: that is, whether a finding is consistent with existing values, past experiences, and the needs of the potential adopters (Rogers, 1995). The 'confirmation bias' (Gambrill, 1990) refers to the tendency to overlook data that does not support preferred beliefs and practice theories, while sometimes evidence can be misinterpreted as data that actually supports preferred views. By reading only material that matches assumptions it is unlikely that practitioners' expectations will be violated and new learning will not be triggered (Hayes-Roth et al., 1981). No area of psychological enquiry demonstrates this picture better than the treatment of alcoholism, where a prime example is moderation goals for alcohol treatment (Sobell and Sobell, 1995).

In a general sense clinicians select material that reflects their preferred practice, framework, or methodology; their decisions are influenced by what is already known or favoured (Gambrill, 1990), and there is a general tendency to reject scientific in favour of anecdotal empiricism (Thomgate and Plouffe, 1987). For most clinicians 'practice theory' is probably a mixture of common knowledge, hunches, and scientific knowledge (Bromley, 1986). There is a tendency to doubt the value of empirical research as highlighted by findings in the field of medicine showing that published research often has little influence on practice (Banta, 1984) and that improved treatment methods are often not adopted (Light, 1980).

There is often no agreed criteria against which to check the accuracy of discussions in clinical practice in psychology and psychiatry where economic and political factors influence treatment decisions. Clinicians are often not fully aware of how these larger influences affect the very definitions of clinical and social problems, and their subsequent recommendations for intervention. Giesbrecht and Premen's (1987) sociological viewpoint on the changes they had measured in alcoholism research between 1948 and 1972 noted 'That they are caused less by accumulating scientific knowledge than by changes in conceptions and structuring of research and knowledge' (p.193). Peele (1987), in his analysis of why controlled drinking outcomes vary by investigator, country and era, notes that scientists with differing views and working in different eras simply do not evaluate the same questions with comparable measures. He cites investigator variables that include national and ethnic variations in the acceptance of the disease model of alcoholism noting, for example, that Jewish-Americans are very resistant to this idea (Glassner and Berg, 1984).

Peele (1987) concludes that an explanation for the major variations in treatment outcome needs to take into account the explanatory framework or culture that prevails in a particular research setting, which result from difficult ethnic and national attitudes to alcoholism, varying professional outlooks, and changing research methods that characterize scientific eras. Such a perspective makes clear how difficult it is to overcome cultural inertia and beliefs about drinking and treatment, and how hard it is to really know if a given treatment for problem drinking is successful.

**WHY RESIST THE EVIDENCE?**

There are several historical reasons for the separation of science and practice in the alcohol field (Pattison et al., 1977). However, in 1986 Miller and Hester wrote that 'American treatment of alcoholism ... appears to be impervious to emerging research evidence' (p.162). A year later Miller (1987) concluded that a quarter of a century of research on alcohol problems had had little impact
on practice and policy issues. At times this rejection of scientific research has been based on fallacious arguments and, particularly in the case of Alcoholics Anonymous, by appeals to consensus and the authority of the many (Gambrill, 1990). The highly publicized and well-known 'Sobell Affair' (Heather and Robertson, 1983) is an example of a case in which scientific evidence was dismissed as falsified data despite the fact that there was no convincing evidence to support this accusation. The findings of the Sobells regarding the favourable outcome for some patients who opted for controlled drinking challenged the zeitgeist of the time (Sobell and Sobell 1976). When the results were challenged in the prestigious journal Science (Pendery et al., 1982), they were not invited by the journal to reply, and the critical media reinforced the view of 'no smoke without fire'. The Sobells were to some extent the victims of the hostility engendered by what was viewed as their assault on the disease conception of alcoholism at a time when the alcoholism treatment community was disinclined to accept this position. They had become involved in 'the kind of science and technology that tries to teach alcoholics to drink “that is in reality a warped Frankensteinian thing”' (Lovern, 1982). Arguments such as this bear a striking resemblance to what Andrews and Wormith (1989) term 'knowledge destruction': that is, the process of mounting spurious arguments against a model or a set of data because its conclusions do not match with another preferred position. The result of this, wrote Heather and Robertson in 1983, was 'likely to be that the treatment of alcoholism in the United States is about to enter a new dark age, in which critical thinking and experimentation will be replace by a narrow and stultifying adherence to a crude and empirically invalid disease model' (p. 280).

Well-controlled research studies, however, tell us that alcoholism treatment is more effective than no treatment (McLellan et al., 1996), and that some treatments are more effective than others (McLellan et al., 1993). Further, although the effectiveness of matching patients to specific types of treatment programmes has yet to be unequivocally demonstrated (Project Match Research Group, 1997), matching appropriate services to patients specific treatment problems is both practical and effective (McLellan et al., 1997). Recent research on treatment has also forced us to reconsider basic beliefs about alcoholism. For example, Babor’s (1994) review of brief interventions suggests that the traditional disease model in which alcoholism is viewed as an 'all-or-nothing' phenomenon does not apply to a large proportion of people who have drinking problems but are not dependent on alcohol. McLellan et al.'s (1994) research on treatment outcome equivalence for different types of substance abuse suggests that the distinction between alcoholism and other drug abuse should be reconsidered.

CONCLUSIONS

The acknowledgement of the importance of nonspecific factors in therapy, the lack of comparability between alcoholism treatment studies, the concern that the application of scientific rigour may deceptively mask the effectiveness of bona fide treatment methods (Moos, 1997), and the inherent problems to be overcome in producing methodologically adequate outcome research, should not deter us from a radical commitment to treatment evaluation as an applied science. Rather should it discourage us from attempting to develop future generations of clinicians who prefer scientific explanations to empathic and ideological explanations (McFall, 1991), even when these run counter to widely held beliefs (Project Match Research Group, 1997). Those who espouse the fruitlessness of a scientific approach to alcoholism treatment outcome research—a version of the view that science does not have all the answers and that we must therefore muddle along relying on clinical experience, judgment, creativity and intuition (Matarazzo, 1990)—reflect the mistaken notion that science is a set of answers rather than a set of processes or methods by which to arrive at answers.

There would seem to be few valid alternatives to an empirical route towards approximating an accurate assessment of alcoholism treatment outcome. This reflects the increasing relevance of research to healthcare management (cf. The Culver Report; Peters and Himsworth, 1994). Such enquiries, however, must be sensitive to the many pitfalls involved in such an endeavour, and make use of a wide range of methodologies. As Geddes and Harrison (1997) note, the issue is not whether evidence-based treatment is appropriate: The only sensible debate concerns how it can be applied most effectively and pragmatically (p. 220).

Recent advances in treatment evaluation that have helped to bridge the scientist–practitioner divide include the use of single-case methodology (Long and Hollin, 1995), while qualitative research methods have also added to our knowledge base about problem drinking (Orford, 1995). There are
many recent advances in quasi-experimental (systematic case tracking) methods (e.g. Kazdin, 1993; Howard et al., 1995) that involve the development of a theoretical framework: the 'dosage' model of psychotherapeutic effectiveness (Howard et al., 1986) and the 'phase' conception of psychotherapy (Howard et al., 1994), both of which allow the operationalization and testing of concepts and the development of a system of feedback to the clinician concerning the course of a single treatment. Approaches such as these seem concurrently to be both ways of overcoming the daunting challenge of convincing clinicians that treatment research is of practical value (Talley et al., 1994), and of providing researchers with a methodology that will enable them to contribute via empirical research answers to the question of which treatments for problem drinking work and endure.

REFERENCES


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CHAPTER FOUR:

TREATMENT PROCESS
AND OUTCOME
Having examined the issues relevant to treatment outcome within the addiction field, a research protocol was developed that took account of a number of confounding variables, particularly the tendency for alcohol unit researchers to be part of the team under study and, therefore, to be seen to have a vested interested in favourable results. Following the design of a sequential study that made possible a comparison between an 'old' and a 'new' treatment system, two key steps were taken:

(a) links with a university based researcher to oversee the running of the project;
(b) a research assistant to gather data.

The latter was trained in phlebotomy and in a series of training sessions acquainted with the unit treatment programme and working practises. Each newly admitted patient was asked in writing to participate in the ongoing research project and, if agreeable, was subsequently interviewed by the project research assistant who tracked their progress through active treatment and follow-up. All follow-ups were arranged by telephone but were conducted face to face within the patient's own home. Although this increased the number of research resources necessary to complete the study (particularly since the unit drew from a national catchment area) it was felt that a more accurate appraisal of the patient's post-intervention outcome could be made within his or her own environment.

Data were gathered on consecutive patients with an ICD-10 diagnosis of alcohol dependence (WHO, 1992) who completed treatment in the year before the programme change (N = 112). A second data set was gathered on patients (N = 100) who were treated in the first year following programme change.

The considerations driving this initiative were the need to understand whether treatment was effective and to examine the issue of cost effectiveness.

The main findings of the outcome study are described below: they have been published as follows:

Treating alcohol problems: a study of programme effectiveness and cost effectiveness according to length and delivery of treatment

CLIVE G. LONG¹, MARTIN WILLIAMS¹ & CLIVE R. HOLLIN²

¹St Andrew’s Hospital, Northampton and ²Centre for Applied Psychology, University of Leicester, Leicester, UK.

Abstract

Aims. To compare effectiveness and cost-effectiveness of a 5-week inpatient and a two week in- and day-patient regime. Design. Pre-post assessment of consecutive treatment referrals with follow-up at 6 and 12 months. In a sequential study design, 112 patients underwent a 5-week residential programme while a subsequent 100 patients underwent a 2-week in- and day-patient programme. To investigate the effect of changing programme delivery, patient groups from before and after the programme changes were compared. Setting. Addiction treatment unit in an independent hospital. Participants. One hundred and thirty-six males and 76 female patients with an ICD-10 diagnosis of Alcohol Dependence Syndrome. Measurements. Self-report (Comprehensive Drinkers Profile: Follow-Up Drinkers Profile: SADQ), collateral report (Collateral Interview Form) and blood test (MCV & GGT) data were used to categorize patients into abstinent, non-problem drinker, drinking but improved and unimproved groups. Percentage of days abstinent, intensity of drinking, length of time in treatment, treatment cost and use of aftercare were also measured. Findings. Abstinence or non-problem drinking was achieved by 55.6% of all patients at 1 year. Change in programme delivery did not affect outcome but treatment costs and mean length of stay for the revised programme were significantly reduced. Conclusions. A two week in- and day-patient treatment was more cost effective than a 5-week inpatient treatment. Design limitations make these conclusions tentative pending a randomized controlled trial.

Introduction

A number of outcome studies from British alcohol treatment units (e.g. Edwards et al., 1977; Elal-Lawrence, Slade & Dewey, 1986; Orford & Keddie, 1986; Robertson, et al., 1986; Chick et al., 1988; Shaw et al., 1990; Booth et al., 1992) have added to a larger international addiction literature. However, there have been few reports of treatment outcome from private or independent facilities, which have been criticized for their dual propensity to advertise the benefits of the treatment they provide and concomitantly to be unable to substantiate their claims because of a lack of research data (Curson, 1991; Booth, 1992). Issues confounding the assessment of treatment effectiveness have included a tendency for “successful” inpatient treatment programmes (e.g. Wallace et al., 1988) to have their outcome evaluations carried out by those who run the programmes (Peele, 1990) and careful selection of only “good prognosis” patients (Clemens & Khan, 1990). A second issue has been the adher-
ence in the United States and in private British treatment centres to a “belief based” Minnesota model of treatment (Sobell & Sobell, 1993) whose structure and philosophy has not allowed controlled research to take place (Chiauzzi, 1991).

Prior to the comparison of Twelve-Step Facilitation Therapy with Motivational Enhancement Therapy and Cognitive Behavioural Coping Skills Therapy by the Project MATCH investigators (Project Match Research Group, 1997), only one controlled randomized trial had compared a Hazelden-type treatment programme with a traditional inpatient programme at 1 year follow-up (Keso & Salaspuro, 1990). Although there was a positive trend at 1 year follow-up for higher rates of abstinence in the Hazelden patients (26% vs. 10% of traditional patients) this did not reach statistical significance. Further, the low rates of psychotherapy received by the traditional patients made them a poor comparison group.

It was in this context that the Institute of Medicine of the US National Academy of Science undertook their 4-year investigation (Institute of Medicine, 1990), stimulated by a view that the alcohol field “needed to prove itself” (Saunders, 1991) in terms of treatment efficacy, relevance to modern health service provision and cost-effectiveness. Peele (1990) and Miller & Sanchez-Craig (1996) have critically examined claims for high success rates for alcoholism with programmes making claims of abstinence rates of 60-90%. While it is clear that treatment is more effective than no treatment (McLellan et al., 1996), and that patients who receive treatment in well-designed treatment studies are significantly improved in a variety of problem severity areas at follow-up (McLellan et al., 1996; Project Match Research Group, 1997) the nature and amount of change is typically more modest. For example, in McLellan et al.’s (1994) large scale study of 649 alcohol, cocaine and opiate-dependent patients admitted to 22 public and private treatments, 43% of the 242 alcohol dependants were abstinent at 6-month follow-up, with more than 75% showing a reduction in number of drinking days, and in number of days intoxicated. These rates are similar to those reported many times in the past decade (Moos, Finney & Cronkite, 1990), albeit that the quasi-experimental designs typical of real world settings (where there are usually no control groups or random patient assignments) does not allow any inference concerning the causal role of treatment in change (McLellan et al., 1996).

In the recent thrust towards “evidence-based” practice of medicine (Sackett et al., 1996), decisions about the provision and delivery of clinical services are driven by evidence of cost as well as clinical effectiveness. The issue of the cost-effectiveness of treatment (Holder et al., 1991; Finney & Monahan, 1996) is a particularly important consideration in outcome evaluation since many independent alcoholism treatment units have been criticized for providing an overly intensive residential treatment packages (Institute of Medicine, 1990). Reviews of research on the relative effectiveness of more versus less intensive treatment have consistently concluded that more costly approaches (e.g. inpatient, longer) have no better overall outcomes than less costly alternatives (Annis, 1986; Miller & Hester, 1986), although two studies have reported a modest advantage for more intensive counselling (Chick et al., 1988) or behaviour therapy (Robertson et al. 1986) over brief intervention. However, more costly residential treatment may be of differential benefit for people who are socially unstable (e.g. homeless, indigent), or more severely dependent (Miller, 1991).

Another dimension of cost-effectiveness largely ignored is the relative efficiencies of alternative treatment modalities. Holder et al.’s (1991), and Hester & Miller’s (1995) analysis of the research literature has provided encouraging support for the specific effectiveness of a number of modalities for treating alcohol problems, including social skills training, self-control training, brief intervention, marital therapy, stress management and the community reinforcement approach. The intensity of treatment is also of relevance. A controlled outpatient study (McLellan et al., 1993) showed that outcome improved with greater amount of professional service directed at the addiction-related problems of substance-dependent individuals.

The present study was undertaken with two main aims. First, to assess the treatment outcome for non-selected consecutive referrals to an alcoholism treatment centre. Secondly, to compare the relative cost-effectiveness of the original 5-week inpatient regime with that of a revised 2-week in- and day-patient regime that succeeded it.

The treatment programme was cognitive be-
havioural in orientation (for specific details of the two programmes see Long et al., 1995). The original 5-week programme was typical at the time of the study of British alcoholism treatment units in terms of its average length of stay (Ettore, 1988). The change in treatment delivery was driven by the hospital’s mission to provide a state of the art research-based treatment for problem drinking. To effect this aim, two main initiatives were undertaken prior to programme change. First, there was a 6-month period in which weekly staff education sessions (an established feature of staff development which preceded and was maintained throughout the study) focused on recent advances in the literature, with emphasis on work that assessed evidence of the effectiveness of particular treatment strategies (e.g. Miller & Hester, 1986; Institute of Medicine, 1990; Holder et al., 1991), including motivational interviewing (e.g. Miller & Rollnick, 1991), matching patients to treatment (e.g. DiClemente, Carbonari & Velasquez, 1992; Litt et al., 1992) and brief interventions (e.g. Miller & Sovereign, 1989). Secondly, the services of an expert in the field of problem drinking were engaged to advise on and facilitate staff involvement in changes in the programme. A study looking specifically at the impact of the change on the work environment showed that an above average level of satisfaction with the work environment was maintained (Long, Williams & Hollin, 1995). The maintenance of satisfaction was attributed to the meeting of staff expectations, the focus on a cognitive behavioural ideology and the establishment of a research culture.

**Method**

Two hundred and twelve patients with an ICD-10 (World Health Organization, 1992) diagnosis of Alcohol Dependence Syndrome, representing 95.9% of consecutive new admissions to the addiction unit programme between 1992 and 1994, gave consent for their progress to be monitored after discharge. Approximately 40% of admissions were funded by the NHS with the majority of the remainder being funded by medical insurance. The first 112 patients underwent all or part of the original 5-week residential programme. The succeeding 100 patients participated in the revised 2-week programme involving both inpatient (detoxification) and day-patient elements. It is important to note that the intensity of treatment did not differ between the two programmes: while inpatients received more hours of care per day the amount of services directed at addiction-related problems (McLellan et al., 1996) was approximately equal since in- and day-patients attended the same treatment sessions.

Patients were followed-up at 6 and 12 months after discharge. Data were gathered by a researcher independent of the clinical treatment team, and were analysed by two individuals who were blind to treatment modality. Biological (blood test) and collateral confirmation of self-report was used, and a high percentage (89.2%) of the unselected study population were interviewed over an adequate period follow-up. Thus, the study used the designs, methods and measurement standards of the US Food & Drug Administration advocated by McLellan et al. (1996): an “intent to treat” design, interview and data collection by an independent researcher, and over 70% follow-up contact at 6 and 12 months. In view of the importance of multidimensional measures of outcome when evaluating treatment this outcome study focused on the two levels of analysis suggested by Babor et al. (1994), as follows.

1. **Specific indicators of drinking behaviour:**
   - (a) proportion of available drinking days abstinent, i.e. percentage of days not drinking; and (b) intensity of drinking, i.e. the total amount consumed (in units equivalent to 8 g of pure alcohol) during the follow-up period divided by the number of actual drinking days.

2. **A measure of outcome and relapse that included alcohol-related consequences and problems as well as drinking behaviour** (McLellan et al., 1996). This use of a global measure, taken directly from criteria listed by Heather & Tebbutt (1989), was also used by Miller et al. (1992) and by Waisberg & Porter (1994). This global measure, following Heather & Tebbutt (1989), gives four outcome categories.

   i. **Abstinent.** The absence of alcohol-related problems and dependence throughout the follow-up period. Alcohol consumption level includes totally abstinent and mostly abstinent (up to five ‘slips’ in the preceding 6 months) categories. A slip was defined
as drinking any amount within a 24-hour period on five or fewer occasions (days).

(ii) Non-problem drinker. The absence of alcohol-related problems and dependence. Alcohol consumption level includes controlled drinking (never drinking to intoxication), and mostly controlled (no more than five "slips") in the preceding 6 months. A slip was defined as drinking 96 g or more of alcohol within a 24-hour period.

(iii) Drinking but improved. A reduction of one-third or more in terms of alcohol-related problems, level of dependence and alcohol consumption in the preceding 6 months.

(iv) Unimproved. The same, worse or dead in the preceding 6 months.

Procedure at intake

All patients were assessed using two measures. First, the Comprehensive Drinkers Profile (CDP; Miller & Marlatt, 1984), a semi-structured interview which provides demographic and motivational data in addition to data on drinking and alcohol-related problems, including aggression, conflicts with the law, depression, family problems, financial problems, health problems, problems with assertiveness, eating or weight problems, problems with memory and concentration, sleeping or social contact, sexual problems, suicidal thoughts, tension or anxiety or work problems. The CDP is an averaging or grid method of measuring alcohol intake which has been found to be comparable to other retrospective measures (e.g. timeline follow-back), and to guard against underestimates of consumption (Grant, Tonigan & Miller, 1995). For the purpose of this study an individual was allocated an alcohol-related problem score between 0 and 18 depending whether a problem from the CDP list of problems was related clearly to the individual’s problem drinking. Secondly, level of dependence on alcohol was assessed by the Severity of Alcohol Dependence Questionnaire (SADQ; Stockwell, Murphy & Hodgeson, 1983). This is a 20-item measure with each item rated on a 4-point Likert-type Frequency Scale giving a range of 0–60.

Procedure at follow-up

An invitation to be interviewed was offered to all patients and significant others (normally relatives of the patient) at follow-up. Significant others were approached only where permission to do so had been given during intake. In total, 129 participants (60.8% of the study sample) had named significant others for follow-up. There were four assessment measures at follow-up: first, the Follow-Up Drinkers Profile (FDP) (Miller & Marlatt, 1987), a companion form of the CDP for assessing treatment outcome (used at 6 and 12 months); second, the Collateral Interview Form (CIF) (Miller & Marlatt, 1987), also a companion to the CDP. These are structured interview techniques for collecting information from patients and significant others, and for corroborating information regarding the validity of patient’s self-reports (used at 6 and 12 months). The third consisted of serum-gamma-glutamyl-transpeptidase (GGT) and the mean cell volume (MCV) blood tests used as markers of alcohol intake (Chick et al., 1981). These tests, initially undertaken on intake, were requested at 12-month follow-up of every other patient on the basis of their numbering in the sequence of patients admitted. The fourth was repeat administrations of the SADQ (6 and 12 months).

Sample description at intake

The total study population (n = 212) consisted of 136 males (64.2%) and 76 females (35.8%). At intake, they had a mean age of 45.0 years (SD = 10.7), and 140 (66.0%) were in full or part-time employment. Twenty-four people (11.3%) described themselves as unemployed, the remaining 48 (22.6%) were retired or homemakers. One hundred and thirty-five people (63.7%) were married and living with their partner, 43 (20.3%) were separated or divorced, four (1.9%) had been widowed, while 30 (14.2%) were single and had never been married. Fifty people (23.6%) had 16 or more years of education. The population had a mean SADQ score of 24.15 (SD = 10.06), indicating a moderate level of dependence on alcohol.

Classification of global measure of drinking outcome

Measures used to determine outcome classification included the FDP (Miller & Marlatt, 1987) which provides data on alcohol-related problems, and the SADQ (Stockwell et
Treating alcohol problems

Table 1. Indices of drinking behaviour for patients at intake and 6- and 12-months follow-up

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<th>Follow-up</th>
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<td>Intake</td>
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<td></td>
<td>(n = 212)</td>
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<tr>
<td>Available days abstinent (%)</td>
<td>4.73 (17.87)</td>
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<td>Intensity of drinking (units per day)</td>
<td>18.77 (11.72)</td>
</tr>
<tr>
<td>Alcohol-related life problems (range 0–18)</td>
<td>6.11 (2.88)</td>
</tr>
<tr>
<td>SADQ score (range 0–60)</td>
<td>23.66 (9.83)</td>
</tr>
</tbody>
</table>

al., 1983). Applying the specified criteria, all participants were classified independently by two raters into four outcome groups at 6 and 12 months follow-up. Inter-rater reliability was high (Cohen’s kappa = 0.98 at 6 months and 0.98 at 12 months). In all cases where discrepancies occurred, agreement was reached after clarification of the criteria.

Criteria for matching
In order to compare the efficacy of the original and the revised treatment programmes, participants from the two groups were matched on the basis of gender, age group (under 40; 40–59 years; and over 60), and severity of dependence on alcohol (low dependence, SADQ score 0–20; moderate dependence, SADQ score 21–40; high dependence, SADQ score 41–60). Participants from the original programme were paired sequentially with the first available match from the revised programme. This process resulted in 75 participants from the original programme being matched with 75 participants from the revised programme.

Results
At 6 months after discharge, 193 participants (91.0% of the original sample) were contacted and interviewed. The main reason for failure to follow-up was lost contact through change of address, although three participants no longer wanted to be involved in the study. At 1 year, contact was lost with a further four patients, reducing the final contact rate to 189 of the 212 original participants (89.2%). The 23 participants with whom contact was lost did not have significantly different characteristics to the original sample.

Indices of drinking behaviour at follow-up
Table 1 shows descriptive statistics for the four indices of drinking behaviour. Participants at 6 and 12 months follow-up showed a significant increase in the number of days they spent without drinking and reductions in their intensity of drinking, alcohol-related life problems and SADQ scores from intake values (paired-sample t-tests; \( p < 0.001 \) in each case). There were no significant differences between the values at 6 vs. 12-month follow-up.

Classification of global measure of drinking outcome
At 6 months after discharge from the treatment unit, 112 participants (58.0% of those contacted) reported abstinence or non-problem drinking. At 1 year after discharge, this figure was 105 (55.6% of those contacted). The results of the outcome classification are shown in Table 2.

No patient classified as “abstinent” consumed more than 96 g alcohol during a “slip”. Outcome status was confirmed using collateral informant and blood test data. In all cases where abstinence or problem-free drinking was claimed, examination of the CIF data showed no discrepancy between self- and significant others-report of drinking or alcohol-related problems.

At the 12-month follow-up, 106 people (56.1% of the 12-month follow-up group) gave blood samples. Only two people refused to give samples, stating an aversion to needles.

One-year MCV and GGT blood tests were examined and participants were categorized as having normal (GGT < 50 i.u./l for men and 35 i.u./l for women; MCV < 95 fl) or abnormal results. In total, 20 participants (18.9% of those from whom blood was taken) had abnormalities in both MCV and GGT values. The blood test data confirmed that no individual who claimed
Table 2. Global outcome status for patients at 6 and 12 months follow-up

<table>
<thead>
<tr>
<th>Global outcome measure</th>
<th>Follow-up</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6 months (n = 193)</td>
<td>12 months (n = 189)</td>
<td></td>
</tr>
<tr>
<td>Abstinent</td>
<td>69 (35.8)</td>
<td>68 (36.0)</td>
<td></td>
</tr>
<tr>
<td>Non-problem drinker</td>
<td>43 (22.3)</td>
<td>37 (19.6)</td>
<td></td>
</tr>
<tr>
<td>Drinking but improved</td>
<td>39 (20.2)</td>
<td>39 (20.6)</td>
<td></td>
</tr>
<tr>
<td>Unimproved</td>
<td>42 (21.8)</td>
<td>45 (23.8)</td>
<td></td>
</tr>
</tbody>
</table>

abstinence or problem-free drinking had abnormalities in both MCV and GGT values.

Changes in outcome status between 6 and 12 months revealed that of the 105 participants classified as "abstainers" or "non-problem drinkers" at 12 months follow-up, 92 (87.6%) had been abstainers or non-problem drinkers at 6 months. Sixty-five of the 84 participants (77.4%) classified as either "drinking but improved" or "unimproved" at 12 months were previously classified as from one of these categories at 6 months.

Comparing the original and revised treatment programmes

In order to facilitate comparisons 75 participants from the original treatment programme were matched with 75 participants from the revised programme according to age, gender and dependency (SAQ scores) at intake. The relative efficacy of the two programmes in terms of the drinking indices and global outcome status was then compared.

Classification of outcome at follow-up showed that 42 of the matched 75 participants (56.0%) from the original programme were abstinent or non-problem drinkers at 6 months compared with 45 (60.0%) from the revised programme. At 1 year, 42 participants (56.0%) from the original programme were abstinent or non-problem drinkers compared with 40 (53.3%) from the revised programme. Table 3 shows the full outcome classification for the two programmes. The observed differences between the programmes at 6 and 12 months were not statistically significant (Mann-Whitney $U = 2560.5$, $p = 0.32$; $U = 2750.5$, $p = 0.81$, respectively).

The indices of drinking behaviour at follow-up were also compared for patients attending the original and revised programmes (see Table 4). Again using a Mann-Whitney $U$-test no significant differences were found for the original and revised treatment regimes on any of the four measures.

Costs of treatment

Costs of treatment are defined by Holder et al. (1991) as the average cost of care across participants for units of care provided by the facility. Thus, for example, total costs for a stay in an inpatient facility is the total number of days of care times the costs (charge) per day. The current comparison is made in terms of time and cost for the original programme, an inpatient treatment (where participants receive medical and supporting services over a 24-hour day), and the revised programme, which combined inpatient and day-patient treatment (a non-residential treatment covering an 8-hour day). The cost for individual participant's care is, therefore, calculated as number of inpatient and/or outpatient days multiplied by the standard (all inclusive) rate for each type of care.

Examination of reasons for discharge revealed that 41 participants from the original programme (54.7%) had either completed the course or had discharged from the unit when the key worker was satisfied that they were ready to leave. This figure compared with 57 participants (76.0%) from the revised programme who completed the course or left when ready to do so.
Table 3. Global outcome status of patients in original and revised programmes at follow-up

<table>
<thead>
<tr>
<th>Follow-up</th>
<th>Original programme (n = 75)</th>
<th>Revised programme (n = 75)</th>
<th>Original programme (n = 75)</th>
<th>Revised programme (n = 75)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abstinent</td>
<td>27 (36.0%)</td>
<td>27 (36.0%)</td>
<td>26 (34.7%)</td>
<td>28 (37.3%)</td>
</tr>
<tr>
<td>Non-problem drinker</td>
<td>15 (20.0%)</td>
<td>18 (24.0%)</td>
<td>16 (21.3%)</td>
<td>12 (16.0%)</td>
</tr>
<tr>
<td>Drinking but improved</td>
<td>22 (17.3%)</td>
<td>18 (24.0%)</td>
<td>15 (20.0%)</td>
<td>16 (21.3%)</td>
</tr>
<tr>
<td>Unimproved</td>
<td>20 (26.7%)</td>
<td>12 (16.0%)</td>
<td>18 (24.0%)</td>
<td>19 (25.3%)</td>
</tr>
<tr>
<td>12 months</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

The mean length of stay for participants in the original programme was 19.2 days (SD = 13.7) compared with 14.2 days (SD = 7.5) for patients in the revised programme. An independent samples t-test confirmed that the mean period of treatment was significantly shorter for those attending the revised treatment programme than for the original programme (t = 2.78, df = 148, p < 0.01). In addition, 24% of the revised programme's treatment was undertaken on a day-patient basis.

The briefer stay on the revised programme translated into an average reduction of 26% in the number of treatment days (inpatient or day-patient). The average number of hours spent on the treatment unit showed an even greater reduction (38%) as a result of a higher proportion of day-patient days in the revised programme. In total, the mean cost of care for participants on the revised treatment regime fell by 33%.

Follow-up attendance
Patients from the original treatment programme attended an average of 3.48 follow-up sessions (defined as 1 hour of either group or individual therapy) compared with 2.97 hours for the revised programme. Since only 33 patients (44%) from the original programme and 44 patients (58.7%) from the revised programme attended follow-up, attendees went to an average of 7.91 and 5.07 sessions, respectively.

In financial terms the cost of follow-up treatment for the revised programme was 6.81% across the group, or 30.1% less per person for those actually attending follow-up.

Discussion
While the study population can be viewed as somewhat more socially stable and better educated than those typically attending some British (e.g. Shaw et al., 1990), and American (Timko et al., 1995; Moos, King & Patterson, 1996) alcohol treatment units, the overall results at 12 months, (55.6% abstinent or non-problem drinking with only 23% unimproved), compares favourably with the results from other follow-up studies of residential treatment (e.g. Chick et al., 1988; Institute of Medicine, 1990; Moos et al., 1990; Shaw et al., 1990; McLellan et al., 1994).

The outcome figures also compare well with studies which have used participants with similar characteristics in terms of employment and marital status (e.g. Miller et al., 1992). A positive improvement in a large number of participants was confirmed by collateral and biochemical data, and reflected in fewer alcohol-related life problems. The results also highlight the importance of using two primary dependent measures of drinking outcome in addition to global categorization (Babor et al., 1994). The "stability of relapse" (patients tending to have the same outcome status at different follow-up points) is a feature of this study and echoes the findings of Finney & Moos (1991) from a 10-year follow-up of problem drinkers aged between 40 and 49 years.

It should be noted that conclusions drawn from the current study are limited by the sequential allocation of patients to group, and that a randomized controlled trial would have overcome a possible sampling bias. Thus, in the absence of a control group the findings cannot...
Table 4. Indices of drinking behaviour for patients in original and revised programmes at follow-up

<table>
<thead>
<tr>
<th></th>
<th>Follow-up</th>
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<tbody>
<tr>
<td></td>
<td>6 months</td>
<td>12 months</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Original programme</td>
<td>Revised programme</td>
<td>Original programme</td>
<td>Revised programme</td>
<td>Original programme</td>
<td>Revised programme</td>
</tr>
<tr>
<td></td>
<td>(n = 75)</td>
<td>(n = 75)</td>
<td>(n = 75)</td>
<td>(n = 75)</td>
<td>(n = 75)</td>
<td>(n = 75)</td>
</tr>
<tr>
<td>Available days abstinent (%)</td>
<td>65.55 (40.81)</td>
<td>72.62 (36.44)</td>
<td>63.79 (40.74)</td>
<td>70.58 (37.52)</td>
<td>70.58 (37.52)</td>
<td>63.79 (40.74)</td>
</tr>
<tr>
<td>Intensity of drinking (units per day)</td>
<td>9.67 (11.21)</td>
<td>8.96 (10.90)</td>
<td>9.89 (10.73)</td>
<td>8.04 (10.98)</td>
<td>8.04 (10.98)</td>
<td>9.89 (10.73)</td>
</tr>
<tr>
<td>Alcohol-related life problems (range 0-18)</td>
<td>1.76 (2.80)</td>
<td>1.01 (1.98)</td>
<td>1.80 (2.98)</td>
<td>1.01 (2.02)</td>
<td>1.80 (2.98)</td>
<td>1.01 (2.02)</td>
</tr>
<tr>
<td>SADQ score (range 0-60)</td>
<td>10.13 (13.70)</td>
<td>9.00 (12.00)</td>
<td>10.36 (13.95)</td>
<td>8.83 (11.60)</td>
<td>10.36 (13.95)</td>
<td>8.83 (11.60)</td>
</tr>
</tbody>
</table>
be attributed with absolute confidence to the direct effects of treatment. Rather, they suggest that those alcohol dependent participants who received treatment in a "real world" programme showed improved functioning 1 year after beginning treatment (McLellan et al., 1996). Further, the two programmes had broadly similar effects. In view of the finding from controlled studies (e.g. McLellan et al., 1993) that patients do better in programmes where more professional services are directed at the addiction-related problems of substance-dependent individual, these results are at first sight surprising. A possible explanation is that the comparable outcomes resulting from a shorter patient stay reflect increased staff enthusiasm and motivation following programme change. However, this appears unlikely given a perceived lack of change in the work environment by staff after the introduction of a revised programme (Long et al., 1995). The finding of no between-group differences may well reflect the fact that the revised programme maintained several elements of the original programme, and that controlled studies have usually failed to show differential outcome between longer and shorter treatments except for participants with marked psychopathology or social instability (Institute of Medicine, 1990; Gottheil, McLellan & Druley, 1992). It is of course a moot point whether treatment is the dominant factor maintaining behaviour change at follow-up (Edwards et al., 1988), and whether more minimal interventions than the average 14.2 days of treatment received by participants in the revised programme would have led to an equivalent outcome. However, given that the treatment period includes a 4-5-day detoxification and that the ability to benefit from treatment may be inhibited by neuropsychological and physical factors early on (Becker & Jaffe, 1984), then a further reduction in therapeutic input for dependent drinkers (Babor, 1994) may result in minimal treatment that would reduce overall effectiveness and preclude a focus on some of those elements of treatment of proven value (Holder et al., 1991).

Findings concerning average length of stay for the original programme indicated that some participants did not complete all of the 5-week course. It is possible that this indicates a mismatch between staff expectations and patient demand, and that this has been lessened by the revised programme. In addition, practical constraints may make a 2-week programme more feasible, particularly for those participants in employment. In the current study just over half the participants attended the recommended follow-up appointments (an average of 7 sessions per person). Although aftercare has been generally found to be associated with good treatment outcome (Walker et al., 1983; Booth et al., 1992), it is less likely to be of benefit for treated problem drinkers who are employed, well educated, and who may be self-referred (Ito & Donovan, 1986). Further, the required intensity of follow-up needed to achieve a significant additional treatment effect may make such care unrealistic and uneconomic (Gilbert, 1988).

While the conclusions that can be drawn from this study are limited by a sequential design, current and previous findings nevertheless suggest that the predominantly socially stable clientele of private/independent alcohol treatment units (Curson, 1991) may be "over-treated" by the lengthy residential and aftercare provision typically provided (Holder et al., 1991). Although further analysis of the current dataset will examine individual responses to different treatment regimes and the interaction of patient and treatment type, the current outcome evidence endorses the usefulness of the revised treatment approach on economic grounds.

Acknowledgements

The help and support of Dr Marie Midgley and of Dr Tim Kidger (who initiated the described programme change) is gratefully acknowledged, as is the assistance of the Thomas Prichard Addiction Unit counsellors: Ken Marriott, Eileen Banyard, Faye Baker, Ann Coward and Marion Fox.

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for treatment relevant information in inpatient mean alcoholics. Journal of Studies on Alcohol, 45, 339-343.


Institute of Medicine (IOM) (1990) Broadening the Base of Treatment for Alcohol Problems (Washington, DC, National Academy Press).


TREATING ALCOHOL PROBLEMS

TREATING ALCOHOL PROBLEMS

W.R. Miller, M. Robertson, P. Rees

ADDICTIVE BEHAVIOURS


Alcoholism Treatment: Context, process and outcome (New York, Oxford University Press).


The formal evaluation of the clinical and cost effectiveness of the current treatment programme leads the researcher inevitably to a consideration of what factors are predictive of treatment outcome. Within the addiction treatment arena, two empirically based treatment decision approaches, (patient-treatment matching and "stepped care") attempt to provide guidelines that allow the clinician to recommend an appropriate and cost effective treatment. Patient-treatment matching has been defined as the "deliberate and consistent attempt to select a specific candidate for a specific method of intervention in order to achieve specific goals" (Glaser & Skinner, 1981, p302). Current research on matching assumes that specific client treatment matches can be determined at intake (Finney & Moos, 1986) and numerous post hoc analyses of client characteristics appear to be consistent with this assumption (eg, Cronkite & Moos, 1980; Mattson et al, 1994). The usefulness of intake variables as predictors for a specific treatment programme is thus a clinically important area of study.

Alternatively the stepped care or "treatment tiering" approach holds that the initial treatment of choice is the procedure that is least intrusive on the client's lifestyle, is efficient in terms of treatment resources, and is deemed to have a reasonable chance of being effective (Sobell & Sobell, 1993b). It provides treatment of different qualities or intensities depending on the client's response to the initial, least intrusive treatment. This multi-stage outcome based approach is cost effective because, as interventions become more extensive and costly, the proportion of cases needing each successive level of intervention is relatively small compared with the original population entering treatment (Sobell & Sobell, 1993b). Matching focuses on linking clients with certain pre-treatment characteristics to a specific treatment at assessment (ie, a 'cross-sectional' approach). Stepped care is a principle that is applicable over time and that is capable of linking together a series of matching decisions. The "longitudinal" perspective inherent in the stepped care approach leads to an emphasis on within-treatment, response-based criteria (in addition to client characteristics), to select interventions over the course of treatment.

The treatment decision-making model employed in the current treatment programme is an attempt to match clients according to the intensity of treatment needed. It is based only on some client intake criteria (established by research in other treatment settings), and is not formally extended to take into account on an ongoing basis within-treatment responses and variables.

In order to help maximise the effectiveness and cost effectiveness of treatment the value
of a range of intake and within treatment variables were examined in terms of their relationship to treatment outcome. The paper which follows examines intake variables as outcome predictors and was published as follows:

ALCOHOLISM TREATMENT: INTAKE VARIABLES AS OUTCOME PREDICTORS

CLIVE G. LONG\textsuperscript{a}, MARTIN WILLIAMS\textsuperscript{a} and CLIVE R. HOLLIN\textsuperscript{a, b}

\textsuperscript{a}St Andrew's Hospital, Billing Road, Northampton, NN1 5DG., \textsuperscript{b}University of Leicester, Leicester, LE1 7RH

The relationship between "background" variables (demographic, drinking and motivational) and outcome categorisation 12 months after treatment for problem drinking was assessed using multivariate statistical techniques. Patients classified as abstinent or problem-free drinkers after treatment had longer drink-free periods prior to treatment, drank in fewer situations and locations, and were more likely to have a goal of abstinence.

These findings are discussed in terms of the relapse prevention literature with the conclusion that in similar samples static or demographic variables alone are of limited use as predictors of outcome.

It has been stated that the main purpose for conducting follow-up studies is to extend our clinical knowledge so that by summarising findings at a point in time, we could ultimately satisfy our "eternal wish to predict the future" (Vandereycken & Meerman, 1992). However, given the multiplicity of variables that may determine an individual's response to treatment this ideal may never be realised with any degree of accuracy. Nonetheless, the patient factors, including biological, social and psychiatric variables, at start of treatment that are most consistently associated with post-treatment outcome include level of dependence (Babor, et al 1988), greater severity of alcohol use (McLellan, et al 1994), the presence of family and social support (Vaillant, 1988), and severity of psychiatric symptoms (McLellan, et al 1983; Rounsaville, et al 1987). Using statistical techniques (path analysis) to assess outcome predictors across studies, Costello (1980) estimated that 49\% of patient outcome variance could be explained by social stability (indexed by marriage and employment). This finding was echoed in the quantitative syntheses of 100 alcohol treatment studies by Monahan and Finney (1996). Other frequently cited social risk prognostic factors...
include life events (Moos, et al 1981), residential stability, higher status occupation, higher personal or family income (Westermayer, 1989), living with others, and social stability (Bromet & Moos, 1977; Vaillant, 1988). Perhaps not surprisingly, some of these variables, such as severity of dependence, are only moderate to weak predictors of treatment outcome (Chiauzzi, 1991). Schuckit et al (1986) also found that only a relatively small percentage of the outcome variance could be accounted for by intake variables in a 12 month outcome study of 464 alcoholics. Edwards, et al (1988) note that although the search for predictors of alcoholism treatment outcome goes back at least half a century, highly stable general predictors remain elusive.

To date, the oft repeated finding of the superiority of statistical over clinical prediction (Meehl, 1965; Sawyer, 1966) has led alcohol treatment researchers to focus on historical or static predictors of treatment outcome (Edwards, et al 1988). There are at least three reasons why findings have produced little agreement concerning prognostic factors. First, there are basic research problems such as small sample sizes, non-random assignment of clients to treatment conditions, and unreliable procedures for measuring prognostic indicators and treatment outcomes (Lindström, 1992). Indeed the low power to detect effects in any given study due to sample size has led to meta analysis or quantitative syntheses of data from a large number of studies (eg, Monahan & Finney, 1996).

The second difficulty is seen in the tendency to focus on static rather than dynamic or subjective predictors despite the potential predictive power of a combination of these (Hollin & Palmer, 1995). Thus, in the field of predicting recidivism, for example, evidence from meta analyses (Gendreau, et al 1995) shows that dynamic predictors are as useful as statistical. In the alcoholism treatment field subjective or cognitive factors which have been found to be predictive include goal choice, pre-treatment self-efficacy (Rychtarik, et al 1992; Solomon & Annis, 1990), expectancies (Brown, 1985), the individual's own prediction of the probability that he or she would drink again (Chapman & Huygens, 1988), and his or her own subjective estimation of their degree of dependence on alcohol (Heather, et al 1983).

A third reason for the failure to find stable predictors of treatment outcome may be statistical. If multivariate statistical techniques (Ornstein & Cherepon, 1985) replace the usual predictive approach of running individual intake variables against a range of outcome variables, it has proved
possible to find significant predictors. In a 10 year follow-up study of 99 male married alcoholics, using a principal components analysis, it was found that those who did well at outcome (i.e., in terms of lower drinking and general markers of good non-drinking adjustment) showed at intake higher occupational status, a lower trouble score, lower neuroticism, and less experience of parental cruelty in childhood (Edwards, et al 1988).

In view of these more encouraging findings, the primary aim of the current research is to apply multivariate statistical techniques to the analysis of data concerning the relationship between intake variables and outcome following treatment for problem drinking. This, therefore, includes an examination of demographic (static), motivational (dynamic), and drinking factors to determine their relationship to outcome categorisation.

METHOD

Participants and Procedure

The sample population (n = 212) was composed of 136 males (64.2 %) and 76 females (35.8 %) admitted to a treatment unit for problem-drinking. Their mean age at intake was 45.0 years (SD = 10.7), 140 (66.0 %) were in full-time or part-time employment; 24 people (11.3 %) were unemployed; and 48 (22.6 %) were retired or homemakers. One hundred and thirty-five people (63.7 %) were married and living with their partner, 43 (20.3 %) were separated or divorced, 4 (1.9 %) had been widowed, while 30 (14.2 %) were single and had never been married. As assessed by the Severity of Alcohol Dependence Questionnaire (SADQ; Stockwell, et al 1979), they were moderately dependent on alcohol with a mean score of 24.15 (SD = 10.06).

At one year after discharge from the addiction unit, 189 of the original 212 participants (89.2 %) were contacted and interviewed to determine their progress following treatment. The main reason for attrition was lost contact through change of address, although three people no longer wanted to be involved in the study. The 23 participants with whom contact was lost did not have greatly different characteristics to the original sample: 9 (39.1 %) were female; 14 (60.9 %) were in full-time employment; 12 (52.5 %) were married and living with a partner; their mean age was 44.3 years.
and their mean intake SADQ score was 20.45 (SD = 10.96). There were no deaths during the first year after discharge from treatment.

Setting

The study was conducted at an independent not-for-profit hospital which provides a brief (2 week) in-patient detoxification and day patient treatment programme. Details of the research based therapeutic treatment programme, which includes the concept of matching patient to treatment (Lindström 1992), are contained in a previous publication (Long et al 1995).

Measures

A large data set was collected for each participant at intake using the Comprehensive Drinkers Profile (CDP; Miller & Marlatt, 1984). The CDP is a highly structured interview of items organised systematically to collect objective and subjective information classified as 'demographic', 'drinking' and 'motivational'. Items from the motivational section cover reasons for drinking, effects of drinking, life and alcohol-related problems, use of outside help together with goal choice and perceived choice of achieving this goal, whether alcoholism was a disease or a bad habit, and the participants' ratings of the drinking habits of themselves, their spouse and a friend. Items from the 'drinking' section cover drinking history, drinking locations and situations, and the use of other drugs. Level of dependence on alcohol was assessed by the SADQ (Stockwell, et al 1979). Demographic items cover age, sex, family history of alcohol, drug or psychiatric problems, occupational status, time in a job, recurrent unemployment, forensic complications, health (recurrent mental and physical problems or history of), educational details, marital status and marital problems, childhood problems, financial problems and living arrangements.

Measures used to determine outcome at 6 and 12 months follow-up included the Follow-Up Drinkers Profile (FDP; Miller & Marlatt, 1987), the Collateral Interview form (CIF; Miller & Marlatt, 1987), the SADQ (Stockwell, et al. 1979), serum-gamma-glutamyl-transpeptidate (GGT), and mean cell volume (MCV) blood tests (Chick, et al. 1981).
RESULTS

Drinking outcome at follow-up

Those participants contacted at follow-up were classified as being either abstinent or nonproblem drinkers, drinking but improved, or unimproved according to the strict criteria for outcome status, defined by Heather & Tebbutt (1989), and subsequently used by Miller, et al (1992). In this system the primary determinant of outcome status is alcohol-related problems and signs of dependence. Measures used to determine outcome classification included the FDP (Miller & Marlatt, 1987), which provides data on alcohol-related problems, and the SADQ (Stockwell, et al, 1979).

a. **Abstinent**: Absence of alcohol-related problems and dependence throughout the follow-up period. Alcohol consumption level includes totally abstinent and mostly abstinent (up to 5 'slips' in the preceding 6 months) categories. A slip was defined as drinking any amount within a 24 hour period on 5 or fewer occasions (days) (36.0% of participants).

b. **Non-Problem Drinker**: Absence of alcohol-related problems and dependence. Alcohol consumption level includes controlled drinking (never drinking to intoxication), and mostly controlled (no more than 5 slips) in the preceding 6 months. A slip was defined as drinking to intoxication (96g of absolute ethanol or more) within a 24 hour period (10.6% of participants).

c. **Drinking but Improved**: A reduction of one-third or more in terms of alcohol-related problems, level of dependence, and alcohol consumption (26.5% of participants).

d. **Unimproved**: Same, worse or dead (27.0% of participants).

As a check for reliability of the self-reported information, a subgroup of 88 people self-reported abstinence or non-problem drinking was checked against both collateral informant and blood test data. Cross-checking by this method confirmed the outcome categorisation which is given in Table I.

<table>
<thead>
<tr>
<th>Remitted</th>
<th>Frequencies (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstinent or mostly abstinent</td>
<td>68 (36.0 %)</td>
</tr>
<tr>
<td>Non-problem drinker</td>
<td>20 (10.6 %)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relapsed</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Drinking but improved</td>
<td>50 (26.5 %)</td>
</tr>
<tr>
<td>Unimproved</td>
<td>51 (27.0 %)</td>
</tr>
<tr>
<td>Total</td>
<td>189 (100.0 %)</td>
</tr>
</tbody>
</table>
Intake Measures and Drinking Outcome

Univariate Analysis

One hundred and eight static/demographic and 13 dynamic/motivational intake variables were selected from the full CDP on the basis that at least one previous research study had related them to outcome. Full CDP data were available for 170 clients. A preliminary examination of the 121 intake variables revealed only ten variables that showed significant differences between remitted (abstinent or non-problem drinking) and relapsed (drinking but improved and unimproved) outcome groups. Tables II and III show ANOVA and chi-square data for these variables.

### Table II

<table>
<thead>
<tr>
<th></th>
<th>Remitted (N = 81)</th>
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<th>Significance</th>
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<tbody>
<tr>
<td>Longest drink free period (days)</td>
<td>64.77 (65.93)</td>
<td>32.08 (51.31)</td>
<td>13.138</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Total number of drinking situations</td>
<td>2.79 (1.46)</td>
<td>3.83 (1.82)</td>
<td>16.725</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Total number of drinking locations</td>
<td>2.77 (1.58)</td>
<td>3.80 (1.71)</td>
<td>16.617</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

*Univariate F Ratio with 1 and 168 degrees of freedom.

### Table III

<table>
<thead>
<tr>
<th></th>
<th>Remitted (N = 81)</th>
<th>Relapsed (N = 89)</th>
<th>Pearson chi-square statistic</th>
<th>2-sided significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
<td>Yes Yes No No</td>
<td>Yes Yes No No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>57 24</td>
<td>49 40</td>
<td>4.237 &lt;.05</td>
<td></td>
</tr>
<tr>
<td>Drinks at social events</td>
<td>26 55</td>
<td>46 43</td>
<td>6.663 &lt;.01</td>
<td></td>
</tr>
<tr>
<td>Drinks in restaurants</td>
<td>28 53</td>
<td>48 41</td>
<td>6.433 &lt;.05</td>
<td></td>
</tr>
<tr>
<td>Drinks in specified other places</td>
<td>9 72</td>
<td>29 60</td>
<td>11.266 &lt;.001</td>
<td></td>
</tr>
<tr>
<td>Drinks with spouse</td>
<td>29 52</td>
<td>47 42</td>
<td>4.962 &lt;.05</td>
<td></td>
</tr>
<tr>
<td>Drinks with strangers</td>
<td>14 67</td>
<td>32 57</td>
<td>7.490 &lt;.01</td>
<td></td>
</tr>
</tbody>
</table>

| Drinking goal    | Yes Yes No No      | Yes Yes No No      | 19.665 <.001                |

74
Repeated group comparisons with large numbers of variables gives rise to high probabilities of Type 1 errors. Adjusting the critical value ($p < 0.5$) by the Bonferroni method gives a new significance value of $p = 0.0004$. This much stricter criterion for significance is met by four of the variables, suggesting robust group differences for the following: (i) longest drink-free period; (ii) total number of drinking situations; (iii) total number of drinking locations; (iv) drinking goal.

**Multivariate Analysis**

The sample of 170 participants was split into a 60% ($n = 102$) analysis subsample and a 40% ($n = 68$) holdout subsample. A proportionately stratified sampling procedure was employed so that remitted and relapsed outcome groups were equally represented in the two subsamples.

A stepwise logistic regression of the analysis subsample was performed with static/demographic variables entered together in block 1 and dynamic/motivational variables entered in block 2. The model derived contained three static/demographic variables (longest drink-free period, total number of drinking situations and total number of drinking locations) and one dynamic/motivational variable (drinking goal). These were the same highly significant variables suggested by the univariate analyses.

To assess the predictive classification accuracy of the model, the derived solution from the analysis subsample was then applied to the holdout group. The model correctly classified 82.4% of the analysis group and 75.3% of the holdout group.

The classification rates for the analysis and holdout subsamples were both substantially higher than the proportional chance criterion (50.11%) and the maximum chance criterion (52.35%). An additional measure of classification accuracy is given by Press' $Q$. For the analysis sample $Q = 42.7$ and for the holdout sample $Q = 17.0$: the critical value of $Q$ for significance at the .01 level is 6.63. Thus, the classification accuracy for the analysis sample and, more importantly, that of the holdout sample, exceed at a statistically significant level the accuracy expected by chance.

**DISCUSSION**

Many investigators (e.g., Brown, 1985; Finney & Moos, 1992) have commented on the absence of a consistent relationship between treatment
intake variables and treatment outcome. However, like Elal-Lawrence, et al (1986), the current study found treatment outcome to be predicted by longer previous drink-free (abstinence) periods. Other findings highlight the fact that 'successful' patients had an abstinence goal and described drinking in fewer different situations and locations. Furthermore, these variables remained predictive even when subjected to the most conservative statistical procedures.

Many problem drinkers indicate that they would prefer to select their own treatment goals, and self-selection of these goals may increase motivation to achieve them (Sobell, et al 1992). The finding that patients who chose an abstinence goal for themselves did better than those who opted to drink less appears at first sight to diminish the importance of goal choice. One possible explanation is that those opting for a reduced drinking goal included those whose personal definition of controlled drinking continued to result in alcohol related problems and who therefore fell outside the categories defined by Heather & Tebbutt (1989). In other words, these clients may have achieved their drinking goal but not met the criteria for remitted outcome status. A more likely explanation is that the characteristics and age of the sample suggest that an abstinence goal would be more likely to be associated with a successful outcome (Polich, et al 1981; Foy, et al 1984; Heather, 1987).

Results across a number of studies (Monahan & Finney, 1996; Miller, 1992) also found that in their treatment follow-up abstainers were more likely initially to have had a goal of abstinence. The additional finding of Miller, et al (1992), that symptomatic drinkers had had a reduced drinking goal and were less alcohol dependent, was not echoed in the current study which dealt with a more dependent sample and which had a higher rate of follow-up. Severity of dependence did not predict outcome in the current study. The results therefore support the notion that there is not a reverse relationship between severity of dependence and the likelihood of controlled drinking outcomes (McCabe, 1986; Nordström & Bergland, 1987; Rychtarik, et al 1987).

That successful patients reported drinking in fewer different situations and locations may indicate that they had fewer "high risk" situations (ie those which threatened their perceptions of control) to deal with post-treatment, and that their relapse potential was correspondingly lowered (Marlatt & Gordon 1985). This idea is supported by research showing that patients who avoid high risk situations in the early weeks post-treatment...
are less likely to relapse (Litman, et al 1979). However, the explanatory predictive power of the presence of high risk (alcohol related) situations may well be increased by reference to subjective variables such as situational confidence or self-efficacy (eg Annis & Graham 1988), in the same way that objective symptoms of dependence may be no more or less predictive of relapse than subjective judgements (Heather et al 1983). Indeed, an increasingly fruitful line of enquiry for addiction researchers wishing to predict outcomes lies within interpersonal factors such as therapist empathy (eg Miller & Baca 1983) as well as interpersonal factors such as self-efficacy (Rychtarik, et al 1992).

The failure of the study to support the most robust finding from previous syntheses of alcoholism outcome studies (the association between social stability and favourable outcome noted by Costello, 1985, and Monahan Finney, 1996) may be best explained by sample characteristics: two thirds of a relatively small sample were married, in employment and well educated. This combination of characteristics within the majority of the study population may have obscured the contribution of this variable to outcome.

The current findings support the view that clinicians who wish to form a likely indication of outcome with similar socially stable populations need not rely on 'static' or demographic variables. In moderately dependent samples, numbers of drinking situations and locations, longest drink-free period and goal choice (ie, a mixture of static drinking and dynamic variables), may help to identify most readily those more at risk of relapse and therefore potential candidates for additional therapeutic input.

References


In a subsequently oft quoted paper, Moos and Finney (1988) highlighted that while traditional evaluation paradigms for alcoholism outcome research frequently examined intake variables in terms of their relationship to outcome, the majority of published work had continued to use a ‘black-box’ paradigm. Evaluators assessed clients at intake and at one or more follow-ups, but paid little attention to the process of treatment (the black box), or to other factors that might affect the client, despite research that relates psychotherapy process variables to treatment outcomes (Orlinsky et al, 1995). Accordingly studies of this type offered little information about either the effects of specific treatment components or how to make treatment more effective.

Therapy process research is “the study of the interactions between the patient and therapist system. The goal of process research is to identify the change processes in the interactions between these two systems” (Greenberg & Pinson, 1986). However, this area remains in a “pre-paradigmatic stage of development” (Greenberg, 1986), and certain major treatment process variables, such as, for example, the “responsiveness” that therapist and client show towards one another, have been overlooked (Stiles & Shapiro, 1994). The “helping alliance” (DeRubeis & Feely, 1990) and the “therapeutic relationship” (Shapiro, 1995), however, are clearly a function of both therapist and client characteristics. A recent emphasis on this area is evident in the reports of the Project MATCH (Project MATCH Research Group, 1997; Connors et al, 1997; DiClemente et al, 1994), where two of the major conceptual domains examined are within-session treatment interventions and the therapeutic relationship. This focus on process has been paralleled generally by a movement away from ‘static’ to ‘dynamic’ (or ‘clinical’) predictors of treatment outcome (Hollin & Palmer, 1995).

Moos and Finney’s (1988) review of treatment delivery and processes, divides the treatment domain into five categories: (1) general programme factors (physical features: organisation and policy factor: aggregate patient characteristics and treatment climate; (2) characteristics and functioning of the staff (eg, therapist empathy); (3) work milieu; (4) treatment components or services offered, including patients’ participation and their initial reactions to treatment; (5) patient satisfaction. Of the many process variables subsumed under these headings, focus was given in the current study to the predictive value of the therapeutic alliance and other previously researched factors, including pre-treatment expectations; patient treatment evaluation; patient satisfaction; and the treatment climate.

The results of this analysis of the current data set have been published as follows:
WITHIN PROGRAMME FACTORS AS PREDICTORS OF DRINKING OUTCOME
FOLLOWING COGNITIVE-BEHAVIOURAL TREATMENT

Clive G. Long, St Andrew's Hospital, Northampton, NN1 5DG, U.K.

Martin Williams, St Andrew's Hospital, Northampton, NN1 5DG, U.K.

Marie Midgley, St Andrew's Hospital, Northampton, NN1 5DG, U.K.

Clive R Hollin, Centre for Applied Psychology, University of Leicester,
Leicester, LE1 7RH, U.K.

Corresponding Author:
Dr C G Long
St Andrew's Hospital
Billing Road
Northampton, NN1 5DG
United Kingdom
Tel: 01604 616182
Fax: 01604 635571
ABSTRACT

The relationship between a variety of within-treatment factors and the outcome of treatment for alcoholism was examined. One hundred and twenty eight male and sixty-eight female participants (consecutive referrals with an ICD 10 diagnosis of alcohol dependence syndrome) were followed at 12 months following in- and day-patient cognitive behavioural treatment on an addiction unit. Within-treatment factors (of self-efficacy, psychological symptoms, expectations for treatment, treatment satisfaction, treatment climate, therapeutic alliance, and treatment evaluation), were assessed to determine their relationship to global outcome categorisation into abstinent, non-problem drinker, drinking but improved, and unimproved participant groups. A logistic regression analysis identified five variables that were predictive of a more favourable outcome: higher self-efficacy in positive social situations, greater treatment programme involvement, a lower perception of staff control, a greater perception of treatment as helpful, and a reduction in psychological symptoms during treatment. Findings confirm previous research that pinpoints the importance of self-efficacy as a treatment variable of significance in treatment planning and delivery. It also highlights the prognostic significance of a reduction in psychological distress and, thus, the value of dynamic predictors of treatment outcome. The failure of the therapeutic alliance to predict outcome is discussed. It is concluded that time limited alcoholism treatment programmes need to give equal emphasis to within-treatment change via the promotion of patient confidence and the perception of helpfulness, as well as to skill-based relapse prevention strategies.
INTRODUCTION

As in psychotherapy generally (Muran, Gorman, Safran, Twining, Samstag & Winston, 1995), alcoholism treatment research has moved increasingly away from a focus on answering the question "Does treatment work?" to a more specific focus on 'Process' measures that assess the impact of treatment on those intervening variables that are hypothesised to mediate the relationship between treatment and outcome (DiClemente, Carroll, Connors & Kadden, 1994). Despite the low rates of treatment process analysis in alcoholism treatment outcome studies (Morley, Finney, Monahan & Floyd, 1996), variables that have received research attention in terms of their relationships to treatment outcome include: the therapeutic alliance (eg Project Match Research Group, 1997); the extent to which client pre-treatment expectations are met (eg Brown & Miller, 1993); patient treatment evaluation (Wanberg & Horn 1977); patient satisfaction (eg Larsen, Attkinsson, Hargreaves & Nguyent, 1979); self-efficacy (Burling, Riley, Molteen & Ziff, 1989) and psychological symptoms (La Bounty, Hatsukami, Morgan & Nelson, 1992). and the treatment climate (Moos, Finney & Cronkite, 1990). Such process variables may well act in a complex, interactive manner. For example, the Project Match Group (Connors, Carroll, DiClemente, Longabaugh & Donovan, 1997) found that ratings of the working therapeutic alliance were significant predictors of treatment participation and drinking behaviour at 12 month follow-up, this did not apply in the aftercare group who had previous in-patient help.

The aim of the current study was to explore the relationship between key dynamic within-treatment variables and treatment outcome with problem drinkers, in view of the evidence that there may be a stronger relationship between common factors of psychotherapy such as therapeutic alliance and outcome than between specific ingredients and outcome (Carroll, Nich & Rounsaville, 1997. Specifically, it was hypothesised that abstinence or non-problem drinking at follow-up would be associated with: (a) level of psychiatric symptomatology; (b) within-treatment reduction in psychological symptoms; (c) level of self-efficacy; (d) within-treatment improvement in self-efficacy; (e) confirmation of patients' expectations about treatment; (f) patient satisfaction with treatment; (g) patients' assessment of positive therapeutic alliance; (h) patients' evaluation of the treatment environment; (i) patients' emotional responses to treatment; (j) patients' involvement in treatment.
METHOD

Participants

Participants (N=188) were 120 males (63.8%) and 68 females (36.2%) who were consecutive admissions to a cognitive behavioural addiction unit therapy programme. There were no refusals to participate. All participants were white and had an ICD-10 diagnosis of alcohol dependence syndrome (World Health Organisation, 1992). The mean age of the group was 45 years (SD=10.7), 140 (66%) were in full or part-time employment, and 135 (63.7%) were married and living with their partners. Participants were moderately dependent on alcohol as indicated by a mean score of 24.2 (SD=10.1), on the Severity of Alcohol Dependence Questionnaire (SADQ; Stockwell, Murphy & Hodgson, 1983). Participants drank on a mean 95.27% of available days and their intensity of drinking (number of units equivalent to 8g of pure alcohol in the previous six months divided by the number of actual drinking days) was 18.77 (SD 11.72).

Procedure

The cognitive behavioural treatment programme provided individual counselling and a core group therapy for patients who received a combination of in- and day-patient care (Long, Williams & Hollin, 1995). Following treatment (average length of in/day-patient stay = 16.1 days), participants were followed up at 12 months.

Assessment Instruments:

Intake measures included the Drinkers Profile (CDP, Miller & Marlatt 1984).

Within-treatment measures included the Situational Confidence Questionnaire (SCQ-39; Annis & Graham 1988); the Expectations Questionnaire (Brown & Miller, 1993); the General Health Questionnaire (GHQ 12; Goldberg & Williams, 1988); the Community Oriented Programme Environment Scale (COPES; Moos 1988); the Client Satisfaction Questionnaire (CSQ-8; Larsen, Attkinsson, Hargraves & Nguyen, 1979); the Working Alliance Inventory (WAI; Horvath & Greenberg, 1986); the Patient Treatment Evaluation Questionnaire (PTEQ; Wanberg & Horn, 1977).

Follow-up measures included: the Follow-up Drinkers Profile (FDP; Miller & Marlatt 1987). Self-report was corroborated by using the Collateral Interview Form (CIF; Miller & Marlatt 1987) and blood test data: serum-gamma-glutamyl-transpepsidase (GGT) and mean cell volume (MCV) were used as recommended markers of alcohol intake (Chick, Kreikman & Plant, 1981).
Outcome Classification

Participants contacted twelve months after discharge were classified as being abstinent, non-problem drinkers, drinking but improved or unimproved according to criteria developed by Heather and Tebbutt (1989). Individuals' self-report was compared with data provided by a significant other using the CIF (Miller & Marlatt, 1987), and with blood test data (MCV & GGT, Chick, et al, 1981). The classification was performed independently by two raters. Inter-rater reliability was high (Cohen's Kappa = 0.98).

RESULTS

Drinking Outcome At Follow-Up

Of the original sample of 188 participants, contact was made with 170 (90.4%). Classification of drinking outcome revealed that 60 individuals were abstinent (35.3% of those contacted), 21 (12.4%) were non-problem drinkers, 43 (25.3%) were drinking but improved and 46 (27.1%) were unimproved. There were no deaths during the follow-up period.

Intake Questionnaire Scores and Drinking Outcome

There were no differences between outcome groups at baseline in terms of demographic and drinking variables as assessed by the CDP (Miller & Marlatt, 1984). Values for intake and discharge questionnaires and change scores for repeated measures were examined to determine any differences between the four outcome groups. Comparison of each variable across the four groups, revealed nine measure with significant between-group differences. Intake mean SCQ-39 score (Jonckheere-Terpstra statistic = -2.12 p< 0.05), three SCQ-39 subscales, the ‘Positive Social Situations’ (Jonckheere-Terpstra statistic = -2.30 p< 0.05); ‘Testing Personal Control’ (Jonckheere-Terpstra statistic = -2.40 p< 0.05); ‘Urges and Temptations’ (Jonckheere-Terpstra statistic = -2.25 p< 0.05); the ‘Involvement’ and the ‘Staff Control’ subscales (Jonckheere-Terpstra statistic = -2.80 p< 0.01; Jonckheere-Terpstra statistic = -2.81 p< 0.01). Of the COPES questionnaire, two primary PTEQ scales ‘Treatment Perceived Helpful’ (Jonckheere-Terpstra statistic = -3.08 p< 0.01); ‘Confident and Hopeful’ (Jonckheere-Terpstra statistic = -2.73 p< 0.01) and change in GHQ-12 score over treatment (Jonckheere-Terpstra statistic = -3.33 p < 0.01), were found to differ significantly across the outcome groups at follow-up. The
strongest predictor of drinking outcome found by univariate analysis was change in GHQ-12 score over the treatment period. A Chi-square test revealed that participants showing a reduction in GHQ-score were significantly more likely to have a favourable drinking outcome (abstinence or non-problem drinking) than participants with no change or a rise in their GHQ-12 score during treatment (Pearson Chi-square = 17.07, df = 3, p < .001).

No significant results were found for any of the scale items or change scores for the WAI, Expectations Questionnaire, or the CSQ-8.

**Logistic Regression Analysis**

The four outcome categories were collapsed into remitted drinking (abstinent or non-problem drinking) and relapsed drinking (drinking but improved or unimproved) groups. The dichotomous outcome state was entered as the dependent variable in a forward LR multiple logistic regression analysis. This modelling identified five predictors of drinking outcome: change in GHQ-12 score over treatment (Wald Statistic = 7.31 p = 0.007 standardized regression coefficient = .404); SCQ-39 – 'Positive Social Situations' (Wald Statistic = 5.46 p = .019 standardized regression coefficient = .041) PTEQ – ‘Treatment Perceived Helpful’ (Wald Statistic = 2.58 p = 0.98 standardized regression coefficient = .175); and COPES – ‘Involvement’ (Wald Statistic = 3.63 p = .057 standardized regression coefficient = .301); and ‘Staff Control’ (Wald Statistic = 3.78 p = .052 standardized regression coefficient = .352). This model correctly classified the drinking outcome of 131 of the 170 participants (77.1%).

The classification rate was substantially higher than the proportional chance criterion (50.11%) and the maximum chance criterion (52.35%). For this model Press’s Q was calculated as 49.79. Since the critical value of Q for significant at the .01 level is 6.63, the classification accuracy was statistically significant.

**DISCUSSION**

Taken together, the current findings suggest that there is a relationship between process variables and treatment outcome. Abstinence or non-problem drinking was associated with both total intake self-efficacy scores and with three subscales of the SCQ-39, and with greater confidence and hopefulness about a successful treatment outcome as measured by the PTEQ. These findings agree with previous research that pinpoints the
importance of self-efficacy as a treatment variable of significance in treatment planning and delivery (Long, Hollin & Williams, 1998; Rychtarik, Prue, Rapp & King, 1992).

A more positive treatment outcome was also associated with a higher degree of perceived involvement in the day to day functioning of the treatment programme (COPES), a lessened sense of staff control (COPES), and a more positive view of treatment as helpful (PTEQ). This accords with previous work with problem drinkers showing that patients who perceive therapy as helpful have a good outcome (Lovett & Lovett, 1991). The failure of the clients' view of their working alliance (as measured by the WAI) to predict outcome is consistent with the findings of Project Match researchers (Connors, et al, 1997) where the predictive value of the therapeutic alliance did not obtain for patients who had first undergone in-patient treatment. Although there are difficulties with problem drinkers in interpreting the occurrence of psychological symptoms because of their likely overlap with withdrawal symptoms (Allan, 1991), the association of a good outcome with a reduction in GHQ-12 score over treatment is consistent with the finding that emotional responses during treatment (feeling confident and hopeful as measured by the PTEQ) are also predictive of positive treatment outcome. Similarly, the results of a large scale naturalistic study (Quimette, Finney & Moos, 1997) also found overall patient improvement 1 year after treatment to be paralleled by a clinically significant reduction in anxiety and depression.

It may be that the best dynamic predictors of treatment outcome are those which are apparent during and at the end of treatment, which is allied to the view that it is the patient's own brief subjective evaluation of their response to treatment; (Heather, et al, 1983) that is most predictive of complex treatment outcome. Thus, variables assessed during therapy reflecting initial subjective reactions to treatment may be more predictive of outcome than pre-treatment data (Priebe & Gruytens, 1995). Previous research (Long, Williams & Hollin, 1998) found that only an abstinence drinking goal and lower number of drinking locations were associated with better outcome. Taken together, these findings have implications for the design of time limited alcoholism treatment programmes, suggesting an emphasis on within-treatment change via the promotion of patient confidence and perception of helpfulness, as well as to skill-based relapse prevention strategies.
ACKNOWLEDGEMENTS

We would like to acknowledge the help and support of our colleagues on the Thomas Prichard Addiction Unit, St Andrew’s Hospital. In particular, the unit’s Director, Dr Tim Kidger, and therapists Ken Marriott, Ellen Banyard, Fay Baker, Ann Coward and Marion Fox.
REFERENCES


The preceding study provides further evidence of the complexities of the relationship between process, technique and outcome in psychotherapy (Stiles & Shapiro, 1994). Recent work suggests that where common factors of treatment are the “active ingredients”, variations in levels of those dimensions may predict outcome. Further, the relationship between common and unique process and outcome in active psychotherapies such as cognitive behavioural treatment (of the sort employed in this study) may be different (Caroll et al, 1997).

However, the failure of the current study to find a positive association between working alliance (as measured by the WAI) and treatment outcome, requires further explanation. First, the WAI may not measure a clinical aspect of the therapeutic alliance. Specifically it does not load heavily on the ‘confident collaboration’ factor, which has a robust relationship to the patients’ estimate of improvement. Second, client characteristics such as alcohol dependence, neuropsychological status and previous alcoholism treatment may have over-shadowed the impact of the working alliance or its development (Connors et al, 1997).

Currently, the field of treatment process research lacks what Milne and Sheikh (1999) describe as an integrative metaphor (based on a hierarchical analysis of existing metaphors), that will help integrate findings and unify different models of change. Thus for example, there may be a relation between a “client’s belief in treatment” (Shapiro, 1995) and the “therapeutic environment” (Wisman, 1994). Such a comprehensive picture might subsume “cognitive restructuring” (Zeitle & Hayes, 1987) as a mechanism of change which may, in turn, subsume “confrontation challenge” (Shapiro, 1995), itself subsuming therapist “persistence” (Padesky, 1994). Milne and Sheikh (1999) therefore, proposed that the use of an appropriate integrative metaphor could bring greater clarity to the cause and effect formulations.
CHAPTER FIVE:

STATIC VERSUS DYNAMIC
PREDICTORS OF OUTCOME
The preceding studies of intake and process variables that impact upon treatment, illustrate further how few consistent predictors of change there are within the field of problem drinking. The question of why individuals with fully established addictions turn away from their addiction remains a partially explained enigma. Many studies show outcome differences between those that do or do not receive a particular treatment (Miller et al, 1995). After a treatment event, healthcare costs tend to go down dramatically (Holder & Blose, 1992). The longer a person stays in treatment the better he or she fares (eg, Finney, Moos & Chan, 1981; Pettinati et al, 1996). However, the explanation that "people change because they get treatment" is wanting in several ways (Humphreys, Moos & Cohen, 1997). Many people who change addictive behaviour do so without treatment. Although the seeking of help may be a signal event motivationally, the dose of treatment received, when studied experimentally has shown little relationship to outcomes. The style of interaction between counsellor and client appears to have a substantial ability to accelerate or impede the natural change process (cf the effect of brief motivational interventions). Further "treatment" is anything but a homogeneous phenomena (Institute of Medicine, 1990) and attributes of treatment represent only one class of determinants of client outcome (Moos, Finney & Conkite, 1990). Treatment appears to be neither a necessary nor a sufficient condition for change.

The transtheoretical model of Prochaska and colleagues and its attendant stages and processes have been widely used as a heuristic for understanding change (Prochaska et al, 1992). The model is predominantly descriptive and transtheoretical and is more directed toward how than why people change. Concepts of theoretical importance such as self-efficacy and the relative balance of pro's and con's for change have been studied in relation to progression through the stages. Bandura's (1977) construct of self-efficacy (the individual's belief in his or her ability to change) has figured prominently in health belief models such as the protection motivation theory of Ronald Rogers (Rogers & Prentice-Dunn, 1997) and has been central in various alcohol treatment approaches. Indeed, expectations about the effects of alcohol (alcohol expectancies) and one's perceived ability to resist drinking (drinking refusal self-efficacy) are an integral part of social learning formulations of alcohol use and misuse. Self-efficacy has also been used as a key variable in predicting change with treatment.

The evidence supporting the role of self-efficacy in alcohol consumption is somewhat sparse but convincing. Heather et al (1983) for example, found that beliefs about personal drinking problems were directly related to relapse after treatment, and Burling et al (1989) showed a relationship between abstainers and high drink refusal self-efficacy.
Researchers have also found that low refusal self-efficacy is related to higher consumption levels in non-treatment populations (Hays & Ellickson, 1990). To date there has been limited work to assess the relative value of drink refusal self-efficacy and alcohol expectancies in terms of their association with treatment outcome. The paper that follows compares these two cognitive variables with alcoholics’ fantasies in view of recent research, highlighting the interaction between these and expectancies. The results were published as follows:

Self-Efficacy, Outcome Expectations, and Fantasies as Predictors of Alcoholics’ Posttreatment Drinking

Clive G. Long, Ph.D.,1* Clive R. Hollin, Ph.D.,2 and Martin J. Williams, B.Sc.1

1St. Andrew's Hospital, Northampton, United Kingdom
2University of Leicester, Leicester, United Kingdom

ABSTRACT

The usefulness of distinguishing between alcoholic patients' expectations and their fantasies about treatment outcome was examined. Results at 6 and 12 months follow-up did not support the results of research with nonalcoholic participants which related better outcomes to a combination of positive expectations and negative fantasies about future drink-related situations. Higher self-efficacy expectancy at intake, however, was associated with better clinical outcome. Findings supported Bandura's (1986) contention that outcome expectations add little information on prediction beyond that explained by self-efficacy expectancy. The clinical implications of these results are discussed.

Key words. Self-efficacy; Expectations; Fantasy; Alcoholism

*To whom correspondence should be addressed at St. Andrew’s Hospital, Northampton, NN1 5DG, United Kingdom. Telephone: (01604) 29696.
INTRODUCTION

There is a good deal of evidence within the field of problem drinking that demonstrates the importance of patient expectations in determining subsequent behavior and, in particular, the outcome of treatment (Hodgson, 1991). Bandura's self-efficacy theory is concerned largely with expectancies for success but provides a distinction between outcome expectancy (a belief about the probability that a specified course of action will lead to a particular outcome) and self-efficacy expectancy (a belief about one's ability to execute a specified course of action). Self-efficacy expectancy is presumed to have the more powerful influence on behaviour (Bandura, 1977), and this has some research support within the field of alcoholism treatment (Solomon and Annis, 1990).

While self-efficacy theory can provide a unifying mechanism to account for the changes brought about by psychological therapy (Bandura, 1977, 1994), the evidence for the predictive power of self-efficacy expectancy in predicting treatment outcome with substance misusers is mixed (see Tables 1a and 1b).

In smokers, Baer et al. (1986) found that posttreatment self-efficacy no longer predicted outcome when smoking behavior during treatment was controlled. In alcoholics, Goldbeck et al. (1997) found end-of-treatment self-efficacy to be predictive of abstinence at 3 months follow-up, but McKay et al. (1993) found that posttreatment self-efficacy predicted drinking only in patients who did not get further treatment in the form of aftercare. Two further studies (Burling et al., 1989; Rychtarik et al., 1992) failed to find a relationship between self-efficacy at discharge and drinking outcome. In Burling et al.'s (1989) study of alcoholics and substance misusers, it was found that pre- to posttreatment increases in self-efficacy predicted abstinence during a 6-month follow-up, but higher end-of-treatment self-efficacy did not. Rychtarik et al. (1992) found that problem drinkers with high self-efficacy at the start of treatment showed the greatest resistance to relapse at 12 months follow-up, while self-efficacy at discharge was not related to outcome. However, in a follow-up study of 43 outpatient opiate addicts that incorporated the client's own subjective predictions of clinical prognosis (self-efficacy expectancy and outcome expectancies), Powell et al. (1993) found that those with lower self-efficacy expectancy and higher positive outcome expectations (assessed at the start of treatment) were using opiates less often.

These apparent contradictions between studies can be partially explained by a number of factors. These include the use of different measures of self-efficacy between studies and different indicators of outcome (e.g., days abstinent or quantity consumed) and also the presence of ceiling effects in self-efficacy data (Annis and Davis, 1988). The latter are consistent with the unrealistically high expectations for success often seen in clients at the time of discharge from treatment facilities (Rychtarik et al., 1992). Indeed, it may be that many clients with lower
Table 1a.

Self-Efficacy, Expectancy, and Substance User Treatment Outcome: Selected Parameters, Processes, and Studies

<table>
<thead>
<tr>
<th>No.</th>
<th>Country</th>
<th>Author(s)</th>
<th>Year</th>
<th>Sex of subjects</th>
<th>Mean age (years)</th>
<th>N</th>
<th>Substance(s) used pattern</th>
<th>Substance(s) misuse</th>
<th>Average duration of substance misuse</th>
<th>Follow-up</th>
<th>Treatment type</th>
<th>Average length of treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>USA</td>
<td>Baer et al.</td>
<td>1986</td>
<td>Male and female</td>
<td>30</td>
<td>146</td>
<td>Tobacco</td>
<td>25.5 cigarettes per day</td>
<td>22 years</td>
<td>1, 2, 3, and 6 months</td>
<td>outpatient group therapy</td>
<td>6 weeks</td>
</tr>
<tr>
<td>2</td>
<td>USA</td>
<td>Burling et al.</td>
<td>1989</td>
<td>Male</td>
<td>33</td>
<td>81</td>
<td>Alcohol, cocaine, heroin</td>
<td>Alcohol</td>
<td>12 years</td>
<td>1 and 3 months</td>
<td>Inpatient therapeutic community with cognitive behavioral treatment</td>
<td>7.8 weeks</td>
</tr>
<tr>
<td>3</td>
<td>Scotland</td>
<td>Goldbeck et al.</td>
<td>1993</td>
<td>Male and female</td>
<td>44</td>
<td>72</td>
<td>Alcohol</td>
<td>Regular intake and binge</td>
<td>11 years</td>
<td>1 and 3 months</td>
<td>Inpatient: detoxification, education, counseling and group work</td>
<td>2.1 weeks</td>
</tr>
<tr>
<td>4</td>
<td>USA</td>
<td>McKay et al.</td>
<td>1991</td>
<td>Male</td>
<td>44</td>
<td>53</td>
<td>Alcohol</td>
<td>Alcohol</td>
<td>14 years</td>
<td>12 months</td>
<td>Outpatient behavioral marital therapy</td>
<td>16 weeks</td>
</tr>
<tr>
<td>5</td>
<td>England</td>
<td>Powell et al.</td>
<td>1993</td>
<td>Male and female</td>
<td>30</td>
<td>43</td>
<td>Opiates</td>
<td>70% intravenous users, 56% used at least one other drug</td>
<td>11 years</td>
<td>1 and 3 months</td>
<td>Inpatient treatment with random allocation to either drug dependence unit (detox and group and individual therapy) or behavioral and general ward (detox plus or minus cue-exposure treatment)</td>
<td>12 weeks</td>
</tr>
<tr>
<td>6</td>
<td>USA</td>
<td>Rychtarik et al.</td>
<td>1992</td>
<td>Male</td>
<td>46</td>
<td>87</td>
<td>Alcohol</td>
<td>Alcohol</td>
<td>13 years</td>
<td>1, 2, 3, and 12 months</td>
<td>Inpatient: social learning/ cognitive behavioral</td>
<td>4 weeks</td>
</tr>
<tr>
<td>7</td>
<td>USA</td>
<td>Solomon and Antis</td>
<td>1990</td>
<td>Male</td>
<td>30</td>
<td>90</td>
<td>Alcohol</td>
<td>Alcohol</td>
<td>10 years</td>
<td>3 months</td>
<td>Inpatient</td>
<td>3.5 weeks</td>
</tr>
<tr>
<td>No.</td>
<td>Goals</td>
<td>Data sources and type</td>
<td>Analysis techniques</td>
<td>Study implications</td>
<td>Study limitations</td>
<td>Critical unresolved issues</td>
<td></td>
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</tr>
<tr>
<td>1</td>
<td>Abstinence</td>
<td>Self-report (Confidence Questionnaire; carbon monoxide measures; Perceived Stress Scale; Inventory of Physical Symptoms; Interpersonal Support Evaluation List)</td>
<td>Principal components analysis, correlations</td>
<td>Efficacy beliefs are not specific to particular situations</td>
<td>All subjects not given confidence probes in follow-up</td>
<td>Why follow-up self-efficacy ratings are more strongly related to relapse than end-of-treatment ratings</td>
<td></td>
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<tr>
<td>2</td>
<td>--</td>
<td>Self-report (Interview; Situational Confidence Questionnaire)</td>
<td>ANOVA's, correlations and chi-square</td>
<td>In-treatment change in self-efficacy may be affected by characteristics of the study population</td>
<td>Reliability of self-efficacy ratings needs further research; Need to address the &quot;denial&quot; of patients with high intake self-efficacy</td>
<td>Whether drug/alcohol misuse represents a unique diagnostic category in self-efficacy research</td>
<td></td>
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</tr>
<tr>
<td>3</td>
<td>Abstinence</td>
<td>Self-Report (Interview; SADQ; Situational Confidence Questionnaire; Self-Sufficiency Questionnaire). Staff Rating (Alcohol-Related Problems Scale; Clinical Global Impression Scale; Self-Efficacy Questionnaire)</td>
<td>Nonparametric statistics (Correlation Matrix; Sign Test; Classification Tree Analysis; Mann-Whitney U)</td>
<td>End of treatment self-efficacy predictive of abstinence status; a need to focus in treatment on both those with low self-efficacy and with inflated/realistic sense of confidence</td>
<td>Short follow-up (3 months) and unrepresentative sample (in patients with 78% relapse rate)</td>
<td>Factors that account for variations in patients' self-efficacy judgments</td>
<td></td>
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<tr>
<td>4</td>
<td>--</td>
<td>Self-Report (Interview; Situational Confidence Questionnaire)</td>
<td>Correlations, multiple regression</td>
<td>Alcoholics end of treatment self-efficacies are stronger predictions of treatment outcome than self-efficacies in other areas</td>
<td>Small heterogeneous sample</td>
<td>The moderating effects of aftercare on individuals with low end of treatment self-efficacy</td>
<td></td>
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<td></td>
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<tr>
<td>5</td>
<td>--</td>
<td>Self-Report (EPQ; Trait Anxiety Scale, Impulsivity-7, Motivational Checklist, Confidence Questionnaire, Coercing Questionnaire, Interview)</td>
<td>Point biserial correlations</td>
<td>Greater awareness of personal vulnerability may promote effective coping</td>
<td>Relapse precipitants identified retrospectively using narrative account, difficulty in identifying amount of drug used in relapses</td>
<td>The influence of different methods of assessing outcome expectancies and self-efficacy</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Abstinence</td>
<td>Self-Report (Confidence Questionnaire)</td>
<td>Logistic regression analyses and chi-square</td>
<td>Ceiling effects on Confidence Questionnaire. May account for failure to find discharge self-efficacy predictive; Survival analysis needed to demonstrate self-efficacy effect strongly</td>
<td>Focus on males only who completed 28-day program</td>
<td>Confidence Questionnaire used may not be sensitive to self-efficacy differences between situations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Abstinent or controlled drinking.</td>
<td>Self-Report (Situational Confidence Questionnaire; Outcome Expectancy Scale; Interview)</td>
<td>Correlations, stepwise regression analysis</td>
<td>Supports Bandura's (1986) contention that outcome expectancies do not add to the prediction of behavior derived from self-efficacy ratings</td>
<td>Outcome expectancy not measured at treatment discharge</td>
<td>The role for the monitoring of outcome expectancy in case management of alcoholics</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
self-efficacy at discharge are more realistically attuned to potential threats to abstinence and are more likely to take protective measures (Powell et al., 1993).

More recently research in the obesity field has, however, shown the value of differentiating between patients' outcome expectancies and their fantasies about the future. Following Oettingen and Wadden (1991), outcome expectations are based on probability judgments about the likelihood of certain desirable or undesirable events. They are distinct from fantasies which are the streams of thoughts or images that are elicited by consideration of future situations. Both expectations and fantasies can be positive or negative. A positive fantasy is a thought or image which the individual judges to be satisfactory or pleasurable. A negative fantasy is a thought or image that the individual finds unsatisfactory or aversive. Oettingen (in press) hypothesizes 1) that outcome expectations are a powerful predictor of successful performance in many life domains, e.g., achievement, mental and physical health (Bandura, 1994; Taylor and Brown, 1988; Scheier and Carver, 1987) because they foster the resistance of high risk behavior, 2) that positive fantasies, which are not constrained by the cognitive mechanisms which make people acknowledge factual information (Klinger, 1990), imply an image of positive future experience. As a result, the motivation to achieve a successful outcome is reduced. An optimal combination for successful treatment, therefore, would be positive outcome expectations and negative fantasies regarding outcome success. Negative fantasies may have a motivating effect that leads to the development of strategies to cope with the situation. This idea is similar to the notion developed in the sports psychology literature that suggests arousal or even anxiety (the “psych-up” effect) when allied with the ability, or belief in the ability, to manage it is related to optimal or improved performance (Whelan et al., 1991).

Consistent with their hypotheses, Oettingen and Wadden (1991) found that the combination of optimistic outcome expectancies and negative fantasies favored weight loss, while the poorest outcome in terms of weight loss occurred in those individuals who displayed positive fantasies but negative expectations. Further work by Oettingen (in press) has extended these findings to other areas such as persistence and success in finding a job, applying to graduate schools, and romantic success.

If Oettingen's (in press) findings were to generalize to individuals with alcohol-use-associated problems, they would link together such notions as outcome expectancy, cognitive vigilance, and the use of both positive and negative thinking strategies as determinants of “survival” following treatment (Litman et al., 1979, 1983). In particular, they may indicate that those who are most likely to “survive” (abstain or not relapse) after treatment for problem drinking are those whose positive outcome expectations are allied to negative fantasies about drink-related situations that serve to maintain their cognitive vigilance. However, we
know of no such work with problem drinkers despite current research that is examining commonalities and differences in the mechanisms that mediate different addictive behaviors (Clark et al., 1991). The relative importance of self-efficacy expectancy, positive expectations, and negative fantasies has yet to be evaluated over an extended period with alcoholic patients, and the evidence for the predictive power of these variables is mixed (e.g., Rychtarik et al., 1992). Further, while Bandura (1977) has argued for the need to distinguish among self-efficacy expectancy, outcome expectancy, and outcome value, much research has been dogged by a failure to use a common set of terms or has used similar terms to describe differing phenomena (Maddux, 1991).

The following research aims to investigate the usefulness of distinguishing between subjective expectations and fantasies as a way of improving predictions of posttreatment alcohol use, and to assess whether measures of outcome expectations and fantasies are better predictors of posttreatment drinking than self-efficacy expectancy.

**METHOD**

**Participants**

Participants were 42 consecutive admissions to a 2-week day-patient program for problem drinkers. In all cases, alcoholism was the primary diagnosis according to DSM-III-R (American Psychiatric Association, 1987). Participants exhibited a moderate level of "alcohol dependence" on the Severity of Alcohol Dependence Questionnaire (SADQ: Stockwell et al., 1983) as reflected in a mean score of 20.8 (SD = 12.0). Table 2 describes the background characteristics of the participants.

Although comparable to some other samples (e.g., Solomon and Annis, 1990), they were, as a group, more likely to be married and employed and were somewhat better educated than other samples described (e.g., Rychtarik et al., 1992).

**Setting and Treatment Program**

The study was conducted at an independent not-for-profit hospital which provides an inpatient detoxification service and a 2-week day-patient treatment program. Treatment is provided by a multidisciplinary team of professionally qualified staff that includes a consultant psychiatrist and psychologist and 5 counselors, of whom 4 are psychiatric nurses and one an occupational therapist. All have been qualified for a minimum of 3 years (average 12.5 years; range 3–22 years), and years of experience in working with alcoholics and other substance users ranges from 3 to 15 years (average 7.8 years). The staff patient ratio is 1
Table 2.
Selected Background Characteristics of Participants (N = 42)

<table>
<thead>
<tr>
<th>Gender:</th>
<th>Male 31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age:</td>
<td>Mean 46 years (SD 10.2)</td>
</tr>
<tr>
<td></td>
<td>71% aged between 40 and 60 years</td>
</tr>
<tr>
<td>Ethnicity:</td>
<td>Caucasian of British origin</td>
</tr>
<tr>
<td>Religion:</td>
<td>Christian</td>
</tr>
<tr>
<td>Education:</td>
<td>Average 12.9 years</td>
</tr>
<tr>
<td></td>
<td>40% educated to degree level</td>
</tr>
<tr>
<td>Employment:</td>
<td>69% in employment with above average salaries</td>
</tr>
<tr>
<td></td>
<td>14% retired</td>
</tr>
<tr>
<td></td>
<td>9% unemployed</td>
</tr>
<tr>
<td></td>
<td>7% homemakers</td>
</tr>
<tr>
<td>Family:</td>
<td>Majority (74%) married with adult children</td>
</tr>
<tr>
<td></td>
<td>16% lived alone</td>
</tr>
<tr>
<td></td>
<td>16% previously divorced</td>
</tr>
<tr>
<td>Substance use history:</td>
<td>All participants first drank as teenagers and had had a drinking problem for more than 5 years</td>
</tr>
<tr>
<td></td>
<td>83% drank on daily basis</td>
</tr>
<tr>
<td></td>
<td>29% previously admitted to hospital for problem drinking</td>
</tr>
<tr>
<td></td>
<td>42% previously attended Alcoholics Anonymous meetings</td>
</tr>
<tr>
<td></td>
<td>16% reported forensic complications related to alcohol use</td>
</tr>
<tr>
<td></td>
<td>No participant regularly used other substances</td>
</tr>
</tbody>
</table>

staff to 2 patients, and the success of the team in reaching treatment goals is described elsewhere (Long et al., 1998) as 55.6% of alcoholic patients being abstinent or problem-free at 1 year follow-up.

The cognitive-behavioral treatment program provides individual counseling and a core group therapy program that uses strategies of proven effectiveness in alcoholism treatment (Holder et al., 1991), and incorporates the concept of “matching” clients to treatment (Lindström, 1992; DiClemente et al., 1992). The program has a relapse prevention focus and includes motivational counseling, self-control training, and social skills training. Core group sessions are repeated every 2 weeks. Patients are encouraged to make their own choice regarding abstinence or controlled drinking, and families are involved as much as possible in assessment and ongoing therapy.

Following discharge, patients are encouraged to attend group therapy follow-up sessions on a weekly basis during the first 3 months, and on a fortnightly basis in the 3–6 months postdischarge. Participants unable to attend the hospital are put in touch with local support agencies which may include Alcoholics Anonymous.
Procedure

All participants were assessed with a variety of semistructured interviews and self-report instruments on intake (see Table 3), and were followed up at 6 months and 12 months posttreatment.

Intake Measures

Tests administered on intake included:

1. The Comprehensive Drinker Profile (CDP: Miller and Marlatt, 1984) as a precursor to the Follow-up Drinker Profile (FDP: Miller and Marlatt, 1987) for gathering information in order to assist with classification of 6 and 12 month outcome status.


3. The Expectation and Fantasy Questionnaire. This self-report inventory was adapted for problem drinkers from Oettingen and Wadden’s (1991) study with dieters and contained items for:
   (a) Goal choice and expectation of success.
   At pretreatment each subject indicated his or her goal option and how many units of alcohol he or she intended to consume per week after treatment if controlled drinking was the option. Expectation of success in reaching that target was assessed by three related questions:
   i) How likely do you think it is that you will achieve the goal you have specified one year from now?
   ii) Do you feel that you will be successful in the addiction unit program?
   iii) How confident are you that one year after this program is completed, you will have achieved the goal you have specified?
   Questions were answered using 7-point scales (1 = very low, 7 = very high).
   (b) Positivity, negativity, and intensity of alcohol-related fantasies and the alcohol use in those fantasies.

In this semiprojective procedure, each patient was asked to vividly imagine him or herself as the main character in four drinking-related scenarios. The stories were designed to elicit fantasies about the subject’s drinking status in specific situations. Two described encounters with tempting alcoholic beverages while two described social situations without reference to alcohol. For example, one scenario read:

104
<table>
<thead>
<tr>
<th>Measure</th>
<th>Type of data</th>
<th>Areas covered</th>
<th>Number of items</th>
<th>Pretested with whom</th>
<th>Skills/abilities needed to respond</th>
<th>Average time needed to respond (minutes)</th>
<th>Advantages</th>
<th>Limitations</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intake:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comprehensive Drinker Profile (CDP)</td>
<td>Self-report (structured patient interview)</td>
<td>Demographic; drinking; motivational</td>
<td>88</td>
<td>Alcoholics</td>
<td>Low average intelligence and above</td>
<td>60-120</td>
<td>Comprehensive assessment of drinking and recovery-relevant information with treatment matching suggestions</td>
<td>Lengthy interview requiring good cooperation</td>
<td>Miller and Marlatt (1984)</td>
</tr>
<tr>
<td>Situational Confidence Questionnaire (SCQ)</td>
<td>Test data (self-report questionnaire)</td>
<td>Self-efficacy expectancy for alcohol-related situations</td>
<td>30</td>
<td>Alcoholics</td>
<td>Literate. Low average intelligence and above</td>
<td>10-15</td>
<td>Brief, easily administered and widely used Measure of self-efficacy</td>
<td>Subject to ceiling effect; clients make fake responses</td>
<td>Annis (1987), Annis and Graham (1988)</td>
</tr>
<tr>
<td>Expectations and Fantasy Questionnaire</td>
<td>Test data (self-report questionnaire)</td>
<td>Expectation of success in reaching treatment goal; alcohol-related fantasies in future situations</td>
<td>20</td>
<td>Students, obese patients, normals; Alcoholics</td>
<td>Literate. Low average intelligence and above</td>
<td>15-45</td>
<td>One of few semiprojective procedure that taps alcohol-related fantasies</td>
<td>Limited research on usefulness to date</td>
<td>(Adapted from) Oettingen and Walden (1991)</td>
</tr>
<tr>
<td><strong>Follow-up:</strong></td>
<td></td>
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</tr>
<tr>
<td>Follow-up Drinker Profile (FDP)</td>
<td>Self-report (structured patient interview)</td>
<td>Drinking and alcohol-related problems in follow-up period</td>
<td>30</td>
<td>Alcoholics</td>
<td>Low average intelligence and above</td>
<td>45-60</td>
<td>Covers key recovery-related information: is companion of CDP</td>
<td>Responses may be influenced by social desirability</td>
<td>Miller and Marlatt (1987)</td>
</tr>
<tr>
<td>Collateral Interview Form (CIF)</td>
<td>Observation (structured significant other interview)</td>
<td>Drinking and alcohol-related problems in follow-up period</td>
<td>30</td>
<td>Problem drinkers, significant others</td>
<td>Low average intelligence and above</td>
<td>45-60</td>
<td>Reliability check on FDP information</td>
<td>Dependent on accuracy and comprehensiveness of informants knowledge of patients</td>
<td>Miller and Marlatt (1987)</td>
</tr>
<tr>
<td>Blood tests</td>
<td>Laboratory test data (biological measures)</td>
<td>Serumcreatinine, gamma-glutamyl transpeptidase and mean cell volume</td>
<td></td>
<td>Alcoholics</td>
<td>Passive compliance with medical procedure</td>
<td>--</td>
<td>Biological confirmation of self-reported alcohol use</td>
<td>Influenced by factors other than alcohol consumption</td>
<td>Chick et al. (1981)</td>
</tr>
</tbody>
</table>
It is a year since you left the Addiction Unit. You have friends around for dinner in the evening and they have brought a particularly good bottle of wine with them. It's now midnight and you are alone, clearing away, aware that there is a half full bottle of wine open on the dining room table. As you enter the dining room you imagine...

Immediately after describing in writing their mental images, participants rated the positivity, negativity, and intensity of their images/fantasy using 7-point scales (1 = not at all, 7 = very) and their imagined level of alcohol use using an 8-point scale (1 = much heavier than present, 8 = abstinent). In this procedure, although the positivity or negativity of the participant's fantasy may be influenced by the individual's assumptions about his or her drinking behavior in a high risk situation, it is ultimately self-defined. Thus, the positivity of a fantasy might, depending on the individual and his drinking goal, be associated with (a) the enjoyment of being able to abstain from alcohol or of being able to drink in a moderate way without suffering negative consequences, (b) the pleasure of drinking alcohol in the fantasy, or (c) some other source of positive feelings derived from the fantasy.

Follow-up Measures

Tests administered at 6 and 12 month follow-ups assessed outcome status and included:

1. The Follow-up Drinker Profile (FDP: Miller and Marlatt, 1987), a companion form of the CDP for assessing treatment outcome.
2. The Collateral Interview Form (CIF: Miller and Marlatt, 1987), also a companion of the CDP. This is a structured interview technique for collecting information for patients' significant others and for corroborating information regarding the validity of patients' self-reports.
3. Serum-gamma-glutamyl-transpeptidase (GGT) and mean cell volume (MCV) blood tests used as recommended markers of alcohol intake (Chick et al., 1981). These markers of alcohol consumption, initially undertaken on intake, were repeated on all patients at 12 months who indicated that they were abstinent or drinking in a controlled way.

Outcome Status

Subjects were classified as either remitted or relapsed at follow-up according to the criteria used by Finney and Moos (1991). Remitted patients were those who:

1. Had not been rehospitalized for problem drinking in the follow-up period.
2. Had not missed work because of problem drinking in the follow-up period.
3. Had consumed less than 5 ounces of ethanol (e.g., 6 pints of beer) per drinking day in the past 3 months.
4. Had consumed less than 3 ounces of ethanol per day, on average, in the previous 3 months.
5. Had no problems associated with drinking (except for family arguments) in the follow-up period.
6. In addition, remitted patients had GGT and MCV blood test results within the normal range at 12-month follow-up (GGT < 50 i.u./L for men and <35 i.u./L for women; MCV < 95 fl).

RESULTS

Relationships between Intake Measures

The three expectation and fantasy questionnaire items relating to outcome expectations ("How likely do you think it is that you will achieve the goal that you have specified one year from now?"; "Do you feel that you will be successful in the addiction unit program?"; and "How confident are you that one year after this program is completed, you will have achieved the goal that you have specified?") yielded sufficient internal consistency, as measured by a Cronbach's alpha of .65, to be combined. A single "expectations" score was derived as the mean response to these questions.

A significant inverse relationship was evident between fantasy items for positivity and negativity (r = —.80, p < .001). Both the positivity and negativity of the fantasies were also significantly correlated with expectation values (r = .48, p = .001; r = —.47, p = .002, respectively), imagined level of alcohol use (r = .61, p < .001; r = —.71, p < .001), and mean SCQ-39 scores (r = .46, p = .003; r = —.47, p = .003).

The highly significant associations between the positivity/negativity of the fantasies and the imagined level of alcohol use indicated that the positivity of fantasies pertained to abstaining from alcohol or controlled alcohol consumption, while the negativity of fantasies pertained to higher levels of alcohol consumption.

Participants' intensity scores were not significantly related to any other intake measure and are not used in further analyses.

The mean values and ranges for the SCQ-39, expectation score, and for positivity and negativity of fantasies are given in Table 4.

Dichotomous Drinking Outcome

Participants' 6 month and 1 year drinking outcomes were classified according to the criteria for remitted and relapsed status. In all cases, classification by
Table 4.
Means, Standard Deviations and Ranges for Intake Measures

<table>
<thead>
<tr>
<th>Intake measure</th>
<th>M</th>
<th>SD</th>
<th>Minimum value</th>
<th>Maximum value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCQ-39</td>
<td>85.3</td>
<td>14.6</td>
<td>48.2</td>
<td>100</td>
</tr>
<tr>
<td>Expectation score</td>
<td>6.1</td>
<td>0.76</td>
<td>4.0</td>
<td>7.0</td>
</tr>
<tr>
<td>Fantasy positivity score</td>
<td>5.6</td>
<td>1.4</td>
<td>2.5</td>
<td>7.0</td>
</tr>
<tr>
<td>Fantasy negativity score</td>
<td>2.5</td>
<td>1.5</td>
<td>1.0</td>
<td>5.8</td>
</tr>
</tbody>
</table>

Participant self-report (FDP) was supported by collateral report (CIF) and by blood results.

There were 25 remitted drinkers at 6 months, while 17 had not achieved remitted status (59.5 and 40.5%, respectively). At 1 year there were 24 remitted drinkers while 18 were relapsed (57.1 and 42.9%). Nine of the 42 participants had different outcomes at the 6-month and the 1-year follow-up: Five of the 6-month remitted group had relapsed by the next follow-up, while four of the 6-month relapsed group went on to achieve remitted status.

Values for each of the intake measures were compared for remitted and nonremitted outcome groups (see Table 5). Mean SCQ-39 scores were significantly higher at intake for those achieving remitted status than for relapsed participants at 6 months ($t = 2.15, p = .04$; remitted: $M = 89.44, SD = 12.81$; relapsed: $M = 79.37, SD = 15.42$) and at 1 year ($t = 4.07, p < .001$; remitted: $M = 92.89, SD = 9.78$; relapsed: $M = 76.46, SD = 14.56$). No other intake measures distinguished between the outcome groups at either follow-up.

Logistic Regression Analysis

Participants’ 1-year outcomes were further examined using a logistic regression analysis in which the expectation scores and fantasy positivity and negativity scores were entered in the first step, and the SCQ-39 scores were entered in the second step. The only measure significant in predicting 1-year outcome was mean SCQ-39 score (Wald statistic = 7.4490, $p = .0063$, partial correlation = .3171). The derived model for classifying outcome was highly significant and resulted in correct classification of 73.81% of the cases ($\chi^2 = 10.40, p = .0013$).
Table 5.
Comparison of Intake Measures by Remitted and Relapsed Outcome Groups at 6 and 12 Months Posttreatment

<table>
<thead>
<tr>
<th>Intake measure</th>
<th>Outcome group</th>
<th>Remitted (n = 25)</th>
<th>Relapsed (n = 17)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>6 Month Follow-up</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCQ-39*</td>
<td></td>
<td>89.44 (12.81)</td>
<td>79.37 (15.42)</td>
</tr>
<tr>
<td>Expectation score</td>
<td></td>
<td>6.11 (0.83)</td>
<td>6.02 (0.65)</td>
</tr>
<tr>
<td>Fantasy positivity score</td>
<td></td>
<td>5.75 (1.22)</td>
<td>5.32 (1.60)</td>
</tr>
<tr>
<td>Fantasy negativity score</td>
<td></td>
<td>2.29 (1.47)</td>
<td>2.85 (1.41)</td>
</tr>
<tr>
<td>12 Month Follow-up</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCQ-39**</td>
<td></td>
<td>92.89 (9.78)</td>
<td>76.46 (14.56)</td>
</tr>
<tr>
<td>Expectation score</td>
<td></td>
<td>6.12 (0.84)</td>
<td>6.00 (0.64)</td>
</tr>
<tr>
<td>Fantasy positivity score</td>
<td></td>
<td>5.76 (1.36)</td>
<td>5.33 (1.40)</td>
</tr>
<tr>
<td>Fantasy negativity score</td>
<td></td>
<td>2.20 (1.46)</td>
<td>2.94 (1.38)</td>
</tr>
</tbody>
</table>

*: t = 2.15, p = .04.
**: t = 4.07, p = .001.

Multiple Drinking Outcome Groups

To provide a more sensitive measure of drinking outcome, an adaptation of the outcome categories used by Heather et al. (1983) was applied: The remitted and relapsed outcome categories were each subdivided to give a total of four ordinal outcome groups, remitted drinkers were classified as either abstinent or other, and the relapsed group as attenuated (for participants consuming at least 20% less alcohol over 3 months at follow-up than at intake) or other.

At 6 months there were 15 abstainers, 10 other remitted drinkers, 14 attenuated drinkers, and 3 people drinking close to or above intake levels. At 1 year these figures were 12, 12, 14, and 4, respectively.

The intake measures were assessed as outcome predictors for the multigroup outcome categories using Spearman’s rank sum correlation. Results are shown in Table 6. The only measure significantly associated with outcome was the SCQ-39 ($r_s = .52, p = .001$).

To test Oettingen and Wadden’s (1991) contention that it is a combination of optimistic expectations and negative fantasies that predicts better outcome,
median splits were used to divide the participants into two groups: those with high expectations/negative fantasies ($n = 13$) and others ($n = 29$). Table 7 shows the distribution of these groups for each of the four possible outcomes at 6 months and at 1 year.

No differences were found between these two groups in terms of multigroup outcome at either 6 months or 1 year follow-up (6 months: Mann-Whitney $U = 171.0, p = .62, z = - .50$; 1 year: $U = 163.5, p = .48, z = - .71$).

Table 7.
*Distribution of High Expectation/Negative Fantasies and "Other" Groups by Multigroup Outcome at 6 and 12 Months Posttreatment*

<table>
<thead>
<tr>
<th>Outcome group</th>
<th>Abstinent</th>
<th>Other remitted</th>
<th>Attenuated</th>
<th>Relapsed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>6 Month Follow-up</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High expectations/ negative fantasies</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>11</td>
<td>7</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td><strong>12 Month Follow-up</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High expectations/ negative fantasies</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td>9</td>
<td>8</td>
<td>3</td>
</tr>
</tbody>
</table>
DISCUSSION

The results of the present study provide further support for self-efficacy theory as applied to the prediction of treatment outcome for problem drinking. Drinking-related self-efficacy expectancy assessed at intake to treatment was found to be strongly associated with the level of alcohol consumption at 6-months and 1-year follow-up. These findings confirm those of Rychtarik et al. (1992), which also extended the analysis of the self-efficacy effect to 12-months post-treatment.

Positive outcome expectancies alone or combined with negative fantasies did not predict posttreatment drinking and, therefore, the data do not support the usefulness of the expectations/fantasy distinction with problem drinkers. However, in view of the size of the current inpatient study sample \(N = 42\) and positive findings in other areas (Oettingen, in press), replication with a larger sample of problem and "heavy" social drinkers involved in both inpatient and outpatient treatment is necessary. In the absence of such research the data obtained might plausibly be accounted for by both methodological and sample factors.

Oettingen and Wadden's (1991) measure of expectations (used in the current study), which correlated with self-efficacy expectancy, combines questions related both to outcome expectancy and self-efficacy expectancies. As such, it may be but a "weak" measure of self-efficacy that adds little predictive power. The current data confirm Bandura's (1986) contention that outcome expectancies add little information to prediction beyond that explained by self-efficacy expectancies. Bandura (1986) argues that when outcomes are contingent on the environment (e.g., social pressure to drink, praise of others), it is unlikely that outcome beliefs will be closely related to performance. Indeed, Solomon and Annis (1990) found that while outcome expectations did not predict alcohol consumption in 100 male alcoholics at 3-months posttreatment follow-up, self-efficacy at intake of treatment did.

The second explanation for these findings relates to population differences. Kazdin's (1978) view is that efficacy expectations and outcome expectations are "differentially important as a function of the specific client problem" (p. 180), and this position is echoed by Eastman and Marzillier (1984) and Teasdale (1978). Population and problem differences may also explain the failure of a combination of positive expectations and negative fantasies to predict posttreatment drinking. The current study used a clinical sample in contrast to the work reported by Oettingen (in press) with normal participants. Although expectations and fantasies are different ways of thinking about the future, they may not, in critical or challenging situations, have different effects on motivation and action. Thus, the interaction between fantasy and expectations may be more or less useful according to the type of problem (clinical or nonclinical) and its severity.
Despite evidence of the dangers of illusory optimism (Baumeister, 1989), current data do not confirm Oettingen’s (in press) findings that positive fantasy has a detrimental effect on outcome. Since the benefits of optimistic thinking are dependent on the situation or task in hand (Gollwitzer and Kinney, 1989; Gollwitzer, 1990), it may be that positive future-related fantasies are functional for maintaining the determination to pursue a particularly difficult self-control goal over an extended period of time.

Currently, despite the existence of supportive evidence in other areas distinguishing between the predictive power of expectations and fantasy, its value in terms of adding to predictions derived from intake self-efficacy in the clinical field of alcoholism has yet to be established.

These findings add to the debate about the extent to which “cognitive factors” can usefully predict behavior and highlight the need for further attention to be given to the roles that behavioral intention, commitment, or a behavioral plan may play in mediating the relationship between behavior and self-efficacy expectancy and outcome expectancy (Maddux, 1991). They provide further support for the idea that the self-efficacy theory is useful for exploring the impact of clinical interventions, especially the prediction of relapse and maintenance (DiClemente, 1986). Future research may help to identify which factors (e.g., personality characteristics, mood state, comorbidity, and cognitive functioning) may be important sources of self-efficacy judgments (Goldbeck et al., 1997). However, in practical terms the implications of the data are that there may be an increased case for targeting patients with low self-efficacy on intake for cognitive behavioral interactions that will improve self-evaluation.

REFERENCES


RESUMEN

La Utilidad de distinguir entre expectaciones y fantasías sobre los resultados del tratamiento fue examinada en pacientes alcohílicos. Los resultados a los 6 y 12 meses no apoyan los resultados de al investigación con participantes no alcohílicos quienes relacionan mejores resultados a la combinación de expectaciones positivas y fantasías negativas sobre situaciones futuras relacionadas con la bebida. Expectación de autoeficacia más alta al comienzo, sin embargo fue relacionada con resultados mejores clínicos. Los descubrimientos apoyan el argumento de Bandura (1986) que las expectaciones de resultados añaden poca información para predecir más allá de la explicada por la expectación de autoeficacia. Las implicaciones clínicas de estos resultados son discutibles.

Palabras Claves: Autoeficacia; expectaciones; fantasía; alcoholismo.

RÉSUMÉ

L’utilité de distinguer les attentes de patients alcooliques de leurs fantasmes quant à l’aboutissement de leur traitement a été examinée. Les résultats après un suivi de 6 et 12 mois n’ont pas corrobé les résultats des recherches pourvues sur des participants non alcooliques: ceux-ci établissaient un rapport entre de meilleurs aboutissements et une combinaison d’attentes positives et de fantasmes négatifs au regard des situations futures liées à la boisson. Une confiance suérieure en sa propre aptitude à suivre une certaine ligne de conduite au moment de
l'admission a été cependant associée à de meilleurs résultats cliniques. Les conclusions viennent appuyer l'assertion de Bandura (1986) selon laquelle les attentes concernant l'aboutissement n'apportent que peu d'information supplémentaire à la prévision au-delà expliquée par la confiance en sa propre aptitude à suivre une certaine ligne de conduite. Les implications cliniques de ces résultats sont examinées.

Mots clés: Détermination à réussir
Attentes
Fantasmes
Alcoolisme

THE AUTHORS

Clive G. Long, Ph.D., is a clinical psychologist who has specialized in the treatment of persons with problems related to drug and alcohol use, and with eating disorders. He has published widely on clinical issues and is currently Clinical Director of Acute Services and Head of Psychology at St. Andrew's Hospital, Northampton, England.

Clive R. Hollin, Ph.D., is a forensic psychologist with experience of working and researching with a range of problems, including drug and alcohol use, associated with antisocial behavior. He is currently Consultant Forensic Psychologist at Rampton Hospital Authority, and Reader in Forensic Psychology at the University of Leicester, England. He has published numerous works on both crime and alcohol use and misuse.
Martin J. Williams, B.Sc., is a researcher currently specializing in primary health medicine. At the time of writing this paper he was employed as a Research Psychologist at St. Andrew's Hospital, Northampton, England. He is now a Research Fellow at the University of Leicester, England, while maintaining links with the addiction unit at St. Andrew's Hospital.
Current findings endorse the usefulness of self-efficacy assessment in the quest to predict treatment outcome. The results, which show that alcohol expectancies add little to self-efficacy beliefs as predictors, are reinforced by recent research. Oie et al, (1998) found that in contrast to clinical samples, expectancies were an important influence on the drinking behaviour of non-problem drinkers. They note that this finding supports a two-process model (Oie & Bladwin, 1994) that suggests that expectancies are no longer an important determinant of consumption in a clinical or problem drinker. Consistent with these results, Young (1994) found that problem drinking was more strongly related to drink refusal self-efficacy than alcohol expectances in clinical samples of problem drinkers.

Thus, although self-efficacy has often been found to be related to behaviour change, it is a testable hypothesis whether an observed shift in self-efficacy is a necessary or sufficient antecedent of behaviour change. It is a common finding that cognitive appraisal shifts can shadow behaviour change rather than precede it, and cognitive markers of outcome can be passive reflections of behaviour change (eg, Miller et al, 1996). Nevertheless, shifts in self-efficacy seem a promising area to look at, in trying to understand what triggers change and/or relapse.

The emphasis on cognitive and dynamic predictors as change with treatment highlighted in preceding studies has overlapped with research literature on the value of subjective global judgments concerning an addicted individual's probability at a given point in time of achieving their treatment goals (eg, Vannicelli & Becker, 1981). Every-day therapists make recommendations to problem drinking clients about who needs more or a different type of treatment. Clinical judgment of client prognosis plays a key role in what further addiction treatment, if any, is recommended. Clinicians are in a unique position to render such clinical judgments. As pointed out by Sawyer (1966), clinicians can take into consideration multiple sources of information and can observe behaviour or subtle cues that are not captured by other measures. To date, statistical prediction models have regularly out-performed clinical predictions in previous studies examining the prediction of behaviour (eg, violent acts, treatment outcome; for a review see Dawes et al, 1989). Also, studies on the relationship between confidence and accuracy of clinical judgments show that clinicians over-estimate their ability to evaluate their client's improvement. This said, there has been comparatively little attention given to the value of clinicians' prognostic ratings within the alcohol field (Breslin et al, 1997), and the extent to which clinical judgment is of value in an empirically supported stepped care approach to the treatment of problem drinkers, has yet to be determined.
SPECIAL NOTE

ITEM SCANNED AS SUPPLIED
PAGINATION IS AS SEEN
STAFF DO KNOW BEST: PEER & THERAPIST PREDICTION OF OUTCOME FOLLOWING TREATMENT FOR PROBLEM DRINKING

CLIVE G. LONG1,* MARIE MIDGLEY2 and CLIVE R. HOLLIN3

1Thomas Prichard Addiction Unit, St. Andrew's Hospital, Northampton NN1 5DG, U.K.; 2Department of Psychology, University of Leicester, U.K.

The relative ability of staff and patients' peers to predict outcome at one year post-treatment for 54 problem drinkers was examined. In contrast to peers, staff were able accurately to predict drinking status and were more accurate predictors of psychological distress. Both groups were accurate predictors of future family and social support. Predictors of drinking status included the perception that the patient had significant ongoing problems and the estimated likelihood that the patient would carry out their discharge plans. Accurate predictors of drinking status tended to be more senior and experienced staff. No individual problem drinker was an accurate predictor of his or her peers' future drinking status. Ways of improving the accuracy of clinical judgements and the possibility of both positive and negative consequences of accurate prediction are discussed.

Keywords: Staff and peer prediction; treatment outcome for problem drinking

INTRODUCTION

The relative merits of clinical v. statistical prediction of treatment outcome has been a source of considerable debate especially since the publication of Meehl's (1954) book on the subject. Statistical prediction, which is based on the use of "static" variables (such as drinking history and family background) has been criticised because it ignores "dynamic" (or clinical) factors such as social, situational, and psychological variables which may change and in turn change the likelihood of relapse (eg, Simon, 1971). Within the problem drinking domain there is a complex relationship between pretreatment (statistical) data and treatment outcome (Edwards, et al. 1988), and in general terms such data have lower predictive...
power than subjective variables which reflect patients’ and staff’s first reactions to treatment (Priebe & Guyters, 1995). There has been a resurgence of scientific interest in clinical judgment (Sarbin, 1986; Scriven, 1979), particularly in the area of treatment outcome for problem drinking where the discovery of simple objective indications for the (matched) selection of treatment approach or aftercare are potentially of great practical value.

Problem drinking research to date, however, has largely concerned itself with therapists’ prophecy (Ritson, 1968; 1969; Schuckit, et al. 1993; Vannicelli & Becker, 1981) and, to a more limited extent, individual patient’s prediction of their own drinking outcome (Vannicelli & Becker, 1981; 1988). Evidence of accuracy in prediction is mixed. When global, averaged group ratings are considered, staff have been able to predict post-treatment levels of drinking over periods of 3 months (Schuckit, et al. 1993) and 6 months (Ritson 1968; 1969), but are poorer predictors at 12 month follow-up than individual patients (Vannicelli & Becker, 1981). Recent research by Westbrook (1991) into therapist prediction about the length of psychological treatment led to the suggestion that the reason for the failure accurate prediction was because the data necessary to do it was within patients. To date, however, the issue of whether problem drinkers can accurately predict the treatment outcome of fellow patients (peer prediction) remains unexplored. This is surprising given the validity of peer ratings in non-clinical areas that include education (eg. Kelly, 1957), and vocational and managerial success (eg. Kraut, 1975), and the employment of recovered problem drinkers as counsellors in treatment programmes of the Minnesota type (Cook, 1988). Implicit in the practise of using recovered problem drinkers as therapists is the belief that such individuals have a special knowledge or understanding that makes them particularly skilled at facilitating recovery in others, and which may make them better predictors of outcome. Belief in the value of patient advice is also shared by addiction treatment staff (Rees & Stone, 1989).

Most evidence of patients’ clinical perspicacity is indirect (eg. Rosenhan, 1973; Rippere, 1980). Within a clinical setting only one study (Lasky, et al. 1959) has compared staff with peer outcome ratings. In this study, predicted post psychiatric hospital adjustment was examined in relation to relapse, employment and family adjustment and health. While the patient’s self-predictions did not reach significance, both peer and staff ratings were 70% accurate at two year follow-up, and the authors concluded that “apparently there were sources and kinds of information which were available to the patients, but not to the staff” (p. 217). It is possible, therefore, that fellow problem drinkers in treatment units have access to relevant prognostic information about fellow patients that may be denied to staff.
In view of the controversy surrounding the accuracy of staff prediction (eg. Gambrill, 1990) and the unexamined issue of peer prediction, the current study was undertaken to examine the accuracy at one year follow-up of addiction unit staff and peer predictions of post-treatment functioning.

Since outcome has many dimensions of which drinking behaviour is only one additional measure of alcohol-related life problems, psychological distress and family and social functioning were also taken in view of their relationship with post-treatment outcome status (Alterman. et al. 1993; Babor. et al. 1992; Finney & Moos. 1992).

In view of the contention that staff groups contain good and bad judges (Sandell. 1991) a second aim of the study was to examine between staff differences in terms of predictive accuracy.

Finally, in view of the implicit assumptions behind the use of recovered problem drinkers as counsellors, a third aim was to assess whether ‘successful’ patients were more accurate predictors of their peers’ post-treatment functioning.

METHOD

Participants

Staff Ten staff members, (two Consultant Psychiatrists, one Senior Registrar in psychiatry, one Consultant Psychologist, an untrained Assistant Psychologist and five Counsellors), participated in the study. Years of experience in mental health settings following professional training varied from 2 to 20 years; while years spent in treating problem drinkers varied from one month to 10 years at the start of the study.

Patients Fifty-four patients, 33 men and 21 women, who had completed four or more weeks of residential/day patient treatment, agreed to participate: 48 (88%) of the patients had abstinence as their treatment goal. The mean age of the sample was 46.7 years ($SD = 8.58$); 41 (76%) were married and 29 (55%) were in full-time employment. Using social class groupings based on occupation, 72.7% of the sample were classified as social class II by occupation (Office of Population Censuses & Surveys, 1991) and their average years of education was 12.6 (range 11–18).

The mean duration of self-reported problem drinking was 7.79 years ($SD = 5.75$). A mean score of 28.8 ($SD = 10.3$) on the Michigan Alcoholism Screening Test (MAST) indicated severe problems with drinking, while a mean Alcohol Dependence score of 9.8 ($SD = 4.14$) was evidence of definite symptoms of dependence (Miller & Marlatt, 1984). The average length of in-patient stay for participants was 34.5 days (range 28–49 days). All 54 participants were
interviewed in person at 12 months and a complete data set was provided by 94% of the sample. Of the 41 patients with a close relative, 28 (68.3%) agreed for their relative to be interviewed.

Treatment Facility and Programme

At the time of this study, the treatment facility offered a 5-week cognitive behavioural residential/day patient programme that emphasised goal choice and individual responsibility. The length of stay was determined by individual needs and circumstance.

Procedure

Within 10 days of admission descriptive data on patients were gathered using the Comprehensive Drinkers Profile (Miller & Marlatt, 1984), along with the various outcome measures (see below). A few days before discharge patients and staff completed prediction questionnaires about patients' future behaviour. These predictions were compared with objective data gathered from patients and a significant other at 12 month follow-up home visits.

Measures During Treatment

Prediction Ratings (patients and staff) In order for staff and patients to have sufficient time in which to form an opinion and for patients to make a degree of neuropsychological recovery only patients who stayed 4 or more weeks were included. All staff rated patients who on the day of their leaving had received 4 or more weeks of inpatient treatment, while patients predicted the outcome of fellow patients they had known for three or more weeks. This meant that while staff rated all patients in the sample each patient only rated fellow patients whose treatment overlapped with their own.

Using a 6-point bipolar forced choice 18-item scale, ad hoc predictions were made on drinking status, psychological distress, and family/social support. Other ratings included overall ratings of performance in treatment and relationship with group members; determination to succeed; whether the individual still had significant difficulties to overcome; how likely they were to carry out stated discharge plans; use of aftercare; legal problems related to alcohol use; likelihood of substitute dependency. Questions were counter-balanced to avoid response bias so that in some cases a score of 1 or 2 indicated good outcome, and 5 or 6 a good outcome in other cases. (See Appendix for details of scale.)
Comprehensive Drinkers Profile (CDP) (Miller & Marlatt, 1984). The CDP was completed within a few days of admission or if necessary following detoxification.

Measures at 12 Months Follow-up

Follow-up Drinkers Profile (FDP) (Miller & Marlatt, 1987).

Collateral Interview Form (CIF) (Miller & Marlatt, 1987).

Laboratory Tests for Alcohol Consumption: Blood test markers of alcohol intake to confirm self-reports of control included the serum enzyme gamma glutamyl transferase (GGT), and the erythrocyte mean cell volume (MCV) (Chick et al. 1981).

General Health Questionnaire 12 (GHQ12) (Goldberg & Williams, 1988).

Family Environment Scale (FES) (Moos & Moos, 1986). The Cohesion, Conflict, Active-Recreational, and Organisation subscales of this measure of family social climate were completed by both patient and partner.

Significant Other Scale (SOS) The SOS elicits information on the perceived form and function of social support in both reality and in an ideal sense for relationships in an individual’s life (Power et al. 1988). The short version of the SOS used here assesses the roles of the following seven people: spouse or partner, mother, father, closest brother or sister, closest son or daughter, best friend, and therapist/professional helper.

Outcome Classification

Participants were classified as either remitted or relapsed (good or poor outcome) at follow-up according to the criteria used by Finney and Moss (1991) which, in line with the drinking status prediction scale, covers both abstinent and controlled drinking outcomes and alcohol-related problems. Remitted (or good outcome) patients were those who:

1. Had not been re-hospitalised for problem drinking in the follow-up period.
2. Had not missed work because of problem drinking in the follow-up period.
3. Had consumed less than 5 ounces of ethanol (eg 6 pints of beer) per drinking day in the past 3 months.
4. Had consumed less than 3 ounces of ethanol per day, on average, in the previous 3 months.
5. Had no problems associated with drinking (except for family arguments) in the follow-up period. In addition, self-reported remitted status was confirmed at 12 months follow-up by a collateral report and blood test data (GGT < 50 i.u./l for men, and <35 i.u./l for women; MCV < 95 fl).

RESULTS

All participants were interviewed at one year giving a 100% follow-up rate. The results that follow are arranged so that staff and patient intake predictions are compared with outcome data in terms of drinking status, psychological distress, and family and social support.

Outcome Drinking Status

Information from the CDP, FDP, CIF and blood test data were used to classify patients by drinking status into remitted or relapsed categories (Finney & Moos, 1991). At 12 months follow-up 25 (45%) were classified as remitted and 29 (55%) as relapsed.

Prediction of Drinking Status

Prediction of drinking outcome status was measured by using the total score given to four questions. These were predictions about the patient's control over alcohol, and how likely they were to drink again (linking to items 4 and 5 of Finney and Moos' 1991 outcome criteria); the likelihood that they would be re-admitted for treatment for problem drinking (matching Finney and Moos' (1991) first item); and the likelihood that patients would return to problem drinking (linking to items 2 and 5 of Finney and Moos' 1991 criteria).

An analysis of mean staff prediction scores for each patient found that a cut-off score of 16 points (range 4-24) divided the data almost into half, i.e., 28 patients (52% of the group) were given scores below 16 (predicted to have poor outcome) and 26 (48% of group) scored above 16 (i.e.: predicted to have good outcome). This division was consistent with actual outcome drinking status where 55% had a relapsed drinking status and 45% had a remitted status at 1 year. As patients tended to rate their peers more positively than staff, their cut-off was set at 18.5 to reflect this higher estimation. The results which follow support 'post hoc' the validity of splitting the groups on the basis of prediction scale scores into roughly equal halves and analysing the data accordingly.
Staff

a) The predictions of outcome made by individual staff members were compared with actual outcome at 12 months. Predictions were classified as “hits” when prediction matched outcome and “misses” when there was a mismatch. Using chi-square analysis it was found that three members of staff were good predictors in that they achieved above chance levels in their number of hits. These three were a Consultant Psychiatrist who accurately predicted 71% of cases, ($\chi^2$ (1, N = 52) = 9.3, p < 0.01) a Consultant Psychologist who predicted 70% ($\chi^2$ (1, N = 51) = 8, p < 0.01) and a Senior Counsellor who predicted 64% ($\chi^2$ (1, N = 54) = 4.25, p < 0.01). Further, examination of the data showed that a response bias (eg: always predicting in a negative or neutral way) could not account for differences in rater accuracy.

b) The predictions of outcome made by the whole staff group were then combined to produce a mean outcome prediction score per participant. When compared to actual outcome this was found accurately to predict 62% of the cases ($\chi^2$ (1, N = 54) = 7.41, p < 0.01).

c) Patient one-year outcomes were examined using a logistic regression analysis (SPSS Version 6) of the 18 ratings giving the staff predictions. Three measures significantly predicted one-year outcome. The First was the prediction about whether the patient had any particular difficulties they had still to overcome (Wald statistic = 6.4771 p = 0.0109, partial correlation = 0.2447). Therefore, compared to high scores (where high scores = good outcome, i.e. no difficulties) low scores were associated with poor drinking outcome.

The second variable significantly predicting outcome was the staff’s prediction of future drinking status (Wald = 5.0002, p = 0.0253, partial correlation = -0.2003). Therefore, compared to high scores on the drinking outcome scale (where high scores indicated predictions of good outcome, i.e. more likely to achieve remitted status), low scores were associated with poor drinking outcome.

The third variable that significantly predicted outcome was the prediction that patients would carry out their discharge plans (Wald = 4.5823, p = 0.0323, partial correlation = -0.1858). Therefore, compared with high scores on this scale (where high scores indicated predictions of good outcome, i.e., more likely to carry out discharge plans), low scores were associated with poor drinking outcome.

The derived model for classifying outcome was significant and resulted in correct classification of 89.29% of the poor outcome group, and 84.62% of the good outcome group. Overall, the correct classification rate was 87.04% ($\chi^2$ = 43.299, p = 0.01).
Patients  The same analysis was conducted on peer data.

a) Using chi-square analysis, it was found that no peer was a successful predictor of his or her fellow patient's drinking status at one year. This may relate to the fact that no patient rated more than 8 of their peers and some as few as two (average = 4). Closer inspection of the data found that four patients showed strong response bias, (i.e.: 2 were pessimistic about all patients they rated while 2 were optimistic) but, this did not relate to their own drinking outcome. Further, there was no difference between raters who were themselves remitted at follow-up and those raters who relapsed. The remitted patients classified peer outcome correctly in 49% of cases, while relapsed patients were correct in 44% of cases, i.e. all were performing at chance level.

b) The predictions of outcome made by all the peers were then combined to produce a group mean prediction outcome score for each patient and again the accuracy of prediction was not above the chance (50%) level.

c) A logistic regression analysis of the peer prediction data failed to develop a significant model for classifying outcome.

Predictions of Psychological Distress

Use of a cut-off score of 3 on the GHQ12 at 12 months follow-up classified 43% of the sample as 'cases' (of probable psychiatric disorder) and 57% as non-cases. (See Table I)

Statistical analysis using t-tests indicated that non-cases had been rated by staff at intake as significantly less prone to negative emotional states ($m = 3.54$ SD = 1.48 v. $M = 3.03$ SD = 1.37; $t (49) = 2.27 p < 0.05$); and more likely to have family/social support ($m = 11.86$ SD 2.64 v. $M = 10.04$ SD = 2.85; $t (49) = 2.44 p < 0.05$).

Peers also rated non-cases as significantly more able to cope with stress ($m = 4.2$ SD 0.79 v. $M = 3.62$ SD = 0.82 $t (45) = 2.46 p < 0.05$).

<table>
<thead>
<tr>
<th>GHQ12 Score</th>
<th>N</th>
<th>Mean</th>
<th>Range</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3 (non-case)</td>
<td>29</td>
<td>0.31</td>
<td>0-2</td>
<td>57%</td>
</tr>
<tr>
<td>3-12 (case)</td>
<td>22</td>
<td>7.95</td>
<td>4-12</td>
<td>43%</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>3.61</td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>
Prediction of Family and Social Support

Staff's rating of future family and social support was assessed using ratings of three statements: likely to establish good relationship with spouse; likely to get support from family; likely to get support from friends. There were significant correlations between these three ratings and SOS measures at 12 months follow-up for the discrepancy between actual and ideal emotional support \( r(50) = -0.38, p < .01 \); for number of supporters, \( r(50) = 0.31, p < .05 \); and practical social support scores, \( r(50) = -0.31, p < 0.05 \). Further, staff predictions of patient’s future social support was negatively correlated with the conflict subscale of the (patient-rated) FES at follow-up, \( r(40) = 0.41, p < 0.01 \).

Peer predictions showed a similar pattern. Peer predicted social support correlated at one year follow-up with individual patient’s smaller self-rated discrepancies between actual and ideal emotional support \( r = -0.371 (41) p < 0.05 \) and with lower ratings on the conflict subscale of the FES \( r = -0.4 (22) p < 0.05 \).

DISCUSSION

This study provides some support for the value of assessing dynamic or clinical predictors of outcome following treatment for problem drinking, echoing findings in other clinical fields such as adult offending (Gendreau, et al., 1995).

In contrast to patients’ peers, staff as a group were found to be reasonably accurate predictors of future drinking status. Study findings also suggest that staff predictions can also be valid at one year post-treatment.

Significant staff predictors in addition to predicted drinking status included the perception that the individual had significant difficulties still to overcome and the predicted likelihood of carrying out their discharge plans. While the former may relate to the accurate perception of problems that remained despite therapy, the latter may relate to a perceived commitment to succeed found in previous research (Vannicelli & Becker, 1981; Schuckit, et al. 1993).

The finding that patients as a group were in general more optimistic than staff about their fellow patients’ future functioning accords with previous research (Lasky et al. 1959), and reflects the tendency for patients to have unrealistically high expectations at discharge (Ryachtarik, et al. 1992). This may limit the patient’s objectivity and isolate them from factual or statistical considerations.

Patients’ poor predictive ability, however, related only to future drinking status broadly defined, and they were generally more accurate predictors of psychological distress and family and social support.

An expectedly high proportion of follow-up patients qualified as ‘cases’ on the GHQ12. The figure of 43% accords with estimates of the incidence of
Current psychiatric disorder in alcoholics and drug addicts (Allan, 1991). Staff, and to a lesser extent patients, were accurate predictors of psychological distress at 12 months follow-up: a finding of importance as generally poorer outcome is associated with the presence of co-existing psychiatric problems among alcoholics (Rounsaville, et al. 1987).

Staff and patients' predictions of future family and social support were also accurate, and these were negatively correlated with the level of conflict within the family. These findings are important in view of the relationship between outcome and social support and family functioning (Billings & Moos, 1983; Moos, Finney & Cronkite, 1990). Billings & Moos (1983), for example, found that poor family cohesion, exemplified by a lack of expressiveness and the presence of conflict, is found more frequently in relapsed alcoholics.

In contrast to patients, the staff group contained good and poor judges. These findings support studies that highlight individual differences in the accuracy of clinical judgment (Sandell, 1988; 1991). In accord with evidence that predictive accuracy varies with profession (Lasky, et al. 1959; Sepejak, et al. 1983), and is related to level of professional training (Sandell, 1991; Shapiro, 1977) accurate judges tended to be more senior and experienced staff. Several studies have shown that it is possible to improve the reliability of predictions by devising a statistical model based on observations of how one or more experienced clinicians combine information on their clients (Goldberg, 1970). Although the current design did not extend to assessing what factors good and bad judges had taken into account in forming their prognosis, it may be significant that 2 of the 3 best judges had less day to day contact and may therefore have been more detached/objective. In this context the performance of poor judges may indicate their relative lack of knowledge of relapse factors, or a failure to use this knowledge when making predictions (Gambrill, 1990).

To date several authors have suggested ways in which statistical aids such as Bayes Theorem can be used to combine subjective beliefs with objective data to arrive at subjective probabilities (Gambrill, 1990). The value of using dynamic predictors of outcome in combination with static predictors has been illustrated in the field of recidivism in work using the Psychopathy Checklist-Screening Version (Hart, et al., 1994). This measure taps a complete array of factors (related to life-style, behaviour and attitudes) rather than a single psychological factor. Thus far, however, investigations on clinical versus actuarial judgment appear to have had little impact on an everyday decision-making (Dawes, et al. 1989).

Features of the current study limit the generalization of its findings. These include a relatively small sample (N = 54) of well educated and socially stable problem drinkers and the lack of an exact correspondence between some predictive and outcome measures. However, current findings indicate that the
'hit' rate of even the best predictors means that one-third of patients will be misclassified if only these judgements are used. This is of clinical significance if advice is to be given regarding aftercare and the viability of controlled drinking. Further, if the accuracy of prognosis was improved there are potentially far reaching consequences for working with problem drinkers. What should clinicians do in terms of advising spouses, employers, courts and the driving licensing authorities when he or she can accurately predict a negative response to care? What effect would the honest transmission of such a judgment have on the motivation of patients in treatment? In view of the importance of the helping alliance (Mohl, et al. 1991) and the potential effects of staff expectancies in exerting both positive and negative effects on treatment outcome (Leake & King, 1977) what effect would accurate prognostic information have on therapist enthusiasm (Pygmalion in the clinic)?

As yet mental health practitioners are limited by the lack of a general theory of human behaviour that permits accurate prediction. Factors that may limit the accuracy of prediction include the lack of cross situational consistency for any type of behaviour (Arthur, 1971), the prediction errors to which clinicians are prone (Gambrill, 1990), the complex and fluctuating nature of the history of alcoholism (Ludwig, 1972), and the multiple of uncontrolled variables that impact on outcome (Schuckit, et al. 1993). In the absence of a prediction 'formula' that incorporates a complex array of dynamic factors, practitioners may yet be best guided by individual patient-specific beliefs that changes will or will not be achieved (self-efficacy expectations) in view of their more consistent relationship with future addictive behaviour (Rychtarik, et al. 1992). However, this research provides no support for the contention that problem drinkers are accurate predictors of their peers' future drinking behaviour.

Acknowledgement

We are indebted to Dr Tony Jukes who provided the impetus for this research and to Gillian Roberts and Karen Leadley who helped with data collection. Particular thanks are due to Dr Tim Kidger and the staff on the Thomas Prichard Addiction Unit (Ken Marriott, Ellen Banyard, Faye Baker, Lorraine Walker, Liz Robertson) who participated in the study and commented on earlier versions of this paper. Also to the many patients who agreed to participate.

References


APPENDIX

PREDICTION RATING SCALE

How long have you known?

....................................................................................................................... weeks days

Please rate this person on the following dimensions:

How well do you feel you know this person? 1 2 3 4 5 6
(1 = Not at all well 6 = Extremely well)

How well do you feel they have done on the TPU course? 1 2 3 4 5 6
(1 = Not at all well 6 = Extremely well)

How well you feel they have got on with the rest of the group? 1 2 3 4 5 6
(1 = Not at all well 6 = Extremely well)

Do you feel there are particular difficulties this individual has still to overcome?
YES NO
(If yes, please state what)

We would appreciate your opinion regarding how well you think he/she will do in overcoming their drink/drug problem. Could you therefore please rate this person on the following dimensions.

1. Future control over alcohol/drugs. 1 2 3 4 5 6
   (1 = Little 6 = A Great Deal)

2. Determination to succeed. 1 2 3 4 5 6
   (1 = Weak 6 = Strong)

3. Ability to cope with stress. 1 2 3 4 5 6
   (1 = Incapable 6 = Very Capable)

4. Likely to drink again. 1 2 3 4 5 6

5. Likely to be re-admitted for treatment for drink/drug problems. 1 2 3 4 5 6

6. Likely to return to problem drinking 1 2 3 4 5 6
7. Likely to establish good relationship with spouse.
8. Likely to encounter legal problems because of drug use (e.g., drink/driving offences).
9. Likely to have financial problems.
10. Likely to carry out discharge plans.
11. Likely to develop dependence on another drug.
12. Likely to be satisfied with their life.
13. Likely to achieve their goals in life.
14. Likely to continue to seek help and support with their problem after discharge (e.g., attending follow-up, individual sessions, AA).
15. Likely to be under stress in the future.
16. Likely to get support from friends.
17. Likely to get support from family.
18. Likely to be prone to negative moods states (anxiety, depression, anger etc.).
Four studies within this thesis have examined factors prognostic of outcome: findings have endorsed the potential usefulness of variables that include self-efficacy; a goal choice of abstinence; therapist prediction of outcome; a greater perception of treatment as helpful; a lower perception of staff control; a reduction in psychological symptoms during treatment; together with specific intake variables (longer drink free periods prior to treatment and having drank in fewer situations and locations). These findings are consistent with recent research on the predictive utility of within-treatment variables and therapist prognosis ratings, following brief behavioural motivational intervention with 212 out-patients who were low to moderately dependent on alcohol (Breslin et al, 1997). In a repeated measures design (pre-treatment, within-treatment and 6-months post-treatment) within treatment, drinking pattern and cognitive variables (including self-efficacy and goal choice) were measured. A hierarchical multiple regression analysis showed that therapist ratings improve outcome prediction even after pre-treatment characteristics are controlled.

The study by Long et al, (1997) suggested that certain therapists were able to predict outcome. The study by Breslin et al, (1997) qualifies this further, suggesting that while therapist prognosis ratings can be useful information in making treatment decisions, this is only the case when no systematic monitoring of within-treatment drinking and drinking goals occurs. When within-treatment measures are available for prediction therapist ratings no longer account for a significant amount of unique variance. A second major finding of the Breslin et al, (1997) study was that within-treatment variables (drinks per drinking day within-treatment and end of treatment abstinence goal), were significant predictors even after pre-treatment and therapist ratings are controlled. The findings may suggest that therapists who accumulate a great deal of complex information about participants treatment may be distracted from key valid predictors such as within-treatment drinking, or alternatively do not use this information to their best advantage.

Clearly studies such as this do not include in their analysis a number of variables such as coping skills and social support that may enhance the accuracy of any predictive model. They do however, strongly suggest that within-treatment measures may be helpful in making treatment decisions, adding to what can be learnt from pre-treatment variables alone. In addition to the issue of determining who may require further treatment, there is the issue of what supplemental intervention to provide. A number of smoking cessation studies have examined this area (Orleans, 1993). Examples of supplemental procedures include telephone contacts and personalised computer-generated progress reports (Glynn et al, 1990) and the use of procedures aimed at identifying and overcoming
barriers to change (Sobell & Sobell, 1993a). Chaining manualized treatment protocol, such as those used in Project MATCH, could also be a fruitful avenue of clinical research. Thus, alcohol treatment programmes could emulate a public health model where multiple treatment options are available not only at the beginning of treatment but also during treatment and during aftercare.
DISCUSSION
A greater research emphasis in health services is now being implemented vigorously in the United Kingdom in the form of the Research & Development initiative (Peckham, 1991). One implication of this for alcohol treatment service development and for training is evidence-based-practise (EBP). Roth and Fonagy (1996) define EBP as the heart of a multiphase process, involving a cycle of relevant research, the drawing up of clinical guidelines and appropriate training. These sources provide practitioners with the evidence upon which to form clinical judgments concerning the treatment of specific patients. Having exercised this judgment and implemented a treatment, evidence-based practitioners should then audit their work, participate in outcome benchmarking studies and contribute ideas that influence future research. This thesis has attempted to describe parts of this process within an alcohol-treatment unit. It is illustrated in a diagram provided by Roth and Fonagy (1996) which sets out a definition of EBP (see Figure 1).

Roth and Fonagy's (1996) model of the evidence-based practitioner differs from the traditional "scientist-practitioner" model in certain respects. Most striking is the way research is set out as an integral part of an elaborate support system that is designed to foster the implementation of the best available evidence for the benefit of patients. This helps to ensure engagement in collaborative (multidisciplinary) research that is of direct relevance to local and national practice. The evidence-based practitioner's model also allows for the abandonment of monolithic scientist-practitioner ideas in favour of its more widely achievable components: the "empirical clinician" who consumes and utilises research (ie, following clinical guidelines); the "evaluative clinical scientist" who undertakes pragmatic and implementation research (that is, benchmarking and audits); and the "clinical scientist" who is a specialist in producing exploratory research (eg, running randomised controlled trials to develop the basic knowledge base of psychology) (Milne & Paxton, in press). The research described within this thesis is concerned with work of the empirical clinician who, as part of a multidisciplinary team, consumes and utilises relevant research to develop new treatment guidelines; and with the work of the "evaluative clinical scientist" that has focused on pragmatic research concerned with outcome audit, cost effectiveness and factors associated with specific treatment results.

The treatment of alcohol problems has progressed significantly in the United Kingdom over the last 20 years; with four major policy shifts occurring: a positive change in the attitude of the medical profession, the provision of community care and an increased willingness among policy makers to concur with the demands for greater service
Figure 1. A diagrammatic study of the relationship between evidence-based practice (EBP) and its support systems (from Roth and Fonagy, 1996)
provision, coupled with the recognition of the harm caused by alcohol related problems (Anderson, 1990). These have led to improvements in the range of treatment responses to alcohol problems. However, there is no clearly articulated UK alcohol policy that would help point the way forward to coherent service development and there have been few British outcome studies of effectiveness (Raistrick et al, 1999). Only a small proportion (2.1%) of alcohol treatment studies in the published literature are from the United Kingdom (Sobell et al, 1987) and extrapolation of results between different cultures' models of addiction can be hazardous.

In terms of the Research and Development strategy, the preceding research is a 'development' activity (Peckham, 1991; Department of Health, 1996). That is, it is an analysis of the introduction into practice of an alternative form of care that has some demonstrated effectiveness. In particular, the focus has been on instruments that might be used to measure the effectiveness of two comparable methods of treatment for problem drinking and on factors that may be related to change. It has not been the aim of these studies to demonstrate a causal link between specific alcohol treatments and clinical outcomes. The research has a quasi-experimental sequential design in which multiple measures were applied before and after succeeding treatments. Such a design is not sufficiently rigorous to exclude a range of alternative explanations for any obtained outcomes (Campbell & Stanley, 1963). In view of a lack of control samples and the characteristics of the participants (generally better educated and socially stable) the extent to which the current findings can be generalised is questionable. This said, problems of external validity are a factor in even the best designed therapy trials as the retrospective appraisals of Project ASHTON show (Ashton, 1999).

The methodological problems encountered in conducting evaluation and outcome research are considerable (Orchard, 1994) and the specific methodology appropriate for evaluating the outcome of treatment for alcohol dependency has been addressed by Sobell et al (1980). In today's climate however, there is clearly a niche for alcohol treatment units to conduct investigations to audit their outcome efficacy. While this falls short of the "gold standard" of a randomised controlled trial (Orchard, 1994), it nevertheless displays an intention to approach the matter in a more systematic way than impressions or values alone would permit. Units unable to provide themselves or their purchasers with outcome feedback are vulnerable to funding problems. They may at best have a vicarious reliance on data from other agencies reported in the literature.

The present research has attempted to articulate some of the different dimensions that
should be considered in an analysis of an alcohol treatment service, and has covered an account of the various instruments that are available for this kind of analysis. There is a growing recognition that measures used in routine clinical practice need to be straightforward, psychometrically sound and easily integrated with the service (Department of Health, 1996). The research has attempted to answer some key questions one might raise about a service, to which some replies are provided based on the comparative evaluation of two different alcohol treatment programmes. These questions can be grouped under the quality assurance categories of structure, process and outcome (Donabedian, 1992). 'Structure' is concerned with the resources required to provide service (e.g., the number and level of training of staff); 'process' addresses how these resources might be deployed; while 'outcome' focuses on the results of this process.

**Structure:** Both treatment programmes had 'keyworker' systems and multidisciplinary teams. There was only one change of staff over the study period and, accordingly, both treatment programmes were administered by largely the same therapists. An ongoing programme of unit specific professional development characterised both treatment regimes. In keeping with the quasi-experimental design there was no selection of patients, although there was matching by age, sex and level of dependence. The findings illustrate that the mean length of stay was significantly different for the two programmes, with the revised programme reducing stay to an average of 14 days from a previous 19 days.

**Process:** Central to the development and evaluation of an evidence-based treatment programme, has been the active involvement of treatment staff in the change process and the adherence to principles found to mediate effective change within clinical settings (Fairweather et al, 1974). The social context of care was also examined using both Work Environment Scale (a measure of staff perception of the unit's 'atmosphere') and the COPES, the Community-Oriented Programmes Environment Scale: (Moos, 1988) – a measure of the client's perception. Both measures were consistent over time, indicating that a positive unit atmosphere was maintained for both staff and patients, despite programme alteration. The transition from a 5-week residential to a 2-week in- and day-patient programme has thus been achieved without any significant alteration in what staff perceive to be a positive work environment (Long et al, 1995). Such findings further confirm that the staff work environment is an important component of the alcohol treatment system (Moos & Moos, 1998).
A number of other measures were used to analyse treatment process: in particular the therapeutic alliance was examined using the Working Alliance Inventory. A recent paper published by the Project MATCH group (Connors et al, 1997) supports the idea that the therapeutic alliance is a critical factor in predicting treatment outcome. The current research, however, does not link the strength of the therapist's perception of the treatment alliance to outcome. Rather it suggests that other process or within treatment factors may also be important, albeit that they may overlap with elements that make up the therapeutic alliance: ie, goal choice of abstinence, self-efficacy and a concomitant perception of treatment as helpful.

**Outcome:** The central aim of the evaluation was to look at the clinical outcome achieved by clients in each setting. Such an evaluation needs to take into account the many possible factors that can affect how people get better. These included an examination of intake and process variables, both static and dynamic, in terms of their relationship to outcome. In general terms the analysis supports the notion that subjective/dynamic predictors are more powerful determinants of outcome than historical/static predictors. Most importantly it demonstrates that an evidence-based shortened treatment programme produces comparable outcome results to a five-week in-patient programme that had evolved in relatively random fashion. The ability to demonstrate the cost effectiveness of a revised programme is of paramount importance in today's healthcare system.

However, the value of research undertaken by the evaluative clinical scientist is often undermined by a failure to disseminate effectively the findings of applied psychological science (Beutler et al, 1993). Such a failure can have far reaching consequences in terms of staff and treatment programme development and in terms of influencing purchasers and funders of alcohol treatment services. This is of particular importance in the area of addiction that remains a "Cinderella" service in terms of NHS funding (cf: Raistrick et al, 1999, p204). Beutler et al's, (1993) survey suggested that while clinicians believe research findings are and have been important in modifying practice, they receive "research" information not from research journals but from workshops, popular books and practice oriented journals. Attempts were made therefore to modulate the findings through vehicles of communication valued both by clinicians and purchasers. Accordingly the dissemination of the studies' findings were pursued through a variety of channels: in addition to publication in peer reviewed journals the following initiatives were taken. Purchasers were invited to a workshop on cost effectiveness in alcohol treatment services and this initiative was followed by a lay summary of the studies' results and
practical implications. Finally a "package of care" was defined and disseminated.

One of the practical aims of the evaluation was to complete an audit cycle. Accordingly results of the study were fed back to treatment staff who discussed the implications for programme development of relevant findings. This larger challenge of completing the audit cycle, ie using the data gathered from evaluations to guide service development was achieved effectively in terms of programme change. Some of the benefits of completing the cycle can include reductions in staffing costs and improved clinical outcomes (see for example McKenzie et al, 1995) in addition to promoting 'evidence-based practise'. In the current study helping staff to recognise the need to introduce changes to routine clinical practise represents a significant achievement. This was particularly pleasing given that a number of factors tend to limit the impact of audit (eg, insufficient resources, Robinson, 1996) and the finding that the most common result of completing the audit cycle is negative – for instance only three of the thirteen studies reviewed by Robinson (1994) demonstrated significant changes in routine clinical practise.

While specific to the context in which the research was undertaken the preceding findings need to be set in the context of broader developments within the alcohol treatment field. Key themes likely to retain prominence within the alcohol treatment research include coping styles (Miller et al, 1996), motivational strategies (Miller & Rollnick, 1991), matching (Marlatt, 1999), brief interventions (Zweben & Fleming, 1999) and adjunctive pharmacological interventions (Marlatt, 1999).

As the definition of alcohol and drug abuse has expanded, so have the boundaries of alcohol and drug treatment services. More persons with alcohol related problems are being identified at earlier stages and are receiving services in a variety of settings (Zweben & Fleming, 1999). Entering treatment, however, does not imply that an individual will become successfully engaged. Finney and Moos (1995) argued that seeking and entering treatment are only two steps of a complex, multifaceted treatment selection process. Understanding what motivates the behaviour change process in a problem drinker, as well as the impediments to it, is fundamental to developing interventions to facilitate help seeking and successful behaviour change (Schober & Annis, 1996). Empirically informed interventions designed to increase the individuals' readiness to change and to facilitate the treatment entry process, are likely to be an important part of this future expanded intervention initiatives.
Thus far the comparative testing of predictive models of relapse has only begun and should lead to a clearer understanding of which variables do predict addictive behaviour prospectively, and how they interact (Allen Lowman & Miller, 1996). An example of this approach is found in a prospective study of relapse to drinking (Miller et al, 1996) designed to test Marlatt's conceptual model of relapse as a developmental process (Cummings, Gordon & Marlatt, 1980). It was found that the extent of exposure to high-risk situations was unrelated to relapse risk, but the client's coping style was a significant predictor of outcome. Avoidant coping was associated with an increase relapse risk, while positive thinking was linked to lower relapse risk. Neither self-efficacy or alcohol expectancies increased the prospective predictability of relapse once coping behaviour had been taken into account. However, the extent to which the client endorsed a disease model of alcoholism (Moyers & Miller, 1993) contributed unique variance: disease beliefs were consistently associated with a higher risk of relapse.

Future developments within the field will undoubtedly also focus on attempts to repeat, refine and extend the findings of the most rigorous psychotherapy trial to date – Project MATCH. Despite the many caveats about Project MATCH as a reliable and valid test of treatment matching the National Institute on Alcohol Abuse and Alcoholism (NIAAA) is sponsoring a sequel study entitled Project COMBINE. This new matching study will randomly assign alcohol-dependent clients to one or both of two pharmacotherapies (naltraxone or acamprosate, both considered to be anti-craving agents) or placebo medications combined with either a behavioural intervention (to be selected from among the three treatments in the original Project MATCH study), or a programme designed to enhance medication compliance. Since this new study is currently in its early stages the results will not be known for some time (Marlatt, 1999). A British initiative – the British Multicentre Trial of Treatment for Alcohol Problems (Heather, 1996), is also underway and aims to compare four treatments (brief motivational enhancement therapy; coping skills training; self-esteem therapy; and network support therapy) using 700 plus participants. The research aims to assess both main outcome effects and economic factors and focuses on three outstanding issues in the field of alcohol problem treatment:

(a) society (eg, environmental) versus individually based treatment;
(b) alcohol focused versus non-alcohol focused therapy;
(c) intensive versus brief treatment.

International research developments such as the above exemplify the work of the 'clinical scientists' (Milne & Paxton, in press). The changes that the U.K. Research and
Development initiative has introduced can be seen as signalling a new era for the scientist-practitioner model, one in which the environment (research and development initiative, information age and so on) favours the evolution of the evidence-based practitioner. This will foster two developments that are central to the ongoing development of best practise in clinical care. The first is the support that the evidence-based practise model (Fig.1) gives to those aspects of clinical work that less formally exemplify an empirical approach to our work. As Barlow et al. (1984) note, scientist-practitioners gather and analyse data in relation to hypotheses about their clients, predictions that are derived from the literature. They then attempt to facilitate change and to evaluate their efforts using a scaled down informal version of the experimental method as appropriate for professional practise (and exemplified by single case study methodology). The second is the development of cross-profession and a cross-organisation research consortia that are a prerequisite for competitive research and development funding. Thus, research production by evidence-based practitioners is likely to be communicated more effectively to other professionals and to bolster a cumulative research process.

To date the current research has served to motivate staff, to clarify a clear direction in therapy and to enhance the functioning and cohesiveness of a close-knit and specialist treatment team. Staff have been energised by the research process and the outcome results have fostered a sense of pride in their unit. Informal observation suggests that staff team has become increasingly conscious of and responsive to researched treatment developments, more routinely willing to examine and change established practise and more positive about outcome evaluation. Data gathered have greatly helped the unit 'sell' a quality clinical programme to cost conscious purchasers (including patients), via the development of "packages of care". While there are no further avenues to explore with current data set, it provides us with information that will generate hypotheses for future research. The research has served both its interpersonal and political purposes to date, but ongoing development necessitates the start of a further cycle of research review, clinical programme refinement, outcome audit and knowledge dissemination.
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