READINESS TO CHANGE IN ALCOHOL-RELATED ILLNESS: THE ROLE OF PERCEIVED CONTROL, CAUSAL ATTRIBUTIONS AND ILLNESS BELIEFS.

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by

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ABSTRACT

READINESS TO CHANGE IN ALCOHOL-RELATED ILLNESS: THE ROLE OF PERCEIVED CONTROL, CAUSAL ATTRIBUTIONS AND ILLNESS BELIEFS.

AIMS & OBJECTIVES: This research thesis is based on an exploratory study that investigated the influence of health- and drinking-related factors on motivation to change drinking behaviour in alcohol-related illness. Key factors relevant to behavioural intentions to change were drawn together from health and substance-dependency literature. The aim was to demonstrate links between causal, control and efficacy beliefs and readiness to change. Specific hypotheses were proposed for relationships between causal attributions, perceived control, abstinence self-efficacy, health value, alcohol dependency and stage of change.

METHOD: The study involved 33 male and female participants diagnosed with an alcohol-related illness. The sample included hospital in-patients and those seeking help from community agencies. Participants completed a semi-structured interview and six questionnaire measures, administered by the researcher. Relationships between variables were examined using bivariate analyses. The relative power of variables as predictors of readiness to change were examined using regression analysis.

RESULTS: Significant differences were found between those classified as 'ready to change' and those 'not ready to change' in terms of alcohol dependency and abstinence self-efficacy. Perceived dependency was a significant and strong predictor of readiness to change. Behavioural self-blame, perceived control, and health-value were not significantly related to readiness to change. No significant relationships were found between perceived control and either self-efficacy or behavioural self-blame. However, significant relationships were found between alcohol dependency and both abstinence self-efficacy and perceived control over illness.

CONCLUSIONS: The intensity, timing and type of intervention should be responsive to the motivational stage of the individual. The clinician needs to assess clients' beliefs about the nature of their drinking problem. Problem drinkers need knowledge about how to regulate their behaviour and firm belief in their personal efficacy to take effective action and personal control over outcomes.
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1. INTRODUCTION

"I do not understand my own actions. For I do not do what I want to do, but I do the very thing I hate" (Romans 7:15, Revised Standard Version)

1.0 PREFACE

This section will begin by outlining the aims of the research. It will then describe addictive behaviour, its nature and extent, with particular reference to the challenges posed to health care by alcohol-dependency. It will then draw together key concepts from both the health psychology and alcohol-dependency literature concerned with health-behaviour change. This includes literature concerned with individuals’ responses to health threats and prediction of health-related behaviour. Substance-dependency research related to the process of change and associated motivational factors will be considered. Finally, the research questions will be outlined and hypotheses stated.

1.1 AIMS OF THE RESEARCH

This is an exploratory study to investigate behavioural intentions to change drinking behaviour amongst people with alcohol-related illnesses, both hospital in-patients and those seeking help from community agencies. The aim is draw together key factors from health and substance-dependency literature to look at predictors of readiness to change. The research focuses on individuals diagnosed with alcohol-related illness, primarily liver disease, where a causal link to drinking has been verified. At a theoretical level, it is aimed to demonstrate links between specific causal, control, and efficacy beliefs and ‘stage of change’, in order to support the proposal of a preliminary model of motivational factors. At a clinical level, identification of factors predicting higher stages of change implies that targeting these areas in counselling would be beneficial in increasing motivation.
1.2 THE NATURE OF ADDICTIVE BEHAVIOUR

Humans have a propensity to pursue patterns of behaviour that are pleasurable and rewarding to them, yet it is apparent that they also have the capacity to demonstrate self-damaging behaviour. The lifestyles of many people include behaviours that are risk factors for illness and injury, for example lack of exercise, overeating, smoking or excess use of alcohol. Written reports of the use of alcohol date back to 3000 BC, before the eras of ancient Egypt, Greece and Rome (Sarafino, 1998). Most people in the UK drink alcohol at least occasionally and it is generally viewed as a socially acceptable and pleasurable drug (Godfrey, 1997). However, alcohol is a drug with significant pharmacological and toxic effects and its prolonged or excessive use contributes to a wide range of physical and psychological problems.

In the case of substance dependency, people do not always, or even often, act rationally, or in ways that would seem to be in their best interests (Kanfer, 1986). One of the defining features is the persistence of behaviour despite negative consequences, with the pursuit of short-term gratification at the expense of long-term harm. Often the person is quite aware of the damaging consequences of their behaviour and has resolved to control or abandon it, yet time and again returns to the old familiar pattern (Miller & Rollnick, 1991). This led Hosen (1993) to describe addiction and dependence as “flawed strategies for achieving pleasure, while attempting to circumvent the costs imposed by the laws of biology and psychology” (p. 1).

The Challenge to Health Care of Alcohol Dependency

A long-standing challenge to health care is the fact that many people die prematurely or suffer debilitating ill-health due to conditions that are strongly affected by behavioural factors and are therefore to a large extent preventable (Department of Health, 1991). Alcohol and drug abuse constitute a major public health concern. Alcohol consumption is a major cause of morbidity and mortality in the UK, with the mortality rate of heavy drinkers being over twice that of the normal population (Popham, Schmidt, & Israelstam, 1984). In 1991, there were 3023 deaths in England and Wales from liver disease and cirrhosis, both strongly associated with alcohol (Department of Health, 1991).
Medical in-patients are known to have a high prevalence of alcohol problems, with studies indicating figures of just over a quarter having a current or previous alcohol problem (Lloyd, Chick, Crombie, & Anderston, 1986). The likelihood of being admitted to a general hospital for liver disease, cardiovascular disease, gastrointestinal disease and acute trauma increases progressively as admitted alcohol intake increases (Chick, Duffy, Lloyd, & Ritson, 1986). Up to 90% of heavy drinkers develop alcoholic fatty liver after about three years of use. This is usually asymptomatic and at this stage, abstinence for between three and six months will enable the liver to regenerate itself (Fyffe, 1996). Alcoholic cirrhosis develops in 8-30% of drinkers with a 10-20 year history of daily heavy drinking (Marshall, 1997). Forty per cent of patients with cirrhosis die within a year of diagnosis and only one patient in three survives five years (Saunders, 1982). Recovery and future prognosis depend on the ability of the individual to abstain from alcohol, yet the experience of hospital liver units is that most patients continue to drink, despite already damaging a vital organ such as the liver (Wodak, Saunders, Ewusi, Davis, & Williams, 1983). Inevitably, the treatment of alcohol-related disorders leads to significant demands on health authority expenditure (Department of Health, 1991). The White Paper “Our Healthier Nation” states that government priority is to concentrate on a range of factors to do with how we live our lives, such as diet, physical activity, smoking, sexual behaviour, alcohol and drug use, which affect people’s health (Department of Health, 1998).

**The Problem of Relapse**

Alcohol dependency is a particular challenge as drinking habits are very difficult to change once they are established. Although many people may successfully undergo alcohol detoxification treatment, changes in behaviour are difficult to maintain (Miller & Hester, 1980). High rates of relapse appear to be the norm rather than the exception, with between 60-90% of alcohol patients failing to maintain abstinence for three months following a treatment episode (Glautier & Drummond, 1994). Given that alcohol-induced harm arises in many instances because people cannot maintain abstinence for long enough periods of time, the question arises as to what does motivate successful behaviour change.

Although some people persevere with addictive behaviour against all logic and reason, others make dramatic changes and give up or curtail long-established and deeply ingrained patterns of
behaviour (Orford, 1986). When faced with a health threat, some may reduce or stop drinking, whilst others continue to drink, despite deteriorating health. The outcome is varied and despite wide ranging investigation, it seems that the ability of health practitioners to predict those who will make changes and those who will not remains rather limited (Orford, 1986). Individuals with substance-use problems are faced with a conflict between indulgence and restraint, each with associated advantages and disadvantages. All too often, the short-term benefits of indulgence are more powerful. The onset of alcohol-related illness is likely to alter the balance of costs and benefits. The question therefore arises as to the impact of such an illness on drinking behaviour.

The current study draws on two substantial bodies of theoretical and research literature in an attempt to examine the impact of alcohol-related illness on readiness to change drinking behaviour. In health psychology, there is a vast literature examining health-related behaviour and attempting to identify cognitive processes influencing behaviour change. Frequently, this has focused on smoking, in relation to conditions such as coronary heart disease and hypertension; little attention has been paid to behavioural factors contributing to the development of alcohol-related illness such as liver cirrhosis. In the substance-dependency field, stage models have been proposed, representing the temporal, motivational and developmental aspects of the process of changing an addictive behaviour. There has also been considerable interest in identification of cognitive or situational factors predicting relapse. This has largely focused on individuals in contact with alcohol treatment services, with relatively little discussion of drinkers identified in other settings, such as general hospitals, who are not presenting for treatment for their drinking problems. Integration of ideas and models between the two fields has been limited. There is a dearth of literature relating to the impact of ill-health on individuals' beliefs about their drinking. Given the extent of the problem with alcohol and the costs to both individuals and wider society, this seems a surprising omission and an important area for investigation.

1.3 THE CONCEPT OF 'HEALTH VALUE'

To the extent that human behaviour is under conscious direction, people generally act in ways that promote the achievement of things in life that they value and, faced with a choice between
two conflicting goals, usually try to obtain the more desired goal (Lau, Hartman, & Ware, 1986). The concept of health as a value has been surprisingly under-utilised in health research, particularly given the apparent importance of positive expectations of outcome in motivating action. Researchers have frequently assumed that all people uniformly place a very high value on health (Lau et al., 1986). An exception to this is the work of Wallston and colleagues exploring the health locus of control concept (Wallston & Wallston, 1981). In the present review, key concepts in health-related behaviour are discussed, with the assumption that high health value is an important pre-requisite in motivating behaviour change. For example, Wallston & Wallston (1981) argued that health locus of control beliefs should only predict health behaviour when people value their own health. In order to improve the predictive ability of their model, Wallston (1992) incorporated self-efficacy and health value as predictors of behaviour. This modified model stated that self-efficacy predicts health behaviour when the individual also values their health and has an internal locus of control. A similar argument could be applied to causal attributions and efficacy beliefs in relation to alcohol-related illness. It cannot be assumed that belief in personal ability to abstain from drinking will be associated with actually stopping, if the person does not a) value their health, and b) believe that stopping would improve their health. This seems closely linked to Bandura's (1977) notion of outcome-expectancy, that in order to be active in pursuing a particular action, individuals need to believe that they have the competence to pursue that action and also to believe the outcome is worthwhile.

1.4 MODELS OF HEALTH-RELATED BEHAVIOUR

A number of social cognition models have been developed in health psychology which attempt to describe important cognitive factors in regulating health-behaviour and the interrelationships between them. These include attribution models concerned with individuals’ causal explanations of health-related events, and models examining key cognitions in order to predict health-related behaviour. The social cognition approach is concerned with how individuals make sense of social situations and emphasises cognitions as processes that intervene between observable stimuli and people’s responses in specific situations (Fiske & Taylor, 1991). These cognitions can be broadly split into how people make sense of others (person perception) and how people make
sense of themselves (self-regulation). The primary focus here is on self-regulation processes and how various social cognitions regulate behaviour. This section will review some of the most commonly used models in predicting health-related behaviour, including the Health Belief Model (Becker, 1974), the Theory of Planned Behaviour (Ajzen, 1991; Ajzen & Fishbein, 1980), Protection Motivation Theory (Maddux & Rogers, 1983), Health Locus of Control (Wallston, Wallston, & DeVellis, 1978), and Self-efficacy theory (Bandura, 1977). Other models include Self-Regulation Theory (Leventhal, Nerenz, & Strauss, 1982). Though this has not as yet been widely applied to the prediction of health behaviours, it will also be discussed as it is relevant to the questions addressed in the current study.

1.4.1 REVIEW OF SOCIAL COGNITION MODELS

This is not intended as a comprehensive review of social cognition models, but rather an overview of those most commonly used in the study of health-related behaviour. These models view health-related behaviours as resulting from a number of factors, including the perceived costs and benefits of seeking treatment, the perceived seriousness of the condition, and the ability of the individual to carry out the requisite behaviour. A common assumption is that anticipation of a negative health outcome and the desire to avoid or reduce the impact of this outcome creates motivation for self-protective behaviours (Williams, 1997). Initially, a brief summary of three of these models and their key concepts is given. Self-Regulation theory (Leventhal et al., 1982), Health Locus of Control theory (Wallston et al., 1978), and Self-Efficacy theory (Bandura, 1977) are discussed in greater detail, as they are more central to the specific research questions identified.

**Health Belief Model**

The Health Belief Model (Becker, 1974) focuses on individuals’ perceptions of illness threat and behavioural evaluation of actions to counteract this threat. ‘Perceived threat’ is seen to depend upon both the perceived susceptibility to the illness and the anticipated severity of the consequences of such illness. ‘Behavioural evaluation’ involves beliefs about the benefits of a particular action and the perceived costs or barriers to performing that behaviour (Becker, 1974). In addition, the model proposes that, when appropriate beliefs are held, ‘cues to action’
may trigger health-related behaviour. These cues include internal and external triggers such as perceptions of symptoms, social influence and health-education campaigns (Abraham & Sheeran, 1997). So, individuals are considered likely to follow a particular health-related action if they believe themselves to be susceptible to a particular condition, that the condition is serious, and that the benefits of action to counteract the health threat outweigh the costs.

The Health Belief Model has been criticised on a number of grounds, including its focus on rational processing of information and the absence of a role for emotional factors such as fear and denial (Ogden, 1996). Schwarzer (1992) further criticised the Health Belief Model for its static approach to health beliefs, with no room for development or process. Others have similarly commented that it ignores the dynamic processes guiding health-related behaviours over time (Cameron & Leventhal, 1995; Skelton & Croyle, 1991). The model does not propose any cognitive mechanism by which beliefs about the threat of illness and preventative behaviour are translated into action. Such a mechanism is central to the theory of planned behaviour.

**Theory of Planned Behaviour**

The Theory of Planned Behaviour (Ajzen, 1991) is an extension of the widely applied Theory of Reasoned Action (Ajzen & Fishbein, 1980). The theory defines ‘behavioural intention’ as a conscious decision or plan to exert effort to perform a given behaviour. It suggests that such an intention is determined by three factors: Firstly, ‘attitudes’ are defined as the product of beliefs about the likely consequences of behaviour and evaluations of those consequences. Secondly, ‘subjective norms’ relate to a person’s perception that significant others think they should engage in the behaviour and their desire to conform to these people’s wishes (Abraham & Sheeran, 1997). Thirdly, ‘perceived behavioural control’ refers to the individual’s perception of the extent to which performance of the behaviour is easy or difficult. This is similar to Bandura’s (1977) concept of self-efficacy and some authors have argued that it is in fact synonymous with self-efficacy beliefs (Conner & Norman, 1996). Thus, a person’s intention to engage in a health action is seen to depend on believing the behaviour will lead to valued outcomes, that people whose views are valued think they should carry out the behaviour, and believing they have the necessary resources and opportunities to perform the behaviour.
Protection Motivation Theory

Roger's (1975; 1983) Protection Motivation Theory describes adaptive and maladaptive coping with a health threat, as the result of two appraisal processes. Firstly, 'threat appraisal' is based on perceptions of the severity of the threat and the likelihood of being exposed to the threat. Secondly, 'coping appraisal' involves assessing the effectiveness of behavioural alternatives for preventing or reducing the threat. Thus, confidence that a health threat can be controlled is seen as requiring a belief that the coping response is effective and can also be performed successfully. Again, these ideas seem similar to Bandura's (1977) construct of personal efficacy: 'coping appraisal' is based on the individual's expectancy that carrying out a given behaviour will remove the threat (outcome-efficacy) and belief in their ability to perform the behaviour concerned (self-efficacy).

It seems unfeasible for a single model to describe adequately the multiplicity of potential factors motivating health-related behaviour. However, having reviewed a number of these models, it is apparent that there is considerable overlap between them in the constructs they describe. Variation between them seems to relate to differences in terminology and labelling of ideas rather than proposal of different underlying constructs. A common feature is the emphasis on individuals' attributions about the cause of their illness and their beliefs about its control. There is a substantial literature concerned with utilising these constructs in understanding behavioural and emotional reactions to health threats. This literature will now be discussed, within the context of various social cognition theories. The first of these, self-regulation theory, holds that perceptions of control are a central aspect of individuals' responses to health threats.

1.4.2 SELF-REGULATION AND ILLNESS REPRESENTATIONS

A fundamental concern of health psychology is the process by which individuals appraise threats to their health (Croyle & Sande, 1988). This seems conceptually similar to the notion of attributions, discussed below. A substantial body of literature dealing specifically with the appraisal of health threats has accumulated. This deals with how people make sense of and respond to health threats by creating personal models or representations of illness (Weinman,
An influential theoretical framework adopted in this work is the Self-regulation model proposed by Leventhal and his colleagues (Leventhal et al., 1982; Leventhal & Diefenbach, 1991; Leventhal, Meyer, & Nerenz, 1980). This model suggests that health-related behaviours and coping responses are heavily influenced by the individual’s existing knowledge and beliefs about an illness. In dealing with health threats, people are considered to seek out information about the threat and interpret that information according to their internal cognitive representations of relevant health matters (Williams, 1997). On the basis of these illness representations, the individual selects a plan of action and they are thus seen as crucial in motivating health-related behaviour.

The self-regulation model conceptualises health-related decisions as dynamic rather than static. Leventhal proposes two processing systems, integrating both internal and external information. The selection of a coping procedure (for example, to drink or smoke less) is determined by beliefs about the nature of the illness threat. This is then followed by an appraisal stage in which the person evaluates the efficacy of their coping strategy. Thus, Leventhal asserts that people do not just think about illness in terms of perceived seriousness or susceptibility, but that they have illness beliefs structured around a number of themes or components. Leventhal and his colleagues provided evidence that individuals have ideas about the identity (label and symptoms of the illness), time-line (likely duration), cause, and consequences (severity and likely impact on functioning) of their illness (Leventhal et al., 1982; Leventhal, Nerenz, & Steele, 1984). Additionally, Lau, Bernard, and Hartman (1989) argued that models of illness also incorporate beliefs concerning the extent to which the illness is believed to be controllable or curable and the process that might bring this about.}

Recent overviews of research in this area, based on differing methodologies across a range of clinical conditions, confirm the consistency and validity of these five components of illness representations (Skelton & Croyle, 1991). Self-regulation and illness representations seem to be important in understanding an individual’s perceptions of their illness and the degree of threat they perceive it to hold. Clearly, such appraisal processes are of interest in understanding how alcohol-dependent individuals perceive threats to their health and respond to illness, particularly
their representations about the controllability of their illness. There is some overlap between Leventhal’s (1982) illness representation components and other social cognition models. Two constructs that have been found to be particularly useful in the analysis of adjustment to health threats are ‘causal attributions’ and ‘beliefs in control’ (Taylor, Lichtman, & Wood, 1984). The theoretical basis of locus of control and attribution theories and their application to health are discussed below. This will lead to an indication of their importance in investigating responses to alcohol-related illness.

1.5 Attribution Theory in Health and Illness

Attributions refer to an individual’s subjective understanding of their environment and their implicit and explicit explanations for behaviour (Turnquist, Harvey, & Anderson, 1988). According to Heider’s (1958) attribution theory, people have an in-built desire to explain their world in order to exercise a greater degree of control over it. He asserted that by identifying causes, individuals are able to give meaning to negative or unexpected events and thereby make their social worlds more stable, predictable and controllable. It is clearly functional to know and understand why an event occurred in order to allow more effective management of yourself and your environment. In accordance with this notion, one of the central tenets of attribution theory is that people spontaneously engage in causal searches when faced with negative, unusual or unexpected outcomes (Wong & Weiner, 1981). This seems particularly applicable to health events such as the onset of illness, as knowledge and understanding of causes may help to prevent further illness.

Attributions are generally classified in terms of a number of dimensions. The first fundamental causal distinction was proposed by Heider (1958). He suggested that outcomes of a particular action depend on two sets of conditions, namely, factors within the individual and those within the environment. He proposed that people tended to favour one of these types of explanation and could be categorised as ‘internals’ or ‘externals’. Later, Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum (1971) argued that two further dimensions of causality were required. They suggested that as well as focusing on the source (or locus) of causality, people make evaluations
of controllability (whether the event is under personal influence) and stability (whether the cause is stable or unstable).

Attributions and causal explanations in relation to health are particularly relevant in the current study since attributions following events are thought to be important as the underpinnings of further judgements, emotional reactions and behaviour (Fiske & Taylor, 1991). As such, they may be particularly relevant in relation to coping with serious illness, with the search for meaning being a crucial step towards positive adjustment (DeValle & Norman, 1992). This has led to numerous attempts to apply attribution theory to health problems. Wong & Weiner (1981) discovered that the most common dimensions to attributional searches were the locus of cause (internal/external) and its controllability (controllable/uncontrollable).

Attributions about illness are not limited to explanations of causality (Benyamini, Leventhal, & Leventhal, 1997). Attributions may also be made regarding the controllability of the course of illness and responsibility for treatment outcome. It is important to distinguish between attributions of the causes of events from attributions of success or failure in controlling them, as well as between past and future control (Benyamini et al., 1997). The two constructs of cause and control have been closely linked in attributional studies and it has been commented that control beliefs are directly related to causal attributions. Causal beliefs tend to focus on causes of past events, while locus of control beliefs focus on expectancies for future events (Norman & Bennett, 1996). In terms of alcohol-related illness, it seems likely that individuals' beliefs about the causes of their illness and their perceptions of its controllability will influence the choices they make in response to that illness. This leads to consideration of literature relating to causal attributions and perceived control and how this impacts on adjustment.

The literature in this area is complex. The diversity of attributional concepts that have been applied and differences in the nature of events for which attributions are sought can make it difficult to draw firm conclusions across studies. For example, some authors refer to 'perceived control' in terms of controllability over recurrence of a specific illness, whilst others use the term in relation to attributions about health in general and its controllability. This review attempts to
draw together common themes from the literature, as well as discussing possible explanations for
the diversity in findings and their implications.

1.5.1 HEALTH LOCUS OF CONTROL
Wallston (1997) defined perceived control as a person's subjective appraisal of their ability to
determine or influence something. Whatever the name that is assigned to a low sense of control-
helplessness (Seligman, 1975), external locus of control (Rotter, 1966) or powerlessness
(Seeman, 1972), there is considerable evidence that low sense of control is associated with a
variety of poorer outcomes (Seeman & Seeman, 1983). It therefore seems likely that personal
sense of control will have an important bearing on health matters. Rotter and Bandura have each
contributed key psychological constructs to the literature relevant to perceived control. These
two constructs, locus of control and self-efficacy, have dominated the research literature. Self-
efficacy theory will be discussed later in this review.

The internal/external dimension of attribution theory has been applied specifically to health in
terms of health 'locus of control'. Health Locus of Control theory has its origins in Rotter's
(1954) Social Learning theory. Rotter's (1954) theory states that, in any given situation, the
likelihood that a person will engage in a particular behaviour is a function of two things: their
expectancy that the behaviour will lead to a particular outcome in that situation; and the value of
that outcome to them. Rotter proposed that the theory could operate on a general as well as a
specific level and that, in addition to having expectancy beliefs for specific situations, individuals
have generalised expectancies across situations. Rotter (1966) later developed the Locus of
Control theory as one such generalised expectancy, distinguishing between internal and external
locus of control orientations. 'Internals' are seen to believe that events are a consequence of their
own actions, whereas 'externals' are thought to believe that events are unrelated to their actions
and thereby determined by factors beyond their control (Rotter, 1966). He conceived of Locus
of Control as a unidimensional construct with 'internality' at one end and 'externality' at the
other.

In relation to health, Wallston et al. (1978) developed a series of health-related locus of control
scales in an attempt to explain individual differences in health behaviour and health status. This
was in response to Rotter’s (1975) suggestion that measures of expectancy that were specific to a given domain (such as health) might be stronger predictors of behaviour. They suggested that people hold expectancy beliefs with respect to health along three dimensions. These are the extent to which individuals believe their health is under the influence of their own actions (internal), the influence of ‘powerful others’, or due to chance or fate (Wallston et al., 1978; Wallston & Wallston, 1981).

Applied to health, the main prediction of Locus of Control theory is that ‘internals’ are more likely to take responsibility for their health and so will be more likely to engage in health-promoting activities. According to Rotter’s (1966) social leaning theory, this prediction should only be apparent for individuals who value their health, as behaviour is partly a function of the value attached to certain outcomes. The main overlap of locus of control is with constructs that focus on the causes of events and some authors have argued that locus of control beliefs are, to some extent, based on causal attributions, as will now be discussed (Furnham & Steele, 1993).

1.5.2 ATTRIBUTIONS AND PERCEIVED CONTROL

Attributions are thought to be made so that individuals feel that they can control their environment (Heider, 1958), and so it has been hypothesised that attributions to factors under personal control might be more adaptive than attributions made to uncontrollable factors (Taylor et al., 1984). There is considerable empirical literature indicating that when people can exert, or believe they can exert, control over some noxious event, they adjust to that event more successfully. It is posited that such attributions are crucial in facilitating positive adjustment (Thompson, 1981). This is consistent with the ideas presented by Wallston & Wallston (1981) in relation to the Health Locus of Control construct. In terms of specific illness episodes, it has been suggested that by attributing causality to factors under personal control, an individual is better able to cope with illness (Turnquist et al., 1988).

There is now a considerable body of evidence linking perceived control and health-related outcomes such as the pursuit of health-protective behaviour (Seeman & Seeman, 1983); coping with chronic illness (Tennen, Affleck, Allen, McGrade, & Ratzan, 1984; Witenberg, Blanchard, Suls, Tennen, McCoy, & McGoldrick, 1983); and coping with spinal injury (Bulman &
Wortman, 1977). Seeman and Seeman (1983) sampled members of the general population and reported that an internal sense of control over health was associated with practising preventive health measures such as alcohol moderation, exercise, and stopping or attempting to stop smoking. Taylor et al. (1984) suggest that self-generated feelings of control may have a similar positive effect on adjustment to stressors and predicted that cancer patients who believed they could exert some control over their cancer would show better adjustment than those who do not hold such beliefs. They found that the association between beliefs in control and adjustment was strong, both the perception of one’s own control over cancer and the perception that others can control it. Affleck, Tennen, and Croog (1987) tested the hypothesis that attributions to potentially controllable causes (i.e. behaviour or stress) would be associated with perceptions of control over future heart attacks. They found that patients who attributed their heart attack to personal behaviours (eating, drinking or smoking) were more likely to believe that future heart attacks could be avoided by modifying behavioural factors.

1.5.3 CAUSAL ATTRIBUTIONS AND BEHAVIOURAL SELF-BLAME

The relationship between causal attributions for a condition and subsequent recovery has received attention among a variety of medical populations, including patients with end-stage renal failure (Witenburg et al., 1983), diabetes (Tennen et al., 1984) and heart attack victims (Affleck et al., 1987). A number of such studies have looked at ‘internal’ causal attributions and shown that attributing the cause of an illness or injury to one’s own actions has a beneficial effect on adaptation and adjustment. For example, Tennen et al. (1984) reported that those who believed their illness was due to their own behaviour were independently rated by their doctors as coping better and having the disease under better control than were external attributors. Brewin (1984) found that patients who blamed themselves for accidental injury showed better adjustment in terms of positive rehabilitation and less disruption in mood. In general, it seems that patients who accept some responsibility for their condition are more likely to believe that they can contribute to their own recovery (Watts, 1982).

Other researchers have investigated relationships between attributions to external causes and adjustment. Generally, studies have shown that attributing the cause of illness to ‘others’ predicts
poor physical and psychological adjustment (Affleck et al., 1987; Bulman & Wortman, 1977; Taylor et al., 1984). Axelrad (1982) found that making causal attributions to external factors (others and bad luck) was related to lower expectations for future coping. Similarly, Bar-on (1987) found that those who attributed their heart attack to external, uncontrollable factors, such as fate, were less likely to follow the recommendations of their physicians and returned to work and regular physical and sexual functioning at a significantly lower rate than those making internal attributions. Although it has generally been found that self-blame is predictive in the performance of health-protective behaviours and adjustment to illness, this is not consistent across all studies. Other investigators have concluded that there is no relationship between self-attributions and adjustment (Taylor et al., 1984; Witenberg et al., 1983). For example, Witenberg et al. (1983) found that, although perceived control was associated with positive coping in haemodialysis patients, self-blame was not predictive of good adjustment. The diversity of findings has triggered considerable discussion and it is clear from the available evidence that the relationship between attributions and coping is not simple.

Benyamini et al. (1997) discussed evidence for two hypotheses concerning the relationship of adjustment to attributions. Firstly, that adjustment is better when attributions are made than when they are not made. Research evidence supports the fact that individuals making an attribution of any type have a more positive physical or emotional outcome than patients who fail to report a causal attribution. Witenberg et al. (1983) suggest that by “providing oneself with a reason, any reason for their illness, the individual permits himself or herself to retain a belief that there is an association between events - the world is orderly whoever or whatever controls it” (p. 334). Secondly, Benyamini et al. (1997) considered the hypothesis that adjustment is better if attributions are made to self rather than others and concluded that the data is inconsistent. Similarly, Turnquist et al. (1988) reviewed research evidence in this area and concluded that there is no consistent relationship between causal attributions and adjustment, with self-attributions failing to relate clearly to either a beneficial or a detrimental outcome.

In order to explain some of the discrepancy in these findings, it is important to look more closely at the sample populations and methodologies that have been used. For example, Benyamini et al.
(1997) highlight that inconsistencies could be due to differences in the coding of internal and external cause. The meaning of an ‘internal’ attribution could be different depending on whether it is an attribution for the initial cause of illness or an attribution of responsibility for managing oneself in relation to treatment or rehabilitation in the future. In addition, the nature of the event for which causal attributions were obtained was not consistent across studies. Recent literature has drawn attention to the important interrelationship between control and causal beliefs and suggested that variation in this interrelationship across illness-types may be responsible for some of the discrepancy in research findings.

1.5.4 THE RELATIONSHIP BETWEEN CAUSAL AND CONTROL BELIEFS

Some authors have suggested that self-blame may be adaptive because it is associated with perceiving events as under personal control (Bulman & Wortman, 1977). However, as Wright, Brownbridge, Fielding, and Stratton (1990) point out, not all illnesses or injuries are strongly influenced by an individual’s behaviour. Development of chronic illness such as diabetes and renal failure involve multiple causes which may not necessarily be personally controllable (Wright et al., 1990). Self-blame for events that are not under personal control has been implicated as a component of depression and a depression-related attributional style is not expected to predict good adjustment (Janoff-Bulman, 1979). Although beliefs about control are often adaptive, under circumstances in which events are not subject to personal control, self-blame may be maladaptive and cause greater distress (Witenberg et al., 1983). Thus, it is important to recognise that attributions and adjustment are likely to vary with different illnesses. Benyamini et al. (1997) comment that, if attributions affect adjustment via their impact on control, perceived control may only be helpful when there is a strong link between behaviour and life-threatening events. Thus, a sense of personal responsibility is likely to be more helpful in conditions where there is considerable scope for self-regulation and it seems reasonable to propose that alcohol-related illness such as liver cirrhosis is such a condition.

Janoff-Bulman (1979) distinguished between two types of self-blame, namely characterological and behavioural self-blame, which theoretically may have a differential impact on adjustment. Characterological self-blame involves blaming personal dispositions or traits and is not
modifiable, and thus affords no control over a recurrence. In contrast, behavioural self-blame involves blaming specific, situational actions. Only behavioural self-blame is presumed to be adaptive because it implies the potential for future control via behavioural change (Wright et al., 1990). In truly uncontrollable situations, self-blame may be detrimental if it leads to attempts to modify the unmodifiable and may interfere with acceptance (Witenberg et al., 1983).

DeValle & Norman (1992) highlighted the importance of this distinction. They examined relationships between causal attributions, health locus of control and lifestyle changes in relation to coronary heart disease, where there is a central role of behavioural risk factors in prognosis. They hypothesised that individuals who believe that their health and illness are under their own control ('internal' health locus of control) are more likely to engage in activities that promote health. They also predicted that those who attributed their heart disease to behavioural factors would be more likely to make lifestyle changes. A close correspondence was found between reported lifestyle changes and the endorsement of such lifestyle factors as causal antecedents to their illness. For example, those who had cut down or quit smoking were more likely to have endorsed smoking as a cause. Health locus of control beliefs were found to be related to the endorsement of certain causes, but were not found to be related to lifestyle changes. This may be a result of their use of a generalised Health Locus of Control scale rather than a measure specific to individual's particular illness beliefs.

Returning to the case of alcohol-related illness, it seems likely that causal and control beliefs will be important in predicting positive adaptation, represented by a commitment to long-term abstinence from alcohol ('readiness to change'). It seems reasonable to argue that such a commitment will necessitate an underlying belief that personal behaviour (alcohol consumption) is a significant causal factor. Behavioural self-blame may be expected, in turn, to influence individuals' sense of control over that illness. Given that previous research has found certain causal attributions and control beliefs to be related to behaviour change and subsequent recovery among coronary patients (Affleck et al., 1987; May, Eberlein, Furber, Passamani, & DeMets, 1982), it is hypothesised that intentions to change lifestyle among individuals with an alcohol-related illness will also show a close association with their causal attributions and perceptions of
control. It is also hypothesised that these causal and control beliefs will be closely associated with each other.

1.6 ATTRIBUTION THEORY AND ADDICTIVE BEHAVIOUR

The application of attribution theories in the field of addictions has been primarily in relation to smoking cessation and relapse (Curry, Marlatt, & Gordon, 1987; Schoeneman, Stevens, Hollis, Cheek, & Fischer, 1988), although some writers have discussed the importance of attributions for the causes of successful behaviour change. For instance, Sonne & Janoff (1982) pointed out that, in terms of maintaining long-term change through increased self-efficacy, treatment successes need to be attributed to internal, stable factors rather than to external, unstable factors, such as the therapist or the vigilance of family members or friends. Marlatt & Gordon (1985) applied attribution theory in their description of a relapse prevention model. According to the model, whether an initial lapse from abstinence progresses to a full relapse is seen to depend upon the attributions that the individual makes as to the causes of that lapse. If the initial lapse is attributed to internal, stable and global factors rather than external, unstable and specific factors, this is thought to promote a full relapse. The term ‘Abstinence Violation Effect’ was applied to this maladaptive pattern of attributions. Research concerned with attributions in alcohol-related illness or injury has been limited to a handful of investigators. These have focused on different aspects of attributions and adopted varied methodologies, with some limitations.

1.6.1 ATTRIBUTIONS IN ALCOHOL-RELATED ILLNESS AND INJURY

Farid and his colleagues investigated beliefs about the locus of causality in patients with alcoholic liver disease. They hypothesised that if patients underestimate the severity of their illness, or do not believe that their drinking behaviour plays a major role in determining their subsequent health, they may lack the motivation to change their drinking habits and are unlikely to remain abstinent (Farid, Johnson, Lucas, & Williams, 1998; Farid, Khavari, & Douglass, 1988). In the first of these studies, they investigated the perception of illness among patients with alcoholic liver disease and found that these patients were more ‘internally’ controlled than patients with non-alcoholic liver disease. In a later study, a third comparison group was included consisting of
people presenting to a community agency with alcohol problems, but who had not yet developed liver disease. They reported that patients with alcoholic liver disease were more aware of the link between their behaviour and their health than patients with non-alcoholic liver disease. There was no difference between the two groups of drinkers (with and without liver disease) in terms of ‘internal’ health locus of control. The groups of drinkers differed in their overall control scores (internal and external) and the authors concluded that those seeking help for their drinking were taking more responsibility for their actions than drinkers who continued to drink excessively to the extent of their developing liver disease.

In both studies, the authors used the Health Locus of Control scale (Wallston et al., 1978), which is designed to measure general control expectations over health. This scale provides an indication of the internal or external control beliefs that an individual holds about their health in general and is not intended to measure causal attributions about a specific illness. Therefore, low scores on the scale represent ‘health internals’ and indicate insight into the relationship between behaviour and general health status. However, patterns of attributions may vary from one specific illness to another and the health locus of control scale may be a poor guide to how people make attributions for a particular illness. Farid et al. (1988, 1998) drew several broad conclusions about patients’ insight into the link between their drinking and their liver disease (i.e. a specific illness) on the basis of this general measure. These conclusions should perhaps therefore be considered with some caution.

Longabaugh, Minugh, Nirenberg, Clifford, Becker, and Woodford (1995) investigated attributions for alcohol-related injury, identifying patients attending an accident and emergency department with minor injuries on the basis of saliva tests. They hypothesised that, as well as predispositional variables, attributions about the injury itself (experienced aversiveness and acceptance of alcohol as a major causal factor) would moderate these patients’ readiness to change drinking behaviour after injury. A single item was used to measure the extent to which patients believed their alcohol consumption to be responsible for their injury. At the time of injury, they found that the more aversive the injury, the more likely the patient would report ‘readiness to change’. Acceptance of alcohol as a causal factor was also related to ‘readiness to
change’ (Longabaugh et al., 1995). Unfortunately, the study was limited to a small sample size and participation was refused by 17% of those with positive saliva tests, leaving open the possibility that the non-participants differed in some systematic ways from those agreeing to participate. There was also no comment as to whether these patients’ injuries had in fact been alcohol-related.

As part of a larger study, Heather, Rollnick, Bell, and Richmond (1996) identified patients on general hospital wards who were heavy drinkers and asked if they believed that their illness was related to their drinking. They found that the minority perceived a relationship between the two. Unfortunately, the authors did not provide information on the accuracy of these patients’ causal attributions with their actual medical diagnosis. It was not clear what proportion of these patients were in fact in hospital for an alcohol-related illness, and how many were in hospital for a condition not directly related to their alcohol use. Though Heather et al. (1996) classified people in terms of their readiness to change, they did not investigate the relationship between causal attributions and ‘stage of change’.

On the basis of the attributions literature outlined, causal attributions and perceived control in alcohol-related illness are considered to be a crucial area of investigation in relationship to motivation to change. The present study sought to build on the findings of Heather et al. (1996) by examining the causal and control beliefs of individuals with alcohol-related illness, both in-patients and community samples, where the link between drinking behaviour and illness has been verified. The relationship between causal attributions and ‘readiness to change’ is investigated. It is not anticipated however, that illness causality beliefs alone will account for motivation. Other contingencies such as an individual’s sense of control over their drinking behaviour and the value that they place on their health are also considered.

1.7 SELF-EFFICACY THEORY

Self-efficacy has been shown to be a powerful predictor of behaviour change (Schwarzer & Fuchs, 1996) and has been adopted as part of most health behaviour theories. It seems that self-
efficacy models are no longer really distinct from other approaches, but an essential component of all major models. Self-efficacy theory was developed within the framework of social learning theory and concerns the effects of self-referent thought on psychological functioning (Bandura, 1977). Bandura (1978) discussed the role of cognitive activity in motivation and proposed that the capacity to represent future consequences in thought can generate motivation for action. He argued that expectations of personal efficacy determine whether coping behaviour will be initiated, how much effort will be expended and how long it will be sustained in the face of obstacles and aversive experiences. Self-efficacy theory has been applied to diverse domains of psychosocial functioning (Bandura, 1980; Bandura, 1982), demonstrating that people's perceptions of their capabilities significantly affect how they behave, their level of motivation and their emotional reactions in taxing situations (O'Leary, 1985).

Three types of expectancy beliefs are considered important in behaviour change: situation-expectancy, outcome-expectancy and perceived self-efficacy. 'Situation-expectancies' represent beliefs about the consequences that will occur without personal action, for example beliefs about susceptibility to a health threat. The likelihood that someone will change a detrimental habit is therefore considered to depend, in part, on the expectancy that they are at risk (Schwarzer & Fuchs, 1996). 'Outcome-expectancy' refers to the belief that performance of a given behaviour will or will not lead to a given outcome. In the case of illness, outcome-expectancy represents the belief that adopting a health behaviour, such as abstinence from alcohol, will reduce the threat of further illness (Schwarzer, 1992). 'Perceived self-efficacy' refers to the individual’s conviction that he/she can successfully perform the requisite behaviour.

The distinction between self-efficacy and outcome-expectations is an important feature of Bandura's self-efficacy theory (Kazdin, 1978). Bandura (1978) made this distinction with the proposition that "individuals can believe that a particular course of action will produce certain outcomes, but if they entertain serious doubts about whether they can perform the necessary activities such information does not influence behaviour" (p. 141). In the case of heavy drinkers, the concept of outcome-expectancy refers to the individual’s perception that abstinence will avoid further ill health. Therefore, Bandura’s theory suggests that at the decision-making stage,
beliefs about the likely health outcome will be important. This suggests that the value of health to the individual is likely to be an important motivating factor (see section 1.2) in that those who place low value on their health are unlikely to consider change worthwhile in terms of health outcome. Bandura’s theory indicates that, once a drinker has decided that change is worthwhile, their beliefs about their ability to successfully execute the behaviour in question become primary. In this case, the requisite behaviour is abstinence from alcohol and therefore, self-efficacy for abstinence is likely to be an important influence on motivation to change.

1.7.1 SELF-EFFICACY AND HEALTH-RELATED BEHAVIOUR

Perceived self-efficacy can be seen to affect health-related behaviour through its influence on choices about which activities will be attempted and which will be avoided. A significant proportion of the research in this area has been applied to smoking and measures of self-efficacy have been found to be useful in the prediction of cessation and maintenance of smoking behaviour (Condiotte & Lichtenstein, 1981; DiClemente, 1981; DiClemente, Prochaska, & Gibertini, 1985).

O’Leary (1985) reported that self-efficacy was a better predictor of outcome than health locus of control, confidence in treatment rationale, or expectations concerning the positive effects of smoking. Godding & Glasgow (1985) measured self-efficacy and outcome expectancy in predicting smoking status and found strong correlations between self-efficacy and smoking behaviour at 6-month follow-up. DiClemente and his colleagues have found self-efficacy to be predictive of smoking status following cessation-based treatment programmes and found that efficacy evaluations at initial assessment were related to changes in smoking status at 5-months follow-up (DiClemente, 1981; DiClemente et al., 1985).

1.7.2 SELF-EFFICACY AND ALCOHOL DEPENDENCY

Self-efficacy has long been considered theoretically relevant for treatment and recovery in alcohol problems (DiClemente, 1986; Marlatt & Gordon, 1980). Self-efficacy theory has been widely applied in studying the dynamics of the relapse process and empirical data suggests that self-efficacy plays an important role (Miller, Ross, Emerson, & Todt, 1989). Applied to the
current research, self-efficacy theory is important in terms of its focus on an individuals' confidence to refrain from drinking in high-risk situations and to achieve mastery over abstinence. Empirical studies suggest that self-efficacy increases during treatment (DiClemente, Fairhurst, & Piotrowski, 1995; Goldbeck, Myatt, & Aitchison, 1997; Solomon & Annis, 1990). Solomon & Annis (1990) found drinkers' low self-efficacy measured at intake to a treatment programme to be predictive of later heavy drinking. Other studies have found that the higher the level of perceived self-efficacy in individuals at the completion of treatment, the greater the probability that they will remain abstinent (Condiotte & Lichtenstein, 1981; DiClemente, 1981).

Whilst there is evidence that self-efficacy predicts abstinence status, at least in the short-term (DiClemente, 1981; DiClemente et al., 1985), other studies have produced conflicting results with regard to the predictive validity of self-efficacy (Goldbeck et al., 1997). Mayer and Koeninsmark (1991) failed to find support for the hypothesis that self-efficacy measured post-treatment would predict outcome status, though they did find a positive relationship between self-efficacy and relapse latency (time in days until the first lapse). Rist and Watzl (1983) found that high self-efficacy expectations were predictive of abstinence at 3-month follow-up after in-patient treatment for problem drinkers, but that this was no longer evident at 18-month follow-up. Though Solomon & Annis (1990) found that pre-treatment self-efficacy was strongly associated with levels of alcohol consumption at follow-up, they did not find a relationship between self-efficacy and abstinence status.

The concept of self-efficacy is complex and different dimensions of self-efficacy such as its magnitude, strength and generality have been described (Bandura, 1977). DiClemente et al. (1995) suggested the differentiation of such sub-types of self-efficacy as ‘coping’ self-efficacy, ‘treatment behaviour’ self-efficacy, ‘control’ self-efficacy, ‘recovery’ self-efficacy and ‘abstinence’ self-efficacy. Many of the studies described have used the Situational Confidence Questionnaire (SCQ), which inquires about participants’ ability to resist ‘drinking heavily’ in a variety of high risk situations. The SCQ would therefore appear to measure ‘control’ self-efficacy and not necessarily represent beliefs about abstinence. Results may thus depend on which of these constructs is being measured. Some researchers have sought to predict the
likelihood of a return to drinking (failed abstinence) as an outcome, whilst measuring self-efficacy for avoiding heavy drinking (control self-efficacy) using the SCQ, rather than abstinence self-efficacy.

In order to predict behaviour accurately, it seems important that there is adequate correspondence between the measure of self-efficacy used and the outcome criterion. In response to this, Miller et al. (1989) modified the SCQ to focus on abstinence (avoidance of drinking altogether) rather than control (avoidance of drinking heavily). They found significant differences in abstinence self-efficacy between a group who had been abstinent for 12 months, and a group entering in-patient alcohol treatment. Whilst control self-efficacy has not always been a successful predictor of abstinence at follow-up, long-term sobriety has been related to abstinence self-efficacy (Miller et al., 1989). It is therefore anticipated that, for the current sample, individuals' confidence in their ability to abstain from alcohol will be an important predictor of readiness to change. The degree of dependency on alcohol also seems to be an important consideration in predicting readiness to change. When individuals are making evaluations of their ability to abstain from alcohol, it would seem reasonable to predict that the degree to which they consider themselves to be dependent on alcohol will affect their judgements. This will be discussed in greater detail in the section on stages of change and decision-making (section 1.8.1).

1.7.3 SELF-EFFICACY & CUES TO DRINKING
Glautier & Drummond (1994) argued that, from a conditioning theory approach, the context in which behaviour occurs is of fundamental importance and thus, every behaviour needs to be analysed with reference to its antecedent circumstances and consequences. They argued that the antecedent circumstances in which drinking occurs form the context in which that behaviour is embedded. The events that are antecedent to drinking episodes, because they occur before drinking, are in a position to be thought of as triggers or cues to the initiation of drinking. Cues for drinking may be any set of stimuli which serve to increase the likelihood of alcohol intake. Heather, Rollnick, and Winton (1983) pointed out that it is relatively easy to stop an alcoholic from drinking, especially in the ward environment where the cues for drinking are absent. The
chief difficulty arises after discharge from medical treatment when the drinker returns to his natural environment and encounters the situations associated with heavy drinking in the past.

Given this association between the environment and drinking behaviour, there is some question as to how individuals’ confidence about change may be affected by their environment. It is anticipated that levels of abstinence self-efficacy may vary between those who are seen as in-patients and those who are in contact with community agencies and not currently in hospital. Whilst in hospital, people have the opportunity to step out of their usual lifestyles and to review their situation, possibly in a different light. It is hypothesised that hospital in-patients will display greater confidence in their ability to abstain from alcohol, since the usual cues to drinking behaviour have less proximity. Those who are in the community sample will be living in the contexts in which their drinking behaviour occurs. They are more readily faced with the cues that initiate drinking behaviour than those currently in hospital and may therefore have less confidence in their ability to maintain abstinence.

The studies reviewed here highlight the fundamental importance of efficacy judgements in behaviour change. The current study is primarily concerned with early decision-making and literature linking efficacy evaluations with different stages in the behaviour change process is therefore particularly relevant. Prior to discussion of this relationship, it is helpful to explain the stages of change model.

1.8 TRanstheoretical model of change

Decisions to change behaviours like drinking and smoking are often preceded by fluctuating motivation and feelings of ambivalence. It has been suggested that motivation can be operationalised as the relative balance of the costs and benefits of undertaking a particular behaviour (Saunders & Wilkinson, 1990). A decision can be made and then reversed before behaviour change actually takes place and some researchers have considered that change involves a number of phases. This led to the development of stage models to account for this.
Understanding of the change process has been significantly aided by the development of the Transtheoretical Model of behaviour change proposed by Prochaska and DiClemente (1982; 1986) in which change is conceptualised as a stage phenomenon. From this perspective, intentional change is viewed as the movement through various stages. The model initially presented four stages of: precontemplation (not thinking about change); contemplation (ambivalent about change); action (making changes); and maintenance (Prochaska & DiClemente, 1982). The model was subsequently modified to include an additional ‘preparation’ stage (Prochaska, DiClemente, Velicer, & Rossi, 1992) occurring between contemplation and action, in which the individual is ‘getting ready for action’. The stages of change model is highly applicable to alcohol dependency, though it can be applied to any behaviour change.

Movement through the various stages is seen as cyclical in nature, rather than linear. Individuals can begin to contemplate change, then decide not to and exit the cycle at that point. Relapse (a return to problematic behaviour) may terminate the action or maintenance phases, prompting movement back through the initial stages of precontemplation or contemplation. Movement through the stages involves a cycling and recycling process (DiClemente & Prochaska, 1985) in which relapse and recycling through the stages constitute the rule rather than the exception (Brownell et al., 1986; Prochaska & DiClemente, 1992). Individuals often make several revolutions through the cycle before achieving successful change, especially with addictive behaviours. Relapse experiences contribute information and feedback that can facilitate or hinder subsequent progression through the stages of change (Prochaska & DiClemente, 1992).

Evidence for the validity of the stage of change classification has been reported by Prochaska and DiClemente in a number of studies (DiClemente, Prochaska, Fairhurst, Velicer, Velasquez, & Rossi, 1991; DiClemente & Prochaska, 1985). This research has provided strong support for the reliability and validity of core constructs of the model such as the stages, processes and levels of change (McConnaughy, Prochaska, & Velicer, 1989). Prochaska, Velicer, Ross, Goldstein, Marcus, et al. (1994) found clear commonalities in the change process across 12 different problem behaviours, providing evidence for the generalisability of the transtheoretical model. Through retrospective, cross-sectional, and longitudinal studies, evidence has been accumulated.
showing that smokers move through a series of stages of change in their efforts to quit (DiClemente et al., 1991; DiClemente & Prochaska, 1982; Prochaska & DiClemente, 1983). DiClemente et al. (1991) found that the stages of change model predicted outcome from a smoking cessation treatment programme. It is a well-established and widely applied model, though more recently, other researchers have expressed some concerns about its apparent lack of a solid theoretical basis (Davidson, 1992). Prochaska and DiClemente have defended the model and reiterated that it has been carefully validated and demonstrated to be robust across behaviours. They highlight that it draws on constructs derived from major psychosocial theories including Bandura’s social learning theory and other motivational and relapse theories, and as such they argue that it is in fact ‘transtheoretical’ (Prochaska et al., 1992).

1.8.1 STAGES OF CHANGE AND DECISION-MAKING

The process of change from ‘precontemplation’ to a ‘contemplation’ stage is viewed by Prochaska & DiClemente (1992) as involving an evaluation of the advantages and disadvantages of the behaviour, as well as addressing ambivalence about change, with the balance of costs and benefits changing as individuals make their way through the stages (DiClemente & Hughes, 1990). A number of studies have revealed a relationship between respondents’ stage of change and measures of the costs and benefits of changing high-risk behaviours. People who have no intention of changing a risky behaviour rate the costs of changing higher than the benefits, whereas people who are contemplating or taking action to change, rate the benefits higher than the costs (Prochaska, 1994; Prochaska et al., 1994).

The ‘precontemplation’ stage is characterised by unawareness or unwillingness to acknowledge alcohol consumption as a problem and change is not therefore considered (DiClemente & Scott, 1997). ‘Precontemplators’ process less information about their problems; they spend less time and energy re-evaluating themselves, they experience fewer emotional reactions to the negative aspects of their problems, they are less open with significant others about their problems and they do little to shift their attention or their environment in the direction of overcoming their problems (Prochaska & DiClemente, 1986). Once individuals begin to consider their alcohol use to be problematic and to realise that change may be needed, they enter the ‘contemplation’ stage,
involving consciousness-raising and consideration of the costs and benefits of behaviour. As they become increasingly more conscious about themselves and the nature of their problems, they are more free to re-evaluate themselves and their actions (Prochaska & DiClemente, 1986). Prochaska & DiClemente (1986) discussed the importance of self-efficacy and attributions, particularly during the ‘action’ stage. They state that individuals need to believe that they have the autonomy to change their lives in key ways. They argued that this is based in part, on a sense of self-efficacy (Bandura, 1977; 1982) and the belief that your own efforts play a crucial role in succeeding in the face of difficult situations. Once action plans have been entered into, ‘maintenance’ involves continued action so that the behaviour becomes firmly established in the person’s lifestyle.

Individuals with alcohol-related illness are faced with evidence that their behaviour may be problematic and that they need to explore the possibilities of change, such as in a ‘contemplation’ stage of change. An individual may decide that there is no problem and remain in a ‘precontemplation’ stage. They may decide that there is a problem, but that they cannot or will not take action, or may decide that there is a problem and that they need to do something (DiClemente & Scott, 1997). Whether the individual concerned makes a decision to take action and moves beyond this contemplation stage is likely to be influenced by their attributions, self-efficacy and health beliefs. For example, they may not consider their ill-health to be a significant problem (low health value), they may appreciate that there is a problem, but feel that they are unable to take action (low abstinence self-efficacy or low perceived control). Alternatively, they may realise there is a problem, but not consider it to be related to their drinking behaviour (lack of behavioural self-blame).

Given that decision-making involves weighing up the advantages and disadvantages of change, it seems likely that the degree of perceived dependency may be an important consideration. Individuals who perceive themselves to be highly dependent on alcohol may anticipate more negative consequences of change, for example, in terms of withdrawal effects, which may influence decision-making. There has been an emphasis on cognitive factors in motivation and relatively little attention paid to ‘dependency’ and its implications for individuals’ decision-
making. An ‘alcohol dependence syndrome’ has been proposed (Edwards, Gross, Keller, Moser, & Room, 1977), suggesting that clinical observations reveal a repeated clustering of signs and symptoms in certain heavy drinkers. Elements of the syndrome include: narrowing of drinking repertoire to a strict daily timetable; increased salience of drinking so that the individual gives priority to their alcohol intake; increased tolerance to alcohol; withdrawal symptoms (tremor, nausea, sweating and/or mood disturbance) which are relieved or avoided by further drinking; and subjective awareness of a compulsion to drink. Edwards, Marshall, and Cook (1997) further considered the significance of time: the longer someone has been putting themselves through repeated cycles of withdrawal and relief, the more severe their dependence. At a psychological level, analysis has focused on identification of cues which trigger craving or alcohol-seeking behaviour, and the alteration of cue-responsivity which are a feature of dependence (Glauteur & Drummond, 1994). Psychological aspects of ‘dependence’, such as feeling that drinking is out of control, or a sense of helplessness over drinking have received little attention. It seems likely that these psychological aspects may have important influences on motivation and behavioural intentions.

1.8.2 STAGES OF CHANGE AND SELF-EFFICACY

Significant and lasting behaviour change, whether naturally occurring or therapeutically induced is expected to be preceded by or co-vary with changes in levels of self-efficacy, due to an explicit causal and interactive relationship between self-efficacy and performance (DiClemente et al., 1985). Studies have demonstrated integral relationships between the stages of change and self-efficacy (DiClemente, 1986; DiClemente et al., 1991). As individuals move into the preparation stage, they assess their resources for a particular plan of action, which may need to be revised in the action stage to meet new challenges. Clearly, efficacy expectations related to behaviour change are relevant in these ‘preparation’ and ‘action’ stages.

The fluctuation of self-efficacy levels in this cycle of change has been studied by DiClemente and his colleagues (DiClemente, 1986; DiClemente et al., 1985) and shown to increase during the process of smoking cessation and maintenance of cessation over time. Self-efficacy levels remain consistently low during ‘precontemplation’ and ‘contemplation’, increase substantially as
individuals take action and abstain from smoking for periods of time, and reach very high levels during ‘maintenance’, when abstinence has been continued for six or more months. In terms of the population being studied here, it seems important to investigate the stage of change at which these individuals are and to measure their self-efficacy for abstinence, since this is the desired goal for those with liver disease. It is predicted that there will be a relationship between self-efficacy and readiness to change, with higher abstinence self-efficacy predicting greater readiness to change.

1.8.3 STAGES OF CHANGE AND TREATMENT MATCHING

Denial, resistance and differing levels of motivation are considered significant problems in treatment participation as well as outcome (Marlatt, Baer, Donovan, & Kivlahan, 1988; Miller, 1985). Discovering dimensions that usefully divide the treatment population and guide intervention is a difficult task (DiClemente & Hughes, 1990) and there has been considerable interest in recent literature on matching individuals more carefully to treatment-types.

The stages of change model introduces the possibility of using different intervention strategies with clients in different stages of change. Heather et al. (1996) have shown that the stages of change classification can be used to match heavy drinkers to treatment-type, with ‘precontemplators’ and ‘contemplators’ showing greater reduction in alcohol-intake when they are assigned to motivational interviewing, than when they are assigned to a skills-based intervention. Heather (1989) suggested that skills-training interventions, aimed at giving individuals the behavioural skills to cut down drinking and avoid relapse, may be irrelevant to the majority of heavy drinkers identified opportunistically in hospital. Such patients have not requested help for a drinking problem and may not be ready to change their drinking behaviour. This is particularly salient in the current study as those in hospital may not be seeking help for their alcohol problems. Those from community agencies may be participating in treatment under pressure of friends or relatives without necessarily being fully convinced that they are ready to accept abstinence as a treatment goal. Understanding influences on ‘readiness to change’ and uptake of treatment is clearly important in guiding people to the right services.
1.9 SUMMARY

The research literature highlights that causal and control beliefs related to health are important in behaviour change and are often linked. A central tenet of attribution models is that people spontaneously engage in causal searches when faced with negative or unexpected events, such as the onset of serious illness. Research evidence demonstrates that those who accept personal responsibility for a condition (behavioural self-blame) and have greater perceived control over their illness are more likely to believe that they can contribute to their own recovery and show constructive coping. Causal and control beliefs are therefore hypothesised to be important in predicting positive adjustment (readiness to change drinking) in people with alcohol-related illness.

Self-efficacy (belief in an ability to carry out a particular action) has long been considered theoretically relevant for alcoholism treatment and has been shown to be a powerful predictor of behaviour change, both in substance-dependency and health-related research. Studies have shown that the higher the level of perceived self-efficacy at the completion of treatment, the greater the probability that an individual will remain abstinent (Condiotte & Lichtenstein, 1981). Research suggests that levels of self-efficacy fluctuate at different stages in the change process, remaining consistently low during ‘precontemplation’ and ‘contemplation’ and increasing substantially as individuals take action to change (DiClemente et al., 1985; DiClemente, 1986).

In alcohol-dependency research, discovering relevant dimensions that can usefully divide treatment populations and guide intervention has been highlighted as an important task. Establishing the motivational and intentional factors that may influence a person’s readiness to change their drinking behaviour is crucial as the intensity and type of intervention should be responsive to the motivational stage of the patients. The stages of change model introduces the possibility of using different intervention strategies with individuals at different stages of change.
1.10 RESEARCH QUESTIONS & HYPOTHESES

The broad research questions proposed are as follows:

1. What predicts intentions to change drinking behaviour following diagnosis of alcohol-related illness?
2. Do causal beliefs and perception of control over illness affect readiness to change drinking behaviour?
3. Is personal confidence in ability to successfully abstain from alcohol related to readiness to take action to change?
4. Does the value placed on good health have an impact on a person's readiness to change their drinking behaviour?
5. What impact does the degree of alcohol dependency have on readiness to change?
6. How does being in hospital affect an individual's beliefs about their ability to stop or reduce their drinking?

From these research questions, the following specific hypotheses are proposed:

HYPOTHESIS 1: There will be significant differences between different stages of change, such that greater 'readiness to change' will be associated with:

A. Individuals' confidence in their ability to abstain from alcohol (abstinence self-efficacy): those at higher stages of change will show greater confidence in abstinence.
B. Levels of perceived control over illness: individuals at higher stages of change will report greater perceived control over their illness.
C. Causal attributions to individuals' own behaviour (behavioural self-blame): individuals at higher stages of change will make more self-blaming attributions.
D. The value individuals place on their health: individuals at higher stages of change will report higher 'health value'.
E. The degree of alcohol dependency: individuals at higher stages of change will report lower perceived dependency on alcohol.

HYPOTHESIS 2: Greater degree of perceived control over illness will be significantly associated with:

A. Causal attributions to individuals' own behaviour: behavioural self-blame will be associated with greater perceived control.

B. Confidence in ability to abstain from alcohol: greater abstinence self-efficacy will be correlated with greater perceived control.

HYPOTHESIS 3: Hospital in-patient status at the time of interview will be significantly associated with greater confidence in ability to abstain from alcohol.

HYPOTHESIS 4: Abstinence self-efficacy, perceived control, behavioural self-blame, health value and alcohol dependency will account for the variation between individuals in the 'ready for change' group and the 'not ready for change' group. Of these, abstinence self-efficacy will account for the largest proportion of the variance.

These predictions and hypothesised relationships between factors are illustrated in Figure 1. This is included as a visual representation of the hypotheses to be tested.
Figure 1. Diagrammatic representation of predicted relationships between variables and readiness to change

HEALTH VALUE
HIGH HEALTH VALUE

CONTROL BELIEFS
HIGH PERCEIVED CONTROL

CAUSAL ATTRIBUTION
BEHAVIOURAL SELF-BLAME

ALCOHOL DEPENDENCY
LOW DEPENDENCY

ABSTINENCE SELF-EFFICACY
HIGH SELF-EFFICACY

READINESS TO CHANGE
‘ACTION’ STAGE OF CHANGE
2. METHODOLOGY

2.1 DESIGN

The current project was an exploratory study to develop and test a model intended to be prognostic of 'readiness to change' drinking behaviour, integrating health-related and drinking-related variables hypothesised to be predictive of stage of change. In order to test this model, relationships between constructs were examined at a number of different levels. Between-group comparisons were calculated for those classified as 'Ready to Change' ('action' stage) and 'Not Ready to Change' ('precontemplation' and 'contemplation' stages), looking at differences in terms of key variables. Between-group comparisons were also made across the three stages of 'Readiness to Change'. Relationships between variables within the model were examined using bivariate analyses. As well as looking at individual relationships, the relative predictive powers of drink- and health-related variables on 'stage of change' were examined using regression analysis. This analysis looked at predictors of 'Ready to Change' ('action' stage) group membership. Finally, differences between hospital and community samples were explored in order to clarify further interrelationships between constructs.

2.2 PARTICIPANTS

The participants were recruited from two main sources: in-patients from five General Hospital wards and individuals from the caseloads of a Community Alcohol Team. The main criterion for inclusion, regardless of location of recruitment, was identification of alcohol-related illness (through consultation with a medical physician, general practitioner and medical notes). Though self-report information about frequency and quantity of alcohol consumption in the preceding month was collected, this was not used as criteria for inclusion. Since the study focused on the impact of illness, actual levels of alcohol consumption were not considered central. The fact that those involved had consumed alcohol in sufficient quantities and over sufficient time to cause physical illness was considered representative of their status as 'heavy' or 'problem' drinkers.
Self-reported drinking levels may also be unreliable and participants may under-estimate or over-estimate their consumption.

Additional inclusion criteria were: being judged (by the researcher, key-worker or medical staff) to be competent to provide reliable and valid self-report information; arrival on the hospital ward when the researcher was available to administer the interview (for hospital sample); and willingness to provide written consent for participation. Individuals were excluded if they were younger than 16, or older than 70 years. Individuals who were too seriously ill or suspected to have organic impairment were also excluded.

In total, 33 participants were interviewed (15 in-patients and 18 community clients). Overall, there was an attrition rate of 49.2%. Attrition was greater in the in-patient sample (60.5%) than in the community sample (33.3%). The reasons for non-participation and drop-out are given in Table 1.

<table>
<thead>
<tr>
<th>Initially identified</th>
<th>Excluded (pain/illness)</th>
<th>Refusal/ no response</th>
<th>Absconded/ dropped out</th>
<th>‘Other’</th>
<th>Total excluded</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>65</td>
<td>8 (12.3%)</td>
<td>13 (20.0%)</td>
<td>5 (7.7%)</td>
<td>6 (9.2%)</td>
</tr>
<tr>
<td>Hospital</td>
<td>38</td>
<td>6 (15.8%)</td>
<td>11 (28.9%)</td>
<td>2 (5.3%)</td>
<td>4 (10.5%)</td>
</tr>
<tr>
<td>Community</td>
<td>27</td>
<td>2 (7.4%)</td>
<td>2 (7.4%)</td>
<td>3 (11.1%)</td>
<td>2 (7.4%)</td>
</tr>
</tbody>
</table>

Twenty-seven community clients were initially identified as eligible for the study. Of these, one was subsequently deemed ineligible, due to their diagnosis of alcohol-related illness being unclear. Three dropped out of contact with the community team, two were excluded due to the severity of their illness and one was excluded due to suspected organic impairment. Of the remaining 20 contacted, a further two were lost as a result of direct refusal or failure to respond to correspondence about the study.
For the hospital sample, over a five month assessment period, 38 in-patients were identified as meeting the inclusion criteria. Four patients were excluded under the recommendation of their physician (for example, due to the severity of their illness/pain, concurrent diagnosis of cancer and concern about level of distress). Two patients absconded from the ward before it was possible to approach them. Of those approached, 11 (28.9%) refused to participate. Of these refusals, four denied using alcohol, three felt too unwell or had severe pain, two had already taken part in other studies and two did not give reasons for refusal. Two interviews were terminated due to increased pain and discomfort of the interviewee. The researcher excluded one patient due to suspected organic impairment and inability to give reliable self-report information. A further three were excluded due to insufficient fluency in English and difficulty with availability of an interpreter in the limited period prior to discharge.

Overall, the sample consisted of 24 males and nine females, with an age range of 29-70 years (mean age 50.2 years). The breakdown of age and gender within each location of recruitment is given in Table 2. Of the 33 participants, 29 were white (87.9%) and four were Asian (12.1%). In the hospital sample, there were 14 white and one Asian participants and in the community sample, there were 15 white and three Asian participants.

<table>
<thead>
<tr>
<th>Age range (years)</th>
<th>Mean age (years)</th>
<th>SD</th>
<th>Males (number)</th>
<th>Females (number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All participants</td>
<td>29-70</td>
<td>50.2</td>
<td>9.63</td>
<td>24</td>
</tr>
<tr>
<td>Hospital</td>
<td>36-63</td>
<td>52.9</td>
<td>7.85</td>
<td>10</td>
</tr>
<tr>
<td>Community</td>
<td>29-70</td>
<td>47.9</td>
<td>10.59</td>
<td>14</td>
</tr>
</tbody>
</table>

Information about the marital status and living arrangements of the participants are given in Table 3. Five of the 33 participants were single, 17 married or cohabiting, nine divorced or separated and two widowed. Thirteen of the 33 lived alone, 17 with a spouse or partner and three lived in temporary hostel accommodation or had no fixed abode. Table 4 shows
the breakdown of employment status by location of recruitment. Four of the 33 participants were in full-time employment and four self-employed at the time of interview. Nine were unemployed, 10 were receiving sickness benefit and six were retired. Tests of difference between the two samples are reported in the results (section 3.1). No significant differences were found between the two samples.

Table 3. Participants’ Marital Status and Living Arrangements by Location of Recruitment

<table>
<thead>
<tr>
<th>MARITAL STATUS</th>
<th>LIVING ARRANGEMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single</td>
</tr>
<tr>
<td>All</td>
<td>5</td>
</tr>
<tr>
<td>Hospital</td>
<td>3</td>
</tr>
<tr>
<td>Community</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 4. Breakdown of Employment Status by Location of Recruitment

<table>
<thead>
<tr>
<th></th>
<th>Employed</th>
<th>Self-employed</th>
<th>Unemployed</th>
<th>Sickness benefit</th>
<th>Retired</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Hospital</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Community</td>
<td>2</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>2</td>
</tr>
</tbody>
</table>

2.3 PROCEDURE

The research was approved by a full review of the ethical committee of the NHS trusts involved in the study. Information leaflets, consent forms and letters of invitation are given in Appendix A. The procedure for recruiting participants differed slightly between the two locations, as follows:

RECRUITMENT FROM HOSPITAL WARDS

Wards receiving admissions for liver complaints and acute pancreatitis, which are primarily alcohol-related conditions, were used. Participants were patients under the care of Consultants in Gastroenterology and Surgery, who had given their approval for the study. As part of
admissions procedure, junior doctors identified patients meeting the inclusion criteria and the researcher contacted the wards every two to three days to discuss new admissions. The researcher approached eligible patients, after seeking confirmation from junior doctors that their condition was stable and that participation would not be detrimental or unduly distressing. Patients were given a letter of invitation from the consultant responsible for their care, an information sheet describing the project and told that the researcher would return within 24 hours to enquire about their willingness to take part. Consenting patients were interviewed at a time that was convenient for them and for the ward staff. All interviews were completed prior to patients’ discharge from the ward.

RECRUITMENT FROM COMMUNITY ALCOHOL TEAM
Participants were sought from the caseloads of all members of the multidisciplinary team, including nurses, social workers, psychiatrists and clinical psychologists. Key-workers identified people amongst their current contacts who met the inclusion criteria and gave consent for their clients to be included. Eligible clients were initially contacted by the key-worker concerned, given brief details of the study and asked if they would like further information. A letter of invitation and an information leaflet describing the study were sent to interested clients, with a request to complete and return a form indicating their willingness to participate. Those who responded positively were contacted to arrange an interview at a time and place that was convenient for them.

ASSESSMENT
Once recruited, the procedure for assessment was identical for in-patients and community participants. Prior to interview, all participants were required to sign a form recording their written consent to participate in the study. All assessment measures were completed during a single data collection session. A demographic information sheet was completed (Appendix B). This was followed by the semi-structured interview, which was administered by the researcher (Appendix C). The remaining questionnaires were then completed, maintaining a standardised ordering to ensure consistency. The semi-structured interview was completed at the start in order to maximise participants’ spontaneous causal thinking. It was anticipated that through the
process of completing questionnaires, people would, to some extent, evaluate their drinking and health beliefs somewhat and that this may potentially influence attributions.

A pilot study was carried out on four patients, to standardise the format of administration and ensure that questionnaires were readily understood. During the process of piloting, it became apparent that self-completion of measures may be difficult. The majority of in-patients were attached to intravenous drips or other medical equipment making movement, and therefore writing, difficult. Some suffered significant hand tremors making it difficult to accurately fill-in questionnaires. To overcome this, questionnaires were placed so participants could see the layout, and items were read aloud by the researcher. The researcher noted individuals’ responses. This procedure was adopted in all interviews, to ensure consistency across the sample. Due to participants’ limited or lack of English, three interviews were carried out through an interpreter, though the same procedure as described above was used.

In their entirety, interview and questionnaire procedures lasted about an hour in total. In the ward setting, interviews were carried out as privately as possible, using an interview room or side-room when available. Community sample interviews took place at peoples’ homes, with the exceptions of two that were carried out at an Alcohol Advice Centre. In-patients requesting help for alcohol problems were given appropriate information about available services and options for accessing them.

2.4 MEASURES

Participants completed a semi-structured interview plus six questionnaire measures:
1. General Health Questionnaire; 2. Health Value Scale (Lau, Hartman, & Ware, 1986); 3. Severity of Dependence Scale (Gossop, Darke, Griffiths, Hando, Powis, Hall, & Strang, 1995); 4. Illness Perception Questionnaire (Weinman, Petrie, Moss-Morris, & Horne, 1996); 5. Alcohol-Abstinence Self-efficacy scale (DiClemente, Carbonari, Montgomery, & Hughes, 1994); 6. Readiness to Change scale (Rollnick, Heather, Gold, & Hall, 1992). An important consideration in selecting measures was the avoidance of unnecessarily complex or lengthy
scales, without compromising the requirement for scales with adequate psychometric properties. Given the nature of the sample, particularly in-patients, it was likely that some participants would be in pain or discomfort, making the use of lengthy scales inappropriate. This, coupled with a busy ward environment, made time and simplicity a particular issue.

Many early studies of control and efficacy beliefs used generalised measures, based on the assumption that a person's perception of control and efficacy are broadly similar over many behaviours. However, people may have quite different perceptions of control in relation to different aspects of their health and there is an issue as to the level of specificity which is required. Recently, there has been an increase in development of more behaviour-specific measures and in general, more specific scales are recommended as having stronger predictive value (Weinman, Wright, & Johnston, 1995). Therefore, another consideration in the selection of measures was the use of behaviour-specific and illness-specific measures wherever possible.

2.4.1 DESCRIPTION OF MEASURES

SEMI-STRUCTURED INTERVIEW (Appendix C)

Participants were administered a semi-structured interview designed and piloted by the investigator. This explored participants' causal attributions for their illness, beliefs about the benefits to their health of stopping or cutting down their drinking, previous attempts at abstinence and reasons for relapse. Questions were posed in an open-ended fashion in order to permit participants to express themselves freely without having to confine their responses arbitrarily. Although some researchers have used questionnaire methods to assess causal beliefs, assessment by interview seems favourable and has been popular in attribution research (Affleck, Allen, Tennen, McGrade, & Ratzan, 1985; Heather et al., 1996; Taylor et al., 1984;). Questionnaire methods involve presenting participants with a list of possible causes and asking them to indicate which they believe may have caused their illness. This method relies on previously gathered material about potential causes of an illness and runs the risk of limiting responses. Interview methods have typically used one or two standardised, open-ended questions about causal beliefs, for example "what do you think has caused your illness?" The
interview method of assessing causal attributions is supported by evidence that there is reasonable concurrent validity between causal ascription offered during an interview and questionnaire assessment of causal cognitions (Gong-Guy & Hammen, 1980).

HEALTH QUESTIONNAIRE (Appendix D)
A general health questionnaire was used to collect self-report information about smoking, quantity and frequency of alcohol consumption over the previous month and episodes of binge drinking over the preceding six months. This was taken from the questionnaire described by Heather et al. (1996), though items relating to exercise and diet were removed and an additional item related to binge drinking was included. This was because binge drinkers typically have drinking bouts in which they remain intoxicated for in excess 24 hours, perhaps for several days, followed by periods when they do not drink at all. Those with this pattern of drinking may have greater confidence in their ability to stop, since they already have periods without drinking. Information concerned with exercise and diet was not considered directly relevant and, since it would not be included in analyses, these items were removed.

SEVERITY OF DEPENDENCE SCALE (SDS)
The Severity of Dependence Scale (SDS) was devised by Gossop et al. (1995) to provide a short, easily administered scale to measure the degree of dependence experienced by users of different types of drugs. The SDS contains five items, all of which are explicitly concerned with psychological components of dependence. These items are specifically concerned with impaired control over substance use and with preoccupation and anxieties about substance use. Items are rated on a 5-point Likert scale, producing an overall dependence score ranging from 0-25. Gossop et al. (1995) reported reliability and validity checks using the SDS on five samples of drug users in two different countries. Although the applicability of the scale to the measurement of alcohol dependence has not yet been tested, psychometric properties of the scale are reported for five drug types and demonstrate good reliability and validity. All SDS items were found to load significantly with a single dependence factor and the total SDS score was correlated highly with the single factor score. The SDS items had high coefficient alpha scores, indicating unidimensionality, and the validity of the SDS is supported by its association with behavioural
patterns of drug taking that are, in themselves, known to be related to severity of drug dependence (Gossop et al., 1995). The authors indicate that the items can be readily adapted to measure dependence for different substances.

HEALTH VALUE SCALE (HVS)
There is no widely accepted method of measuring health value available to researchers wishing to utilise the concept (Lau et al., 1986). The most frequent method is to ask respondents to rank a series of values in order of personal importance. The relative positioning of health in these rankings is assumed to measure how highly health is valued (Lau et al., 1986). The Health Value Scale (HVS) is a 4-item scale, developed to provide a general measure of the importance of health to the individual. It utilises a 7-point scale, ranging from ‘strongly agree’ to ‘strongly disagree’. A higher score on the scale indicates a higher value attached to health. Mean scores can be compared with those of various patient and non-patient samples presented by Lau et al. (1986). Lau et al. (1986) reported on psychometric properties of the scale and demonstrated satisfactory test-retest reliability and coefficient alpha reliability (indicating unidimensionality). Correlation with two other measures of health value demonstrated good construct validity. The HVS was strongly associated with belief that health is a controllable but serious issue and was positively related to two of the Health Locus of Control sub-scales (beliefs in self-control over health and provider control over health) (Lau et al., 1986).

ILLNESS PERCEPTION QUESTIONNAIRE (IPQ)
The Illness Perception Questionnaire (IPQ) is a theoretically derived measure assessing cognitive representations of illness, based on Leventhal et al.’s (1980) Self-regulation theory. It comprises five scales which assess identity (the symptoms the patient associates with the illness); cause (personal ideas about aetiology); time line (perceived duration of the illness); consequences (expected effects and outcome) and cure/control (how one controls or recovers from the illness). The IPQ has a specific number of core items, but allows the user to add items for particular patient groups or health threats, making it particularly useful in this study. Scores are obtained by summing all the scale items and dividing by the number of items. Items are rated on a 5-point scale, ranging from ‘strongly agree’ to ‘strongly disagree’. For the causal scale, it is not
appropriate to sum all of the items as each item represents a specific causal belief, although the
authors suggest that some researchers may find it appropriate to combine items for their needs
(e.g. external versus internal causal factors) (Weinman et al., 1996). In the most general version
of the IPQ, each item refers to "illness" but it is also possible to replace this with the name of a
particular illness (for example, cirrhosis). Weinman et al. (1996) reported on data from seven
illness groups showing the IPQ to have good levels of internal consistency, test-retest reliability
and concurrent validity, demonstrated by correlations between IPQ scales and established
measures of disability, coping, self-rated health status and health distress.

ALCOHOL ABSTINENCE SELF-EFFICACY SCALE (AASES)
Efficacy beliefs are typically assessed by questionnaires, using Likert or visual analogue
scales to gauge the strength of belief. As discussed above, the specificity of self-efficacy
measures has been highlighted as an important consideration in selecting measures. The AASES
is a 20-item measure developed by DiClemente et al. (1994) to assess Bandura’s construct
of self-efficacy applied specifically to alcohol abstinence. Individuals are asked to rate their
confidence, using a 5-point scale, that they would abstain from alcohol across 20 high-risk
situations. These situations can be divided further into types of relapse precipitants labelled
'negative affect', 'social positive', 'physical and other concerns', and 'withdrawal or urges'.
A parallel set of items assesses participants' temptation to drink in each situation. The
temptation scale represents a measure of cue-strength and the confidence scale represents
an evaluation of efficacy expectations (DiClemente et al., 1994). The full scale therefore
consists of 40 items, due to the repetition, making it a rather lengthy instrument. Since the
focus in this study was abstinence self-efficacy, only the 'confidence' scale was used. This
was verified as a valid use of the confidence sub-scale by the authors (DiClemente, 1998 -
personal communication). The AASE demonstrates a solid sub-scale structure and strong
indices of reliability and validity (DiClemente et al., 1994). Most investigators examining
efficacy related to alcohol problems have used either the AASES or the Situational
Confidence Questionnaire (Annis & Graham, 1990). The latter emphasises control over
heavy drinking rather than abstinence and, since the behaviour of interest in the current
study was abstinence, the AASES was considered more appropriate.
READINESS TO CHANGE SCALE (RCQ)

The short-form 'Readiness to Change Questionnaire' described by Rollnick et al. (1992) was designed for use in medical settings with excessive drinkers who have not specifically sought help for their drinking. It is based on the Stages of Change model (Prochaska & DiClemente, 1986) and is designed to measure the patients' readiness to reduce heavy alcohol consumption. It consists of a 12-item questionnaire using 5-point rating scales for each item. It allows allocation of patients into those who are 'Ready to Change' (i.e. 'action' stage) and those who are 'Not Ready to Change' (i.e. 'precontemplation' stage or 'contemplation' stage). The questionnaire provides a short and convenient measure of 'readiness to change'. Principal component analysis of the scale revealed a clear factor structure corresponding to the 'precontemplation', 'contemplation' and 'action' stages of change (Rollnick et al., 1992). The scale has been shown to have good internal consistency and test-retest reliability (Rollnick et al., 1992) and Heather et al. (1993) showed good evidence of predictive validity in terms of changes in drinking behaviour over time.

2.4.2 VARIABLES MEASURED

The variables measured by each of the standardised questionnaires are summarised in Table 5. In most cases, one questionnaire was used to measure each variable. The exception to this was the measurement of causal attributions, where both interview questionnaires and questionnaire measures were utilised.

Table 5. Summary of Standardised Questionnaire Measures

<table>
<thead>
<tr>
<th>Variable measured</th>
<th>Questionnaire</th>
<th>No. items (sub-scales)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol Dependency</td>
<td>Severity of Dependence Scale</td>
<td>4</td>
</tr>
<tr>
<td>Health Value</td>
<td>Health Value Scale</td>
<td>4</td>
</tr>
<tr>
<td>Perceived Control</td>
<td>Illness Perception Questionnaire</td>
<td>27 (5)</td>
</tr>
<tr>
<td>Causal Attributions</td>
<td>Illness Perception Questionnaire</td>
<td>27 (5)</td>
</tr>
<tr>
<td>Abstinence (alcohol) Self-efficacy</td>
<td>Alcohol Abstinence Self-efficacy Scale</td>
<td>25 (4)</td>
</tr>
<tr>
<td>Stage of Change</td>
<td>Readiness to Change Questionnaire</td>
<td>12 (3)</td>
</tr>
</tbody>
</table>
The Severity of Dependence scale provided a measure of the degree of individuals’ perceived dependency on alcohol, including how difficult they found it to stop drinking. The Health Value Scale provided a measure of the importance of good health to the individual.

Causal attributions for illness were primarily obtained from semi-structured interview. Participants were initially asked “what do you think is the main cause of the illness for which you are now in hospital?” or, in the case of community sample, “what do you think is the main cause of your current illness?”. If respondents could not give a causal attribution in response, they were prompted further with questions about what they had been told by other people. Responses were not assigned a numerical rating, but instead answers were coded by the author as falling into one of the following categories; ‘definitely alcohol’ (clear statement that alcohol was the cause); ‘maybe alcohol’ (doctors say it is alcohol/unsure); ‘not alcohol’ (other cause/don’t know). All responses could be coded using these categories. Two independent judges coded causal beliefs as a reliability check. There was 90.9% agreement between the raters and discrepancies were discussed until agreement was reached. The IPQ Cause items “my illness is largely due to my own behaviour” and “my illness is largely due to my alcohol intake” were used as a validity check on the interview measure (see Results section).

The Alcohol Abstinence Self-efficacy Scale provided the measure of participants’ confidence in their ability to abstain from alcohol in a range of situations. A numerical score of level of confidence was obtained. The IPQ Control/cure scale provided a measure of the participants’ level of Perceived Control over their illness. The scale consists of six items and responses are summed to give an overall ‘control’ score, ranging from one to 30. The items making up the Control/cure scale were: my illness will improve in time; there is a lot I can do to control my symptoms; my treatment will be effective in curing my illness; what I do will determine whether my illness gets better or worse; there is very little that can be done to improve my illness; recovery from my illness is largely due to chance or fate.

Finally, the short-form Readiness to Change questionnaire enabled division of the sample into stage of change groups, namely precontemplation, contemplation and action. Participants were
also classified as ‘Ready to Change’ (‘action’) and ‘Not Ready for Change’ (‘precontemplation’ and ‘contemplation’), a method previously used by Heather et al. (1996) to divide samples. In addition, demographic information, illness-related information (diagnosis and time since diagnosis) and drinking-related information (frequency and quantity of consumption) was collected.

2.5 NOTE ON STATISTICAL ANALYSES

A decision to use parametric statistics relies on certain assumptions being satisfied, including normal distribution and interval-level data. Exploratory statistics revealed that several variables under analysis were not normally distributed and hence did not satisfy the first of these parameters. A second consideration was the nature of the data collected. There is some debate in the literature as to whether Likert-type scales, as used in this study, should be treated as interval or ordinal level data. It was considered that treating the data in this study as interval data may be misleading. For example, this would imply that a score of four on the AASES represented twice the degree of confidence of a score of two. It was considered that the numerical difference between scores was not meaningful in this way. The outcome (dependent) variable of ‘stage of change’ was treated as ordinal level data, since there is an implicit ordering of ‘action’ as a higher stage of change than ‘contemplation’ and ‘precontemplation’. Taking these considerations into account, it was thought to be most appropriate to use non-parametric tests.

In accordance with the design outlined above, analysis was at three levels. Bivariate analyses of relationships between pairs of variables were conducted. Tests of difference between the ‘ready for change’ and ‘not ready for change’ groups (Mann-Whitney test) and between precontemplation, contemplation and action groups (Kruskal-Wallis test) were used. Bivariate correlations (Kendall’s tau) and tests of association (Pearson’s Chi square) were also used to examine relationships between variables. Kendall’s tau (τ) was selected over the perhaps more popular Spearman’s rho (ρ) test of correlation, as it is considered to deal better with ties in rankings between groups, which are more likely to occur when the range of possible scores is
small. Eta (\(\eta\)) correlation ratios were also calculated to show the degree to which variables were related. Eta squared (\(\eta^2\)) provides a measure of the strength of association as it assess the proportion of the variation in the dependent variable that is predictable from knowledge of the levels of the independent variable. Logistic regression was used to look at the relative power of key variables as predictors of group membership ('ready for change' versus 'not ready for change'). Finally, between-group comparison of the in-patient and community groups were made, looking at differences in levels of abstinence self-efficacy.

For the purpose of analysis, the sample was treated as one group rather than being differentiated according to location. The primary objective was to obtain a reasonable sample of individuals with alcohol-related illness. Although it may have been more desirable to sample from only one location, the high attrition rate made recruitment difficult. This will be discussed in the following section. Participants from the two locations were well matched in terms of age, sex and time since diagnosis and it was considered reasonable therefore to treat them as one homogenous group.
3. RESULTS

This section will initially describe characteristics of the participants, including socio-demographic and illness-related information. Information on reliability of measures is presented, followed by details of hypothesis-testing. The main findings and conclusions are then summarised.

3.1 PARTICIPANT CHARACTERISTICS

DEMOGRAPHIC INFORMATION

Details of the demographic characteristics of participants are given in the methodology section. Mann-Whitney tests were calculated to examine whether there were any significant differences between the in-patient and community samples in terms of these demographic characteristics. Results of these analyses are given in Table 6. There were no significant differences between the two samples.

Table 6. Mann-Whitney U-values for Comparisons Between Hospital and Community Samples

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>U</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>92.0</td>
<td>0.12 n/s</td>
</tr>
<tr>
<td>Gender</td>
<td>120.0</td>
<td>0.12 n/s</td>
</tr>
<tr>
<td>Ethnic origin</td>
<td>121.5</td>
<td>0.39 n/s</td>
</tr>
<tr>
<td>Marital status</td>
<td>131.5</td>
<td>0.89 n/s</td>
</tr>
<tr>
<td>Living arrangements</td>
<td>105.0</td>
<td>0.23 n/s</td>
</tr>
<tr>
<td>Employment status</td>
<td>126.0</td>
<td>0.74 n/s</td>
</tr>
</tbody>
</table>

(n/s refers to non-significant)

HEALTH-RELATED INFORMATION

Diagnosis and Time Since Diagnosis

The diagnoses and the time since diagnosis of the two samples is given in Table 7. Twenty three participants had a diagnosis of liver disease (cirrhosis or hepatitis). Ten participants had multiple diagnoses, including cirrhosis. 'Other' conditions included peripheral neuropathy, peptic ulcers, cardiac problems and anaemia. Mann-Whitney tests of difference
indicated that there were no significant differences between the two groups in terms of
diagnosis ($U = 99.5; p > 0.05$) or time since diagnosis ($U = 116.5; p > 0.05$).

Table 7. Diagnosis and Time Since Diagnosis by Location of Recruitment

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>TIME SINCE DIAGNOSIS (months)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Cirrhosis/hepatitis</td>
<td>23</td>
</tr>
<tr>
<td>Pancreatitis (inc. liver)</td>
<td></td>
</tr>
<tr>
<td>Multiple</td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>5</td>
</tr>
<tr>
<td>Hospital</td>
<td>5</td>
</tr>
<tr>
<td>Community</td>
<td>0</td>
</tr>
</tbody>
</table>

**Drinking / Smoking Behaviour**

Twenty of the 33 participants were smokers (60.6%). Table 8 shows drinking frequency (per week) and quantity (typical number of units in 24 hours) of alcohol over the month prior to interview, based on self-report information.

Table 8. Frequency and Quantity of Alcohol Consumption in Previous Month

<table>
<thead>
<tr>
<th>FREQUENCY (times/week)</th>
<th>QUANTITY (units/24 hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None 1-3 4-6 Daily</td>
<td>None 1-5 6-10 11-20 20+</td>
</tr>
<tr>
<td>All</td>
<td>7 3 8 11 4</td>
</tr>
<tr>
<td>Hospital</td>
<td>1 2 1 11 1</td>
</tr>
<tr>
<td>Community</td>
<td>6 2 2 8 6</td>
</tr>
</tbody>
</table>

Information concerning participants' previous attempts at abstinence are shown in Figure 2. Twenty-seven of the 33 (81.8%) participants had attempted to abstain from alcohol during the previous five years. Six had sustained abstinence for over a year. There were no significant differences between the two samples in terms of the quantity of alcohol.
consumed (U = 93.5, p > 0.05) or the frequency of alcohol consumption (U = 90.0, p > 0.05) in the month prior to interview.

**Abstinence and Reasons for Relapse**

Participants' main reported reasons for returning to drinking after a period of abstinence are illustrated in Figure 3. Eleven cited stressful life events, including divorce or separation, bereavement, loss of work, eviction or housing problems. Seven out of 33 reported mood disturbance as the main cause, including anxiety, depression, low self-esteem, loneliness and anger. Four out of 33 cited social pressure, for example contact with previous drinking companions or celebrating specific events (weddings, birthdays) as the reason for relapse. Five out of 33 reported physical craving or 'habit'.

Figure 2. Attempts at Abstinence During the Past Five years
3.2 MEASURES OF SELF-BLAME

Causal attributions were obtained from semi-structured interview. Attributions to ‘Alcohol’ (definitely alcohol/maybe alcohol) were used as a measure of behavioural self-blame. In the current sample, 22 of the 33 (66.7%) made a definite causal attribution to their drinking (‘definitely alcohol’ group) and eight (24.2%) responded that it may be alcohol, or that their doctor said it was alcohol, but they were unsure.

Correlations between interview responses and the IPQ items “my illness is largely due to my own behaviour” and “my illness is largely due to my alcohol intake” were examined as a validity check and results of these analyses are given in Table 9. Significant correlations were found between these measures of Behavioural Self-blame, providing evidence for the validity of the interview responses as a measure. The interview data were therefore used in subsequent analysis.

Figure 3. Main Reported Reason for Returning to Drinking after Abstinence

<table>
<thead>
<tr>
<th>Reason for relapse</th>
<th>Number of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life events</td>
<td>12 (33.3%)</td>
</tr>
<tr>
<td>Mood</td>
<td>10 (21.2%)</td>
</tr>
<tr>
<td>Habit/craving</td>
<td>8 (15.2%)</td>
</tr>
<tr>
<td>Social</td>
<td>6 (12.1%)</td>
</tr>
<tr>
<td>No attempt</td>
<td>5 (18.2%)</td>
</tr>
</tbody>
</table>
Table 9. Kendall’s Tau Correlations for Measures of Behavioural Self-blame

<table>
<thead>
<tr>
<th>Measure</th>
<th>Interview - Causal attribution to alcohol</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPQ ‘alcohol-intake’</td>
<td>0.525 **</td>
</tr>
<tr>
<td>IPQ ‘own behaviour’</td>
<td>0.535 **</td>
</tr>
</tbody>
</table>

One-tailed test ** p < 0.01

All remaining variable measures involved standardised questionnaires with demonstrated validity and reliability (see section 2.4.1).

3.3 HYPOTHESIS TESTING

Throughout the following analyses, the ‘Ready for Change’ group refers to those participants in the Action stage of change. The ‘Not Ready for Change’ group refers to those in the Precontemplation and Contemplation stages of change. The 95% confidence level of significance is used throughout, with significant findings therefore referring to a p-value of less than 0.05.

HYPOTHESIS 1 (A):
Greater confidence in ability to abstain from alcohol (Abstinence Self-efficacy) will be related to greater Readiness to Change drinking behaviour.

Mann-Whitney two-way tests of difference between the ‘Ready for Change’ and ‘Not Ready for Change’ groups indicated a significant difference between participants in terms of Abstinence Self-efficacy (total AASES scores) (U = 72.5, p < 0.05). Kruskal-Wallis three-way tests of difference between the Precontemplation, Contemplation and Action groups also indicated significant differences between participants in each stage in relation to Abstinence Self-efficacy scores ($\chi^2 = 6.567$, df = 2, p < 0.05). The null hypothesis that there was no significant difference in AASES scores between participants in different Stages of Change was therefore rejected.

Abstinence Self-efficacy scores were split at the median to form two groups, representing high and low Self-efficacy. A Chi-square test showed a significant association between
these two groups and Stage of Change (Precontemplation, Contemplation and Action) \( (\chi^2 = 7.167, \text{df} = 2, p < 0.05) \). Figure 4 shows the distribution of AASES scores (high and low self-efficacy according to a median-split of AASES scores) across Stages of Change.

An Eta correlation ratio was also calculated for Abstinence Self-efficacy and Stage of Change (Precontemplation, Contemplation and Action) to examine the magnitude of the effect of Self-efficacy on Stage of Change. This indicated that 26.3% of the variation in Abstinence Self-efficacy scores was accounted for by Stage of Change group membership \( (\eta = 0.513; \eta^2 = 0.263) \).

Figure 4. Median-split AASES Scores and Stage of Change

There was therefore good evidence to support the hypothesis that greater confidence in ability to abstain from alcohol is related to greater Readiness to Change drinking behaviour in this sample.
HYPOTHESIS 1 (B):
Greater Perceived Control over illness will be related to greater Readiness to Change drinking behaviour

A Mann-Whitney test showed no significant difference between the ‘Ready for Change’ and ‘Not Ready for Change’ groups in terms of IPQ Control scores (Perceived Control). Similarly, Kruskal-Wallis tests showed no significant difference between the three stage of change groups (Precontemplation, Contemplation and Action) at the p < 0.05 level in terms of Perceived Control. The prediction that there would be significant differences between the Stages of Change in terms of Perceived Control over illness was therefore not supported.

An Eta correlation ratio was calculated and indicated that only 2.8% of the variation in Perceived Control was accounted for by Stage of Change group membership ($\eta = 0.167, \eta^2 = 0.028$). The hypothesis that greater Perceived Control over illness is related to greater Readiness to Change drinking behaviour was therefore not supported.

HYPOTHESIS 1 (C):
Individuals attributing the cause of their illness to their own behaviour (Behavioural Self-blame) will show greater Readiness to Change drinking behaviour.

A Chi square test of association between Causal Attributions (definitely alcohol/maybe alcohol/not alcohol) and Readiness to Change (ready/not ready) was carried out. Due to the limited sample size and the skewed distribution of the data towards the ‘Action’ Stage of Change, three cells had an expected count of less than five, indicating that results should be considered with caution. However, recent debate suggests that the Chi-square statistic can be properly used in cases where the expected values are much lower than the bottom limit of five previously considered permissible. Even expected frequencies as low as one per cell may be acceptable in terms of Type 1 error, provided that there are a reasonable number of individuals overall (Aaron & Aaron, 1999).
In the current analysis, no significant association was found between Readiness to Change and Causal Attribution. The hypothesis that Self-blame was associated with greater Readiness to Change was not supported and the null hypothesis that there is no association between the two variables was therefore accepted as true. Figure 5 illustrates the relationship between Causal Attributions and Readiness to Change.

Figure 5. Causal Attributions (Behavioural Self-blame) and Readiness to Change

Cramer’s V test for association between pairs of nominal data indicated that there was no significant relationship between Readiness to Change and Causal Attributions. There was therefore no evidence to support the hypothesis that causal attribution to one’s own behaviour (Behavioural Self-blame) is related to greater Readiness to Change drinking behaviour.
HYPOTHESIS 1 (D):
Greater value placed on health will be related to greater Readiness to Change drinking behaviour.

A Mann-Whitney test showed no significant difference between ‘Ready to Change’ and ‘Not Ready to Change’ groups in terms of Health Value (HVS scores). Similarly, three-way tests of difference (Kruskal-Wallis) indicated that there were no significant differences in Health Value across the three Stage of Change groups of Precontemplation, Contemplation and Action.

An Eta correlation ratio was calculated to examine the strength of the relationship between Health Value and Readiness to Change. The results of this analysis indicated that only 5.6% of the variance in Health Value was accounted for by difference in stage of change group membership ($\eta = 0.236$, $\eta^2 = 0.056$). The hypothesis that greater Health Value would be related to greater Readiness to Change was therefore not supported.

HYPOTHESIS 1 (E):
Lower levels of Alcohol Dependency will be related to greater Readiness to Change drinking behaviour.

A Mann-Whitney test of difference between the ‘Ready to Change’ and ‘Not Ready to Change’ groups indicated significant difference at the $p < 0.01$ level between these two groups in terms of their level of Alcohol Dependency ($U = 34.5$, $p < 0.01$). Three-way analysis (Kruskal-Wallis test) of differences between the three Stages of Change (Precontemplation, Contemplation and Action) were also significant at the $p < 0.01$ level ($\chi^2 = 11.9$, df = 2, $p < 0.01$).

The relationship between Stage of Change and Alcohol Dependency is shown in Figure 6.
There was therefore strong evidence to support the hypothesis that lower levels of Alcohol Dependency are related to greater Readiness to Change.

Figure 6. Alcohol Dependency and Stage of Change

![Bar chart showing Alcohol Dependency scores grouped by stage of change.]

**Stage of Change**
- Precontemplation
- Contemplation
- Action

**Alcohol Dependency scores (grouped)**

[HYPOTHESIS 2 (A):]

Causal attributions to individuals' own behaviour (Behavioural Self-blame) will be associated with greater Perceived Control over illness

It was hypothesised that there would be a significant association between Causal Attributions for illness (Behavioural Self-blame) and degree of Perceived Control over illness. A Kruskal-Wallis test was calculated to examine differences between Causal Attribution groups (definitely alcohol/maybe alcohol/not alcohol) in terms of levels of Perceived Control (IPQ Control scores). This indicated that there were no significant differences in levels of Perceived Control across Causal Attributions.
Scores on the IPQ Control scale were split at the median to create two groups representing high and low Perceived Control. The association between high/low control and Causal Attributions was examined using a Chi square test. There was no significant association between the two variables. Figure 7 shows the relationship between Perceived Control and Causal Attributions.

Figure 7. Perceived Control and Causal Attributions

HYPOTHESIS 2 (B):
Confidence in ability to abstain from alcohol will correlate with greater Perceived Control over illness

It was predicted that AASES scores would be significantly correlated with IPQ Control scores. One-tailed Kendall's tau correlations were calculated between Abstinence Self-efficacy (AASE) and IPQ Control. Results of this analysis indicated that there was no significant correlation ($\tau = 0.161$, $p > 0.05$). The hypothesis that greater confidence in
ability to abstain from alcohol will be correlated with greater Perceived Control over illness was therefore not supported.

In exploratory post-hoc analysis, individual items within the IPQ Control scale were considered. Individual IPQ items have been used by other researchers to provide sub­measures within a scale, for example, Moss-Morris, Petri & Weinman (1996) combined IPQ Cause scale items to measure ‘emotional cause’. Whilst this post-hoc method has limited reliability, tentative exploration of the data in this way suggested that ‘personal control’ over illness may be associated with self-efficacy where ‘general control’ beliefs show no association. Two IPQ control scale items relate specifically to perceptions of illness under personal control, as opposed to control of other people or chance: “There is a lot that I can do to control my symptoms”/ “What I do can determine whether my illness gets better or worse”. Responses were summed to give a measure of ‘personal control’, ranging from 0-10 and examined in relation to Abstinence Self-efficacy scores.

Kendall’s tau correlations between Abstinence Self-efficacy and Personal Control over illness indicated significant correlation between these variables (τ = 0.268, p < 0.05). The relationship between Abstinence Self-efficacy and Personal Control is shown in Figure 8. Greater Personal Control over illness was significantly correlated with greater Abstinence Self-efficacy. However, due to the lack of demonstrated reliability of the measure and the post-hoc nature of the analysis, this can only be used as a tentative indication of a relationship between personal control and self-efficacy. The analysis is not considered sufficiently rigorous to be the basis for rejection or acceptance of a hypothesis concerning control beliefs.
HYPOTHESIS 3:
Hospital in-patient status at the time of interview will be associated with greater confidence in ability to abstain from alcohol.

A Mann-Whitney test was calculated to examine differences between the hospital and community samples in terms of degree of confidence in ability to abstain (Abstinence Self-efficacy scores). No significant difference was found between the two groups.

The sample were divided into two groups according to a median-split of AASES scores, representing high and low Abstinence Self-efficacy. A Chi-square test indicated a significant association between high/low Abstinence Self-efficacy and location of the sample ($\chi^2 = 3.64$, df = 1, p < 0.05). Cramer’s V coefficient indicated that this was a weak association ($V = 0.332$, p = 0.056). This is shown in Figure 9.
Though there was some evidence of an association between these variables, the hypothesis that in-patient status is related to greater confidence in ability to abstain from alcohol (Abstinence Self-efficacy) was not strongly supported. It could be argued that a median-split of Self-efficacy scores has limited validity in that the criteria for division of the sample comes from within the sample itself (i.e. the median) rather than norms for a clinical population. It was considered that there were insufficient grounds to reject the null hypothesis that there is no relationship between the variables.

HYPOTHESIS 4:
Abstinence Self-efficacy, Perceived Control, Behavioural Self-blame, Health Value and Alcohol Dependency will account for the variation between individuals in the ‘Ready for Change’ group and those in the ‘Not Ready for Change’ group. Of these, Abstinence Self-efficacy will account for the largest proportion of the variance.
Logistic regression analysis was conducted to examine the extent to which independent variables were predictive of Stage of Change group membership. Ideally, Self-efficacy, Perceived Control, Behavioural Self-blame, Health Value and Alcohol Dependency would have been entered into the regression equation. However, it is recommended that for each independent variable entered, there should be 10 participants in the sample. Due to the limited sample size, the number of predictor variables needed to remain fairly small. The choice of predictor variables was based on the results of earlier statistical analyses and those with a significant relationship or close to a significant relationship were entered. The predictors selected were Abstinence Self-efficacy, Alcohol Dependency and Perceived Control. Logistic regression makes no assumptions about the distributions of the predictor or outcome variables and was therefore preferable to multiple regression due to the nominal level of the outcome variable. Predictors were entered using a backward stepwise logistic regression. Stepwise methods are used to evaluate the contribution of variables to the regression equation. The backwards stepwise method begins with all of the variables in the model. Then, at each step, variables are evaluated for entry and removal from the model, on the basis of their significance (Tabachnik & Fidell, 1996). This method was used as it examines several possible models and selects the best model for prediction.

Table 10 shows the regression coefficients, associated probabilities and odds ratios for each of the predictors related to the dependent variable when all three predictors were included in the regression model. The success rate for the model including all three predictors was 78.79%.

Table 10. Regression Coefficients, Probabilities and Odds Ratios for Logistic Regression Analysis for Alcohol Dependency, Abstinence Self-efficacy and Perceived Control

<table>
<thead>
<tr>
<th>Variable</th>
<th>Regression coefficient (B)</th>
<th>Probability</th>
<th>Odds ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol Dependency</td>
<td>-0.366</td>
<td>0.014</td>
<td>0.694</td>
</tr>
<tr>
<td>Abstinence Self-efficacy</td>
<td>0.024</td>
<td>0.392</td>
<td>1.024</td>
</tr>
<tr>
<td>Perceived Control</td>
<td>-0.015</td>
<td>0.899</td>
<td>0.986</td>
</tr>
</tbody>
</table>
However, the model giving the best prediction of ‘Action’ contained only Alcohol Dependency as a predictor, and the regression equation for this model was as follows:

\[
\text{Logit (Action)} = 3.56 - 0.39 \times \text{Alcohol Dependency}
\]

The \(\chi^2\) goodness of fit for this model was significant at 0.0002 level (\(\chi^2 = 14.13\), df = 1). The overall success rate of this model in predicting Stage of Change group membership was 84.85%, with success rates of 90.48% and 75.0% respectively for ‘Ready to Change’ and ‘Not Ready to Change’ groups.

The results of these analyses indicate that Alcohol Dependency was a significant predictor of Stage of Change group membership (\(p = 0.005\)). Results suggest that a one-point increase in the (mean) Alcohol Dependency score implies that a person is 0.67 times less likely to be classified as ‘Ready to Change’. Abstinence Self-efficacy and Perceived Control over illness were not shown to be significant predictors. Abstinence Self-efficacy made a minimal contribution to the model when entered into the regression equation alongside Alcohol Dependency. Significant correlations between variables within the model can influence success rate in predicting the outcome variable and relationships between Alcohol Dependency and Control beliefs (Self-efficacy and Perceived Control) were therefore analysed.

### 3.4 FURTHER ANALYSES

As a result of hypothesis testing, Alcohol Dependency was found to be a strong predictor of Readiness to Change and, contrary to prediction, accounted for a greater proportion of the variation in Readiness to Change than Abstinence Self-efficacy. The contribution of each variable within a regression model is dependent on the other variables in the equation and the success of the model may be influenced by correlations between variables. These were examined using Kendall’s tau correlations. One-tailed tests were used since it was could be reasonably predicted that lower levels of dependency would be related to greater Perceived Control and greater Abstinence Self-efficacy. Results of these analyses are given in Table 11.
Table 11. Kendall’s Tau Values for Correlation of Alcohol Dependency, Perceived Control and Abstinence Self-efficacy

<table>
<thead>
<tr>
<th></th>
<th>Alcohol Dependency (SDS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Control (IPQ)</td>
<td>-2.41*</td>
</tr>
<tr>
<td>Abstinence Self-efficacy (AASES)</td>
<td>-3.72**</td>
</tr>
</tbody>
</table>

* p < 0.05; ** p < 0.01. For all other values, p > 0.05
(One-tailed test)

Figure 10. Perceived Control and Alcohol Dependency

The correlation between Alcohol Dependency and Perceived Control over illness was significant at the 0.05 level. The relationship between dependency and Perceived Control is illustrated in Figure 10. The scatter plot indicates a weak negative association between the variables suggesting that greater Perceived Control over illness is associated with lower levels of Dependency.
A significant negative correlation was found between Alcohol Dependency and Abstinence Self-efficacy. The relationship between these variables is shown in Figure 11. The scatter plot indicates that greater confidence in ability to abstain from alcohol is related to lower levels of dependency.

Figure 11. Abstinence Self-efficacy and Alcohol Dependency

These analyses indicate that the degree of Alcohol Dependency of an individual is significantly related to beliefs about control, particularly confidence in ability to control drinking behaviour through abstinence.

A summary of the results are presented at the beginning of the discussion section, followed by consideration of the implications of these findings.
4. DISCUSSION

4.1 SUMMARY OF CURRENT FINDINGS

1. Significant differences were found between those classified as ‘ready to change’ and those ‘not ready to change’ in terms of Abstinence Self-efficacy and Alcohol Dependency. Those in the ‘action’ stage of change had greater confidence in their ability to abstain and were significantly less ‘dependent’ on alcohol. No significant differences were found between the stages of change and Perceived Control over illness, Behavioural Self-blame or Health Value.

2. Two thirds (66.7%) of the participants reported that alcohol was a major causal factor in their illness and around a quarter (24.2%) thought that it may be a causal factor, but were unsure.

3. Alcohol Dependency was found to be a significant and strong predictor of classification as ‘Ready to Change’, while Abstinence Self-efficacy and Perceived Control were not predictive. There were significant correlations between Abstinence Self-efficacy and Alcohol Dependency and between Perceived Control and Alcohol Dependency.

4. Perceived Control over illness was not found to be significantly related to Behavioural Self-blame or Abstinence Self-efficacy. However, there was some indication that greater Abstinence Self-efficacy was associated with greater perceived ‘Personal Control’ over illness, as opposed to control by ‘others’ or due to ‘chance’.

5. There was tentative support for the hypothesis that admission to hospital has an effect on individuals’ Abstinence Self-efficacy. Graphical representation indicated that in-patient status was related to greater confidence in ability to abstain.
4.2 INTERPRETATION OF THE FINDINGS

The following section will discuss the current findings, primarily in relation to predicting 'Readiness to Change'. Links between factors and their implications are discussed where relevant. It will draw attention to clinical and theoretical implications, though these will also be summarised in subsequent sections. The five key variables will be discussed in turn.

4.2.1 ABSTINENCE SELF-EFFICACY

Self-Efficacy and Readiness to Change

As predicted, an individual's confidence in their ability to abstain from alcohol was significantly related to their readiness to change their drinking behaviour. This is in accordance with a substantial body of research literature in both the addictions and health fields indicating that self-efficacy is a major predictor of cessation and maintenance of behaviour change (DiClemente et al., 1985; Condiotte & Lichtenstein, 1981). Clearly, this is an important finding as it implies that intervention aimed at increasing individuals' confidence in their ability to change is likely to have an impact on motivation. But, what does this finding tell us about the likelihood that an individual will decide to change, based on their confidence that they will be able to do so?

The notion of self-efficacy has become so appealing to health psychologists that it has been adopted as part of most health-behaviour theories. (Schwarzer & Fuchs, 1996). However, high self-efficacy is not necessarily sufficient in itself to motivate change. Other factors may mediate between self-efficacy and taking action, such as control beliefs and perceived dependency (discussed below). Although a person may be highly self-efficacious with regard to a particular behaviour, it does not automatically follow that they will actually engage in that behaviour. A number of participants in the current study reported feeling confident that they could change, yet continued to drink. There may be many drinkers who believe that they could stop any time they wanted to, only they never want to, or the circumstances are never conducive for them to actually do it.
Wallston, Wallston, Smith, and Dobbins (1989) suggested that the seeming ability of self-efficacy beliefs to predict behaviour may be mostly due to the impact of low self-efficacy beliefs. That is, a lack of confidence, or a belief that you cannot stop drinking may be a sufficient causal explanation for not changing, whilst high self-efficacy may or may not lead to change. For example, Solomon & Annis (1990) reported that it was drinkers' low self-efficacy measured at intake to a treatment programme which was predictive of later heavy drinking. As well as knowing that a link exists, it seems important to think about how self-efficacy is linked to motivation. For example, the relationship between high self-efficacy and 'action' may be mediated by a person's expectation that stopping drinking would have a beneficial outcome.

**Self-Efficacy and Outcome-Expectancies**

As discussed in the introductory review, a distinction is made in Bandura's self-efficacy theory (Bandura, 1977) between judgements of personal self-efficacy over behaviour and judgements about the possible outcomes of that behaviour. In the present study, health value was considered as one such outcome-expectancy, with the assumption that people need to value good health before they are likely to consider changing health-related behaviour (see section 4.3).

Eastman & Marzillier (1984) examined the conceptual basis for self-efficacy theory and suggested that what is actually being assessed in empirical studies is unclear. They argued that it is impossible to exclude outcome considerations since people are concerned about the outcome of their behaviour as well as their competency to perform a task. They considered that in viewing self-efficacy and outcome as conceptually distinct, Bandura (1977) failed to credit the importance of outcome-expectations. Similarly, Schwarzer & Fuchs (1996) highlighted the importance of outcome-expectancies in the formation of intentions and that both outcome-expectancies and efficacy beliefs play influential roles in adopting health-protective behaviour or eliminated health-damaging behaviour. A problem drinker then, may believe that they can stop drinking, but fail to do so because they do not believe that abstinence will have a beneficial effect on their illness/health. This may be particularly relevant when the individual does not recognise their drinking as causal in their illness, as they are less likely to
consider that stopping drinking will avoid further ill-health. In the current study, around a quarter of the participants were 'unsure' about this link and a further ten per cent felt that alcohol was not a causal factor. A sizeable proportion of participants were therefore reporting uncertainty about the link between their illness and their drinking, which may have affected results.

Once a decision to change has been reached, outcome-expectancies are thought to become less important and at this 'action' stage, perceived self-efficacy is of primary importance (Schwarzer & Fuchs, 1996). That is, once a drinker has decided that change is worthwhile in terms of health outcome, their beliefs about their ability to remain abstinent become primary. This suggests that, at the decision-making stage, expectancies of the likely benefits to health, as well as the value placed on health, will be important influences. In addition, given the apparent importance of outcome-expectations, beliefs about the consequences of a change in drinking pattern may also be influential.

**Alcohol-Expectancies**

The decision whether to drink or not is embedded within a complex biological, psychological and social framework and it cannot necessarily be assumed that problem drinkers will consider that abstinence from alcohol will lead to wholly positive outcomes. Solomon & Annis (1989) argued that, although therapists may assume that modification of drinking behaviour will result in positive outcomes, this assumption may not be shared and outcomes may not be positively or equally valued by clients. For example, an individual may anticipate that abstinence will result in social isolation from friends, or a lack of confidence or assertiveness. If people do anticipate negative outcomes, it is unlikely that drinking goals will be maintained unless they reappraise such beliefs or learn new coping skills for the negative consequences they anticipate (Solomon & Annis, 1989). Ambivalence about the outcome of change has become the specific focus of motivational interviewing (see section 4.2.4) (Miller & Rollnick, 1991). It is argued that a focus on skill-building and enhancing self-efficacy could be premature if the client feels pessimistic about the relative balance between perceived costs and benefits of change.
The degree to which the individual perceives a negative outcome of change may be associated with their perceived 'dependency', in terms of reliance on alcohol to cope with stressful situations. It is widely accepted that people often drink alcohol to regulate the quality of their emotional experience (Cooper, Frone, Russell, & Mudar, 1995). According to Wills & Shiffman (1985), individuals use alcohol to reduce or manage dysphoria when they are anxious or over-aroused (to cope), as well as to enhance positive emotional experience. It may be then, that individuals' beliefs about their ability to cope without alcohol are important as a facet of their self-confidence to abstain. Perception of alcohol as empowering and anxiety-reducing may enhance the person's temptation to drink, especially in stressful situations and in the absence of other adequate coping strategies. This may account for the strong effect of perceived dependency, measured by the Severity of Dependency Scale in the current study, and its correlation with self-efficacy. When faced with stressful situations, such as significant illness, people may feel more reliant on alcohol to cope, particularly as this is likely to be how they have coped in the past. It seems logical to propose that this enhanced feeling of reliance on alcohol leads individuals to feel less confident that they can go without drink.

**Self-Efficacy and Perceived Dependency**

Contrary to prediction, abstinence self-efficacy was not found to be the strongest predictor of stage of change and 'alcohol dependency' accounted for a far greater proportion of the variance in readiness to change. This may be a function of the diversity of behaviours examined in the literature on which the current hypothesis was based. These studies incorporate a range of medical conditions and health-behaviours in which dependency may not necessarily be an issue, for example, the up-take of a new behaviour, such as regular exercise. Studies that have concerned dependency, such as smoking behaviour, have tended to focus on physiological craving rather than psychological components of dependence.

In the context of the current study, 'dependency' refers to psychological components of dependency rather than 'physiological dependency' or an 'alcohol dependence syndrome' of measurable symptoms, such as that described by Edwards et al. (1977). The Severity of
Dependence Scale measures the degree of psychological dependence experienced by the drinker (Gossop et al., 1995). It is explicitly concerned with impaired control over drinking and with preoccupation and anxieties about alcohol use. As such, a person with high psychological dependency may feel more passive in relation to their alcohol use and therefore have low self-efficacy and low outcome-expectancy. The causal direction of the relationship between psychological dependency and self-efficacy is unclear. Though greater perceived dependency was found to be related to less confidence in ability to abstain, it is not clear whether a lack of self-confidence to abstain results from feeling more dependent on alcohol, or whether feeling more dependent results in a lack of self-confidence. It may be that enhancing an individual’s confidence in their ability to abstain would be of considerable benefit in reducing their perceived dependency on alcohol.

In addition, the finding that perceived dependency is a stronger predictor of motivation than self-efficacy could reflect the specificity of the self-efficacy measure. Total abstinence from alcohol may be perceived more negatively in terms of potential outcomes than reduced or controlled drinking. Abstinence, particularly for a person who perceives themselves to be highly dependent on alcohol, is likely to seem a very daunting goal, requiring significant motivation. It is possible that participants would have expressed greater confidence in their ability to cut-down their drinking and that ‘control’ self-efficacy (avoidance of heavy drinking) may have been a more powerful predictor of readiness to change.

**Self-Efficacy and Location of Recruitment**

There was tentative evidence to support the hypothesis that being in hospital has an impact on abstinence self-efficacy. Due to the limits of the data set, it was only possible to test associations and therefore the direction of this relationship could not be verified. However, it seemed that in-patient status was associated with greater confidence in ability to abstain. There are a number of speculative explanations for this finding.

People’s health and illness behaviour take place within a social context, and that context changes when they enter the medical-care system. In accordance with the cue-reactivity
literature (see section 1.7.3), the apparent increase in self-efficacy whilst in hospital may reflect altered behavioural contingencies. In their usual environments, people are presumably faced with a number of cues or triggers that have acquired the status of conditioned antecedents to drinking behaviour. In the absence of such cues, the individual may feel greater resilience in their ability to resist temptation and avoid drinking. Those in the community sample are more likely to be faced with such cues, or else have to actively avoid them. For example, a number of participants in the community sample commented that they had stopped going to certain places or seeing certain people because they knew that it would be extremely difficult to avoid drinking if they did. Some commented on the need to keep their mood stable and avoid becoming angry, upset or anxious, as they felt that these would be powerful triggers to drinking. In addition to being distanced from the usual contextual cues to drinking, hospitalised people are experiencing enforced abstinence. Whilst in hospital, they are coping without alcohol, albeit because they have no opportunity to do otherwise, but this may effect their confidence that they can maintain this when they return home.

4.2.2 PERCEIVED CONTROL

Perceived Control and Readiness to Change
There was no significant relationship between individuals’ perception of control over their illness and their readiness to change. This was somewhat surprising, given the research evidence associating beliefs about control and positive adaptation to illness (Tennen et al, 1984; Thompson, 1981; Witenberg et al, 1983). It was anticipated that, due to the potential for control via behavioural change in alcohol-related illness, those who believed that alcohol was a major causal factor would feel they had greater control over their illness and that this would relate to greater readiness to change drinking behaviour. The relationship between perceived control and causal attributions (behavioural self-blame) was also not significant (see section 4.2.4). These findings merit discussion on a number of points.
The first relates to the specificity of the 'control' measure that was used. In the literature, the variety of labels and definitions used to discuss issues of control makes interpretation of studies difficult. Wallston et al. (1989) emphasised the need for investigators to clearly conceptualise the object of perceived control and whether this is control over behaviour, outcome or process. The IPQ Control/cure scale was selected for the present study as it asked about perceived control over a named illness, measuring the extent to which that specific illness was controllable/curable and the means by which this may occur. In contrast, many of the studies linking perceptions of control to positive adaptation have used a measure of control expectations over general health, such as the Health Locus of Control scale (Wallston et al., 1978).

This brings into question how responses may have differed if individuals had been asked about their control-expectancies over general health. Particularly in the case of alcohol-related illness, the specificity of measurement may have implications for the degree of perceived control reported. The object of control assessed by the IPQ scale is, at face value, the future outcome of their illness. However, because of its inclusion of items about the means by which control/cure may occur, the IPQ scale may tap into peoples' beliefs about their drinking itself and its controllability, since drinking is the way in which illness is potentially controllable. The failure of 'perceived control' to predict 'readiness to change' may be a function of the impact of psychological dependency on beliefs about the controllability of illness. Also, researchers reporting 'control' as a predictor of behaviour change have tended to look at the adaptiveness of 'internal' control beliefs rather than the overall controllability of an illness. It may be that the current findings would have been more conclusive if a specific measure of 'personal control' over illness had been used.

Speculation about the role of psychological aspects of dependency leads to the issue of the extent to which control in alcohol-related illness is desirable or helpful. 'Internal' locus of control belief over health is considered to be related to greater sense of responsibility for health (Wallston & Wallston, 1982). Linked to the issue of behavioural self-blame (see section 4.2.4), the question arises as to the adaptability of perceived personal responsibility
when ‘dependency’ is involved. Often in the literature, beliefs about control are equated with a desire or preference for control, as if people who felt that they had control always unquestionably want it. A problem drinker may feel responsible for his/her own health, but this does not necessarily mean that the responsibility is welcomed.

Wallston et al. (1989) drew attention to the fact that it is possible to feel responsible for one’s health status and yet not perceive that one can control it. Those who have an illness that they know to be related to their drinking may feel responsible for that illness, and even know that their future behaviour will have an impact on the course of that illness, but this does not necessarily equate to feeling that their drinking itself is controllable. The IPQ measure seems to tell us the extent to which individuals feel that their illness is potentially controllable. The individual may know that what they do will determine whether their illness gets better or worse, yet not feel that they are in control of what they do, due to the extent of their perceived ‘dependency’ on alcohol. The individual may have in their mind that their problem with drinking is genetically inherited or that it is a disease (‘alcoholism’) rather than a potentially controllable habit. Indeed, a number of participants reported that their problem drinking was hereditary, commenting that a parent or close relative had been ‘alcoholic’ and that they had been afflicted with the same ‘illness’. This may explain why perception of the controllability of illness was not found to be predictive of readiness to change and leads to interesting questions about the inter-relationships between perceived controllability of illness, abstinence self-efficacy and perceived dependency. It also raises questions as to individuals’ beliefs about the nature of their alcohol problems as an ‘addiction’.

**Alcohol Dependence versus ‘Alcoholism’**

It is apparent that it is important to be clear about what is meant by the term ‘dependence’, as it has been used to refer to physiological symptoms, or a cluster of signs such as in an ‘alcohol dependence syndrome’ (Edwards et al. (1977). As stated previously, the Severity of Dependence Scale (Gossop et al., 1995) used in the current study focuses on psychological components of dependence. Given the links between this measure and
control/efficacy beliefs, it may be that high perceived dependency on this measure is indicative of a sense of powerlessness or helplessness over alcohol and as such is more akin to the concept of ‘alcoholism’. Although the majority of professional workers in Britain have rejected the idea of a disease of ‘alcoholism’, there is a large gap between their understanding and that of the general public (Heather & Robertson, 1997) and it seems that this is still a common public perception. Holding such a belief clearly has significant implications for motivation. A ‘disease’ perspective implies that the ‘alcoholic’ is not responsible for their drinking behaviour and therefore cannot be blamed for it, or expected to control it. It seems entirely feasible that, whilst professional workers have abandoned this concept as outmoded, drinkers continue to believe themselves to be powerless to their ‘alcoholism’. Thus, psychological or perceived dependency may, for the drinker, be synonymous with ‘addiction’.

**Perceived Control and Abstinence Self-Efficacy**

The prediction that perceived control would be significantly related to abstinence self-efficacy was not supported. However, there was an indication that beliefs about ‘personal control’ over illness were related to self-efficacy beliefs. Specifically, individuals’ beliefs about the extent to which they themselves could do something to control their symptoms and the extent to which their own behaviour could affect whether their illness got better or worse, were significantly correlated with abstinence self-efficacy. Though the direction of this relationship could not be verified, the data indicated that greater confidence in abstinence corresponded to greater belief that illness was under personal control. This seems to add weight to the suggestion that the extent to which illness is perceived to be controllable is to some extent influenced by belief that drinking itself is controllable.

**Habit-specific Control**

Habit-specific locus of control measures assess the degree to which an individual believes that specific habitual behaviours are under his/her control or are due to external influences. In a recent paper, Schneider & Busch (1998) discussed control-expectancies for drinking. They found both Rotter’s Locus of Control Scale and a drinking-specific scale (Donovan &
O'Leary, 1978) to be correlated with measures of problematic use. However, the habit-specific scale demonstrated stronger relationships with measures of dysfunctional use, tolerance and alcohol consumption than did the general measure of control. Self-reports of addiction were associated with more 'external' scores. Schneider & Buchs (1998) concluded that habit-specific control is similar to self-efficacy, which has been related to the level of alcohol consumption (Solomon & Annis, 1990) and that assessment of control-expectancies for specific behaviours may be more useful than a general measure for planning prevention and treatment programmes. In the current study, findings relating to perceived control may have been influenced by beliefs about the extent to which drinking behaviour is controllable. Habit-specific scales may therefore provide an interesting comparison measure for exploring these relationships further.

**Perceived Control and Psychological Dependency**

The degree of alcohol dependency, measured by the Severity of Dependency Scale (SDS), was significantly related to perceived control over illness. It seems that individuals who perceive themselves to be less psychologically dependent on alcohol are more likely to feel that their illness is controllable. ‘Psychological dependency’ may be conceptualised as the extent to which an individual perceives that their use of alcohol is controllable. Indeed, the first item of the SDS asks respondents the extent to which they feel that their alcohol use is out of control. The antithesis to feeling in control is to feel helpless. A person may know that their illness is related to their behaviour and that to a large extent their future actions will therefore determine the course of that illness, yet, may feel that their future drinking behaviour is substantially uncontrollable and thus feel helpless. Wallston (1997) equates feeling helpless with feeling incompetent, non-self-efficacious, and to having a 'chance' locus of control orientation. Wallston further asserts that people who feel helpless either do not engage in 'positive' health behaviours or abandon those behaviours before they can have a positive effect on their health status. It would therefore seem that believing drinking behaviour is beyond personal control would have significant motivational, emotional and behavioural consequences.
4.2.3 HEALTH VALUE

The value individuals placed on their health was not significantly related to their readiness to change their drinking behaviour. Literature examining the role of 'health value' in motivating health-related behaviour is limited. Where it has been discussed, it has generally been suggested that health value should be viewed as a moderator of the relationship between other health beliefs and performance of behaviour (Norman & Bennett, 1996). For example, Wallston & Wallston (1981) viewed 'health value' as a pre-requisite to behaviour change in that health locus of control beliefs should only predict health-behaviour when people also value their health. Lau et al. (1986) commented that researchers have frequently assumed that all people uniformly place high value on their health and so have not measured this. In the current study the majority valued their health highly and exploratory analysis indicated that the data were considerably skewed towards higher scores, making it difficult to make meaningful comparisons between 'readiness to change' groups. Failure to demonstrate a significant effect may therefore be due to a ceiling effect. A more sensitive measure may have shown greater variation between groups in terms of 'health value'.

As discussed (section 4.2.1), it may be that high value placed on health failed to relate to greater motivation because individuals did not believe that changing their drinking would lead to health improvements. Other behaviour-specific beliefs such as outcome-expectancies may play a major role here too. A drinker may value and desire good health, but be unconvinced that drinking is causal in their illness or that stopping will do any good. Alternatively, individuals may value their health, and perceive that change would be beneficial, but due to their degree of perceived dependency, feel that they do not have control or are incapable of change. A significant effect would perhaps be apparent if people did not value their health and it seems important to control for the possibility that the individual does not value good health.

Given the issue of perceived dependency and the above discussion of alcohol-expectancies, it may be interesting to consider the extent to which an individual values health relative to
drinking, being sociable, feeling confident and so on. An alternative method of measurement is to rank health in order of importance with a series of other personal values, yielding information about the relative-value of health. Although people may value their health, this may be over-ridden by their ‘addiction’ to alcohol. The extent to which the person values themselves and considers themselves to be deserving of good health may also have some effect (see section 4.4.2).

4.2.4 BEHAVIOURAL SELF-BLAME

Causal Attributions and Readiness to Change

Causal attributions were not found to be associated with readiness to change. Though the majority of participants made causal attributions to their drinking, this was not predictive of the ‘action’ stage of change. In the current sample, there was a much higher rate of awareness of the role of alcohol in their medical condition (66.7%) than that reported by Heather et al. (1996), who found that only 18% believed their condition to be drinking-related. Possible explanations for this are two-fold.

The first relates to the nature of the sample. Heather et al. (1996) screened for heavy drinkers from wards representing a wide range of specialities, including orthopaedic, surgical, gastrointestinal, cardiac and medical wards. As such, a number of these in-patients may have been in hospital for conditions not directly related to their drinking and the link between their condition and their drinking was not separately verified with physicians. It would therefore be reasonable to expect that fewer patients would report a causal link, as this may be less readily apparent. In contrast, the present study involved people specifically identified with an alcohol-related illness and participants were likely to have been given more information about the causal link between their illness and their drinking.

A second possible explanation of high alcohol awareness relates to the instruction given to participants at the time of recruitment. Participants were informed that the study was interested in ‘health-related behaviour’ and, in particular, the impact of illness on drinking.
habits. Clearly, this would sensitize participants to thinking about the link between alcohol and illness. The wording of introductory information leaflets was influenced by the requirements of the local ethics committee, who felt that participants should be informed, prior to giving consent, that the study was concerned with alcohol. Given that this was the case, it was surprising that around a quarter reported being unsure that their drinking was causal and 9.1% believed that it was not related to their illness.

A number of factors may explain why causal attributions were not found to predict readiness to change. For example, it may be that individuals gave what they felt were desired responses, whilst personally believing something else. Responses may have reflected what doctors told them, rather than their own thoughts as it may have felt difficult to report personal beliefs in opposition to medical or cultural views. Very often, people had been warned by their doctors that continued drinking was likely to be fatal. Given messages of this kind, it would seem difficult for someone to deny that their drinking was a problem to a researcher interested in alcohol. This makes it all the more surprising and interesting that as many as one third of participants did not report alcohol as a major causal factor. Individual’s causal beliefs may therefore be an important part of a clinician’s assessment, prior to embarking on a treatment programme.

**Denial and Cognitive Dissonance**

A considerable number of participants reported their doctors’ view of the cause, but were unsure about whether they believed this to be the case. Leventhal (1983) documented that patients developed one representation of an illness appropriate for public display and another for private use, checking out and rejecting the physician’s statements and developing their own representation of illness. Reluctance to acknowledge drinking as causal may be a function of denial, as acknowledgement would imply that drinking is a significant problem and that something needs to be done about it. In speculating about what may be happening for these patients, it is interesting to consider the concept of dissonance.
Festinger (1957) suggested that people who simultaneously hold inconsistent cognitions are in 'dissonance'. This is an unpleasant, drive-like state aroused through cognitive events, which motivates people to alter their cognitions to reduce the dissonance experience (Draycott & Dabbs, 1998a). Miller (1983) claims that the motivational interviewing technique is underpinned by cognitive dissonance, self-efficacy and attributions of causal control. Motivational interviewing is designed to arouse a dissonant state and then to channel the behaviours arising from it so that they take a therapeutic form (Draycott & Dabbs, 1998b). Thus, if a person perceives their behaviour to be seriously discrepant with their beliefs, attitudes or feelings, a motivational condition is created to bring about change in one or another of these elements so that consistency is restored.

One way in which consistency can be restored is through 'denial'. This involves alteration of the person's beliefs and attitudes so that they are no longer inconsistent with their behaviour (Miller, 1983). In this case, denial of the severity of illness or the role of alcohol allows the individual to maintain drinking behaviour that may otherwise be incongruous. Another possible resolution is to alter self-esteem: a person may continue to drink heavily and recognise that it is suicidal if they also have very low self-regard (see section 4.4.3). Low self-efficacy provides still another alternative for dissonance resolution, since damaging drinking is understandable even in a self-respecting person if it is beyond his or her control. Finally, dissonance can be reduced by altering the drinking behaviour itself so that it is consistent with positive self-concept and no longer causes problems or damage (Miller, 1983). Alteration in behaviour may involve total abstinence, or may be a reduction in drinking to a non-problem level.

**Culpability versus Responsibility**

The failure of behavioural self-blame to predict readiness to change may be explained by considering recent debate about the distinction between culpability and responsibility for illness. A number of participants, when asked about the causes of their illness, also gave explanations for their drinking. Reasons for drinking tended to be external, environmental factors such as social isolation, financial worries or family discord. Others indicated their
belief that they had a genetically inherited ‘disease’. It seemed that, whilst the majority acknowledged that their illness was the result of their ‘bad habit’, they did not necessarily consider that they were responsible for that habit. Brewin and Antaki (1987) suggested that there are two dimensions of self-blame: causal responsibility and culpability. They argued that a person feels causally responsible if he or she has acted in such a way as to produce the outcome (illness). Culpability on the other hand, is a moral evaluation referring to the extent to which the person is deserving of blame for that outcome.

In line with evidence for the desirability of perceived control, Brewin and Antaki (1987) argued that a sense of causal responsibility is likely to be adaptive, since belief in an orderly relationship between your actions and outcomes allows preservation of a belief in your ability to exercise control over your life. Perceived culpability on the other hand, is likely to be maladaptive, since a person may then perceive themselves as causing unnecessary misfortune, thereby decreasing their belief in their own effectiveness. In a study of attributions for industrial accidents, they found that belief in one’s own causal responsibility was associated with less disturbed mood and therefore appeared to be adaptive. Culpability also appeared to be adaptive, being associated with a faster recovery rate. They further hypothesised that feeling culpable, as opposed to merely causally responsible, arouses a need to make restitution, whether to oneself or to other people one has let down. In the current sample, people may or may not accept that their drinking has caused them to be ill and those who do accept this link may not necessarily feel responsible for the fact that they drink. This too may be a function of an individual’s belief in their ‘alcoholism’ and that their addiction is not something they can be held responsible for.

**Behavioural Self-blame and Perceived Control**

Causal attributions were not found to be related to perceived control over illness, despite the literature suggesting links between causal and control beliefs (Benyamini et al., 1997; Witenberg et al., 1983). Control beliefs have been considered by some investigators to directly result from causal attributions (Furnham & Steele, 1993) and this may well be the case, with expectancies about future events being dependent on the causes of past events.
However, it seems likely that the degree of perceived dependency complicates the relationship. Previous studies indicate that ‘internal’ or self-blaming causal attributions are related to greater sense of responsibility for health (Brewin, 1984; Tennen et al., 1984). As discussed in relation to perceived control (see section 4.2.2), whereas in other conditions an ‘internal’ cause may be functional in that it allows the individual to feel that they have greater control, drinkers may not feel that the cause (drinking) is controllable.

Another dimension of causality that may be important in alcohol-related illness is ‘stability’. Participants were asked about the controllability of their illness and the locus of causality, but not the extent to which they believed the cause of their illness to be stable or unstable. The stability of a cause has been reported as an important contributor to positive adaptation (Benyamini et al., 1997). The individual who believes that a cause (drinking) can be readily avoided in the future (unstable) may be more likely to consider change. On the other hand, the individual who sees their drinking as unlikely to change (stable) may have a greater sense of helplessness. As discussed in relation to perceived control, the extent of stability and controllability attributed to alcohol as a cause may be a function of the degree of perceived dependency or addiction to alcohol. Perceived dependency is likely to play an important role in that, with greater ‘addiction’, the cause may be seen as more stable and less controllable. Attribution to a stable, uncontrollable cause may make people feel less inclined to make attempts at change.

4.2.5 ALCOHOL DEPENDENCY

Findings suggest that the degree of perceived dependence on alcohol predicts readiness to change. Without the availability of prospective data, the issue as to the direction of this relationship cannot be addressed and influences in either direction would seem plausible. High perceived dependence could prevent someone from proceeding to the ‘action’ or ‘maintenance’ stages. Alternatively, someone who has not begun to attempt to change their drinking may well regard themselves as highly dependent on alcohol. Perceived dependence was found to be significantly related to both abstinence self-efficacy and perceived
controllability of illness in the present study. Suggestions have been made earlier in this
discussion as to how these factors may interact and a possible mechanism by which
dependency may influence motivation. It is interesting to look at how the current findings
concur with other studies that have considered the issue of dependency.

Some investigators have considered the role of nicotine dependency in beliefs about control.
O'Leary (1985) reported that low self-efficacy to abstain was a better predictor of relapse
than the amount of physiological dependence on nicotine, coping history, motivation to
quit, confidence in treatment rationale and expectancies concerning the rewards of smoking.
DiClemente et al. (1985) reported that strength of habit (number of cigarettes smoked),
number of years since last quitting attempt, duration of last attempt and problems quitting
all related to efficacy judgements. In relation to alcohol, Langenbucher, Sulesund, Chung,
and Morgenstern (1996) proposed that the ‘severity of illness’ is an important moderator of
relapse behaviour. They reported that scores on an alcohol dependence scale, stressing signs
and symptoms of physiological dependence, predicted relapse indicators. They found
negative and significant relationships between measures of physiological dependence and
the Situational Confidence Questionnaire (Annis & Graham, 1990), indicating that the most
severely dependent or ‘addicted’ subjects were those with the least confidence that they
would be able to abstain from drinking under a variety of high-risk situations. Although
Langenbucher et al. (1996) emphasised physiological dependence rather than psychological
aspects, their findings support the role of ‘dependency’ as a predictor of change.

**Dependency and ‘Habit’**

Sutton (1994) argued that the best predictor of future behaviour is often an earlier measure
of the same behaviour, which should be treated like any other external variable. ‘Habit’ was
defined by Sutton as the number of times the behaviour has previously been performed by
the person, regardless of the number of times it has been reinforced. There is increasing
evidence that past behaviour may have independent effects on current intentions (Sutton,
1994). When a behaviour is over-learned and has occurred many times, it is very likely to
have become ‘automatic’. Ronis, Yates, and Kirscht (1989) argued that repeated behaviours
may be largely determined by habits rather than by reasoned influences. The emphasis of social cognition models on explanations in terms of attitudes and beliefs has led to the omission of the role of over-learning. If drinking behaviour is considered to be a habit, or an over-learned behaviour, it may not be subject to the same reasoned influences as other non-habitual behaviours.

**Dependency and Coping Skills**

The conceptualisation of 'psychological dependency' as a perceived lack of control over substance-use has been discussed. Another way of thinking about dependency is consideration of the function of alcohol for the user. According to a Social Learning Theory perspective, individuals who use alcohol have learned to do so because they lack other, more adaptive ways of coping. Also, in the short-term at least, alcohol is effective in alleviating negative feelings and is therefore positively reinforcing. People who exhibit problematic patterns of drinking are thought to differ from non-problematic drinkers in their ability to cope with the demands of everyday life and in their beliefs about alcohol (Abrams & Niaura, 1987) such that deficiencies in adaptive coping skills and positive expectancies about alcohol's effects operate to promote the use of drinking as a coping mechanism.

Edwards et al. (1997) argued that dependence implies an altered relationship between a person and their drinking in which dependency itself becomes a self-perpetuating behaviour. Stuart (1995) proposed that dependency could be perceived as a continuum in which there was increasing degree of severity of problem drinking. She outlined a psychological progression in which the use of alcohol becomes more and more central to the person's lifestyle. In the early stages, drinking may be to relax or to relieve social anxiety and this may not necessarily be problematic. As dependency progresses, the person's world gets smaller, and friends and interpersonal relationships are limited to others who use alcohol. The internal world also constricts and the capacity to handle unwanted feelings and anxieties diminishes so that alcohol is needed to cope. People may then drink to disquiet feelings of inadequacy or low self-esteem and this may perpetuate the problem.
Reliance on alcohol to cope may contribute to further deterioration in adaptive coping and to increased psychological dependence on alcohol to meet these needs (Cooper et al., 1995). ‘Psychological dependence’ could therefore be conceptualised as the extent to which alcohol is relied upon to moderate mood. In the first instance, alcohol may be an easily available and effective way of coping with negative emotions, and because it works in the short-term may in itself lead to a narrowing of the repertoire of coping responses. This has implications for those in the current sample, who are faced with significant and potentially life-threatening illness which seems likely to be associated with unpleasant emotions such as dysphoria and anxiety. Their usual coping mechanism for negative mood states is likely to have been alcohol and this may increase the likelihood that they want to drink. In turn, this may increase their feeling of dependency on alcohol as they are at a loss to know how else to take the bad feelings away.

4.2.6. Revised Model of Predictors of ‘Readiness to Change’

The current research study set out to develop and test a model intended to be prognostic of ‘readiness to change’ drinking behaviour, integrating health-related and drinking-related variables hypothesised to be predictive of stage of change. At this point, it seems helpful to offer a revision of the model originally proposed, in the light of the study’s findings. The introductory literature review led to the prediction of a number of inter-relationships which were illustrated in diagrammatic form (see section 1.9). Of those relationships, links between alcohol dependency and ‘readiness to change’, and between abstinence self-efficacy and ‘readiness to change’ were supported. There was tentative support in the current findings for a link between abstinence self-efficacy and ‘personal control’. Further analysis indicated relationships between perceived control, abstinence self-efficacy and alcohol dependency. It has further been speculated that outcome-expectancies are important predictors of readiness to change drinking behaviour. A revised diagrammatic representation of these relationships is shown in Figure 12.
Figure 12. Revised diagrammatic representation of relationships between variables and readiness to change

ALCOHOL DEPENDENCY
LOW DEPENDENCY

CONTROL BELIEFS
HIGH PERCEIVED CONTROL OVER ILLNESS

READINESS TO CHANGE
'ACTION' STAGE OF CHANGE

ABSTINENCE SELF-EFFICACY
HIGH SELF-EFFICACY

PERSONAL CONTROL OVER ILLNESS

POSITIVE OUTCOME-EXPECTANCY FOR HEALTH / ILLNESS

- Indicates relationships supported in the current study
- Indicates suggested relationships
4.3 CLINICAL IMPLICATIONS

It has been suggested that high perceived 'psychological dependency' may relate to greater ambivalence and less willingness to attempt change because of perceived negative consequences, for example, loss of a valued coping mechanism. The current findings suggested that greater psychological dependency is related to lower levels of confidence in abstinence. It has also been speculated that the degree of perceived 'psychological dependency' is related to the extent to which individuals feel they can control their drinking and may be equated to 'addiction'. So what does this imply for the treatment of this group of physically damaged drinkers? There are a number of clinical implications, which are now discussed.

4.3.1 Ambivalence About Change

Given the problem of ambivalence about change, it is important to establish a treatment goal that is acceptable to the individual concerned. For drinkers that perceive themselves to be highly psychologically dependent on alcohol, total abstinence is likely to seem a daunting task and they may therefore not make attempts at achieving this outcome. It may be more productive to negotiate acceptable outcome expectations at the onset of treatment. Controlled drinking as the goal of treatment is obviously one possibility (Rollnick & Heather, 1982). A more manageable treatment goal of this kind might lead to less resistance and apparent lack of motivation.

There is a growing body of literature concerned with reducing the harmful consequences of addictive behaviour, with targets for reduced consumption rather than demanding abstinence per se. 'Harm reduction' recognises abstinence as an ideal outcome, but accepts alternatives that reduce harm in the interim and is becoming a major approach to addictive behaviour (Marlatt, 1996). Abstinence is included as an ideal end-point, but with a gradual step-down approach that encourages individuals with high-risk behaviour to reduce the harmful consequences of their behaviour. Any movement towards decreased harm is seen as a step in the right direction. Harm reduction also does not remove a person's primary
coping mechanisms until others are in place. This may be more controversial when the drinker has a serious illness, where maintained abstinence is necessary in order to avoid deteriorating health. However, agreeing on a reduction in heavy drinking as a short-term goal may be more effective in enabling people to gain a sense of mastery over their drinking behaviour and thus feel more self-efficacious about stopping altogether. This may do more for their self-esteem and self-confidence than failing to achieve a goal of abstinence.

What seems critical is that the therapist develops a good therapeutic alliance with the client and is sensitive to variations in their motivational state. As referred to previously, it seems feasible that the person themselves may perceive that their drinking is an illness. It seems that the public remains exposed to the notion of an 'alcoholism' disease in popular accounts of drinking problems. The media and television tend to promote this idea and it remains a dominant viewpoint in the United States. The therapist needs to be aware that the client may think of themselves as a helpless victim of 'alcoholism', and this may have a strong influence on any attempts at change and their belief that treatment could be effective.

4.3.2 'Teachable Moment' Hypothesis
An important aspect of treatment is the resolution of ambivalence, through tipping of the motivational balance, removing barriers and disincentives for change and enhancing the number or salience of advantages of change (Miller, 1998). Motivational interviewing concentrates on the issue of ambivalence and involves two tasks. First, to increase the amount of cognitive dissonance experienced through posing questions that bring the individual to argue against their own behaviour. Second, to direct the dissonance so that the result is changed behaviour rather than modified beliefs (denial), a lowering of self-esteem, or a drop in self-efficacy (Miller, 1983). The therapist needs to carefully channel the dissonance into alteration of the drinking behaviour as the means through which consistency is restored.

There has been a suggestion that the diagnosis of alcohol-related illness, or occurrence of an alcohol-related injury, provides a 'window of opportunity' in which to shift people's
thinking. It has been hypothesised that at these times there is a “teachable moment” in which drinkers are most susceptible to ideas about changing (Longabaugh et al., 1995). Diagnosis of an alcohol-related illness could be an event that in itself arouses dissonance, as the individual is faced with evidence that their own behaviour is causing them physical damage. If appropriate help and guidance is not available at this point, a valuable opportunity may be missed to channel this dissonant state successfully into constructive behaviour change. Therefore, specialist interventions should perhaps be available and accessed from in-patient wards.

Confrontation by a physician, extreme messages of threat, de-personalising treatment and lack of control may all serve to ensure that the dissonant state remains or is channelled into denial, lowered self-efficacy or low self-regard. It is important to ensure that problem drinkers are assessed early and helped to find positive ways of dealing with their dissonance, by increasing their self-efficacy and self-confidence. If the individual has very little self-regard, then self-destructive behaviour would be of little consequence. Likewise, if the individual is ‘diseased with alcoholism’, then the presence of self-destructive drinking is understandable because it could not wilfully be controlled (Miller, 1983). It would therefore seem important to de-emphasise de-personalising labels, express overt as well as implicit respect for the individual and emphasise their personal efficacy and choice. Bandura (1997) asserted that, whilst people need enough knowledge of potential dangers to warrant action, they do not have to be ‘scared out of their wits’. What people need is knowledge about how to regulate their behaviour and a firm belief in their personal efficacy to turn concerns into effective preventive actions.

Heather et al. (1996) have shown that the stages of change classification can be used to match heavy drinkers to treatment type, with ‘precontemplators’ and ‘contemplators’ showing greater reduction in alcohol intake when they are assigned to motivational interviewing, than when they are assigned to a skills-based intervention. Rollnick et al. (1992) found that, among patients assessed as ‘less ready to change’, brief motivational interviewing was more effective than skills-based counselling. Among patients deemed ‘ready to take action’ to cut down drinking, there
were no significant differences between the two types of intervention. Again, what seems to be critical is that the clinician is sensitive to fluctuations in the motivational state of their client and is able to match the intensity and type of intervention accordingly.

4.3.3 Enhancement of Perceived Control

There are clear implications from the current findings about the importance of a sense of control over drinking in potentially reducing perceived dependence on alcohol and increasing the likelihood of taking action to change. Perceived ‘psychological dependence’ was shown to be related to both self-efficacy and perceived control over illness, which suggested that maximising feelings of confidence and control over drinking may help people to feel less dependent on alcohol. Treatments need to be applied in ways that instil and strengthen peoples’ beliefs both in their own abilities to effect positive changes in their health (O’Leary, 1985). The way in which successes as well as failures are perceived seems important. If change is perceived as occurring because of accident, chance, something the therapist did, medication, or some other factor external to the individual, then the person is likely to feel less responsibility for it and consequently the change may not be maintained (Miller, 1983). In motivating people, it may help to focus their attention on the times in the past when they have been successful, for however long, in achieving abstinence or even a reduction in drinking, and to re-frame these experiences in a positive way, rather than focusing on their present failure.

It is important for therapists to consider ways in which they may inadvertently undermine an individual’s control, for example, by being too prescriptive about what they should do about their drinking and how they should do it. Strong fear appeals may serve to make the person feel overwhelmed and helpless and so unlikely to contemplate change. Considerable research evidence has been generated to suggest that denial and other forms of defensiveness are common initial reactions to health threats, for example through heightened scepticism regarding the validity of the diagnosis or minimisation of the seriousness of the health threat (Croyle & Sande, 1988). Thus, health threat communications may lose persuasiveness because they inadvertently create the expectation
that the threat is beyond personal control. As Bandura (1997) argued, to be most effective, health communications should be framed in ways that instil in people the belief that they have the capability to alter their health habits and guide them in how to do it.

If 'psychological dependency' is related to use of alcohol as a coping mechanism (see section 4.2.1), then it also seems important to give guidance to individuals in alternative coping methods. Teaching appropriate coping skills for stressful situations may mean there are fewer negative consequences to not drinking, as the individual feels more confident in their ability to cope without alcohol. It would seem essential that individuals are equipped with the skills to handle a new alcohol-free life. Kanfer (1986) pointed out that, for many clients, this means learning not only new behaviours, but also a new lifestyle. It is recognised that the contexts and consequences of alcohol use vary from person to person.

In carrying out this research it was striking to observe the range of contexts in which drinking was reported to occur. There was great diversity in the reasons for people's drinking, their ideas about change and the circumstances that made change difficult. Consequently, for each person, treatment would seem to necessitate consideration of the specific factors that resulted in their drinking, including the functions served by their drinking.

4.3.4 Early Intervention

It may be that, given the apparent strong influence of psychological dependency on readiness to change, early intervention is crucial, to help people think about their drinking habits before they become highly dependent on alcohol. It may be that intervening earlier and teaching alternative coping skills, for example, would be effective. Different levels of intervention could perhaps be offered to people identified at different levels of dependence. Primary care has been proposed as a major setting for the early identification and treatment of alcohol problems because of its accessibility and established credibility that can enhance the effectiveness of advice given. It also has the advantage of avoiding potential stigma and labelling of which individuals may be wary in specialist alcohol services (Wallace & Jarman, 1994). Earlier detection is recommended on the grounds that intervention early in the
person's alcohol involvement may have a greater chance of success. Berg & Skuttle (1986) reported that an approach emphasising individual responsibility, informational feedback creating cognitive dissonance, de-emphasis on labelling, and internal attribution of positive behaviour change was helpful in work with early-stage problem drinkers. They considered that this approach may be particularly helpful for clients in the 'contemplation' stage of change, as a way of encouraging them toward 'action'.

4.3.5 Severity of Dependency Scale
Heather (1995) pointed out the lack of good information on the severity of drinking problems above which brief intervention becomes ineffective and more intensive intervention necessary, if such a level exists at all. The current study found that scores on the Severity of Dependence Scale were predictive of 'stage of change' group membership, suggesting that the scale could be meaningfully used to divide treatment populations into those who are 'ready for action' and those who are 'not ready for action'. Given that Heather et al. (1996) have shown that the stages of change classification can be used to match heavy drinkers to treatment-type (see section 4.3.2), there may be potential for using the SDS as a clinical tool to guide decisions about who might benefit most from brief motivational interviewing. In considering this possibility, the distribution of SDS scores was examined with a view to identifying rough cut-off scores for distinguishing patients in the Precontemplation, Contemplation and Action stages (see Appendix E). An approximate cut-off score of 10 was suggested, scores above which indicate classification as 'not ready for action' and scores below which indicate classification as 'ready for action'. These obviously need to be tested and validated in further clinical trials.

4.4 THEORETICAL IMPLICATIONS

The current research highlights two points for discussion. Firstly, apparent weaknesses of the Stage of Change model and its classification of distinct stages of Precontemplation, Contemplation and Action. Secondly, limitations of Social Cognition models in describing and accounting for health-related behaviour in the case of addictive behaviour.
4.4.1 Stages of Change Model

The Readiness to Change questionnaire asks the participant to respond according to how they feel about their drinking "right now", rather than how they generally feel or how they have felt over the past week or month. The questionnaire therefore provides a snapshot of the person's motivational state at one particular point in time. It was apparent whilst carrying out these assessments, that some participants were endorsing items indicating that they were taking action, whilst it was also apparent that they were continuing to drink. It seemed to be a reasonably common occurrence that, when interviewed in the morning, the participant would report that they had indeed stopped drinking and that they were taking action to change. However, by later in the same day, their resolve may have weakened and they may have returned to contemplating, or even precontemplating change. Thus, results may have been different depending on the time of day in which interviews were carried out and the frame of mind of the interviewee at the time. Sutton (1996) challenged the assumption that change involves movement through a sequence of stages and argued that the Stage of Change model imposes artificial categorisation and ordering on what may actually be an underlying continuous process. Whilst categorisation may serve a useful purpose, it does not account for fluctuations over time within individuals. In comparison, other decision-making models that employ a continuous measure of intention to quit make no assumptions that the change involves crossing a sequence of thresholds (Sutton, 1996).

It was found in the current study, that people often scored equally on two and often all three stages measured by the Readiness to Change questionnaire. The authors of the questionnaire suggested that in this circumstance, the highest stage of change should be taken. However, it does call in to question whether these stages are distinct or linear, or whether they are on a more flexible continuum, as it appears that people can be in two different stages at once, or move back and forth. Sutton (1996) drew attention to problems with the data reported by Prochaska & DiClemente (1986; 1992) and that the correlation between non-adjacent stages was almost as large as between adjacent stages. The data indicated that it was possible, indeed common, for someone to have an above-average score on two or more 'stages' simultaneously.
It was also apparent that the Stages of Change model added little to the question of why people change or when this change may occur. It seems entirely possible that a person could permanently contemplate change and never take action. The concept of ‘stage’ implies ordering or sequence: someone at a given stage is assumed to have come from the preceding stage in the sequence and to be on the way to the next stage. Several studies have assessed subjects on two or more occasions enabling movement between stages to be examined. Prochaska, Velicer, Guadagnoli, Rossi, and DiClemente (1991) reported data on a sample of self-changers, who provided information about stage of change every six months for two years. Only 16% of subjects showed a stable progression through one stage to the next in the sequence without suffering any reverses. There were apparently no subjects showing a stable progression through three or more stages (two was the maximum). Twelve percent moved backward one or two stages. Thirty-six percent showed a ‘flat’ profile, that is they stayed in the same stage across five waves of measurement. The study did not attempt to find out what went on between follow-ups, only the subjects’ current stage of change was recorded. Their findings clearly show that progressive movement through the stages was far from being the typical pattern of change.

Sutton (1996) suggested that it may be more useful to think in terms of ‘states’ of change rather than stages. He proposed that motivation or intention to change may be more realistically thought of as a continuum with no necessary assumption that people move along this continuum in one direction or through a sequence of discrete stages. The stage of change model may best be considered as a prescriptive model of change. It prescribes how, from the viewpoint of a therapist or health educator, people should change, and suggests how they might be encouraged or helped to change.

4.4.2 Self-schema Model

Social Cognition models have been criticised on the grounds that they may lead to the neglect of variables, both cognitive and non-cognitive, that are potentially important in understanding a particular health-related behaviour or outcome. This is because they over-emphasise cognitive variables while many health-related behaviours and outcomes may be
explained by a stronger influence from other types of variables. For example, emotional reactions and interactions with other people are likely to be involved (Conner & Norman, 1996). Again, drawing on literature from health psychology and applying it to dependencies seems to be helpful at this point. Williams (1997) discussed the influence of self-schema on responses to health threats and elaborated on the self-regulation theory proposed by Leventhal and his colleagues (1980; 1982). His ideas are helpful in understanding what may be going on for individuals with alcohol-related illness.

Williams (1997) argued that the whole concept of health-related behaviour is set within a social context and that beliefs about self and others may influence behaviour. He suggested that the Self-regulation theory is limited in its clinical applicability due to the peripheral role accorded to beliefs other than about the illness. Beliefs about the self could be expected to interact with the perceived cause, consequences and controllability of the illness representation and more recently, interest has begun to focus on the interaction of these beliefs. Elements of controllability and consequences of illness representations may be particularly likely to be influenced by such beliefs. For example, in an individual who already holds the belief “I am unlucky” or “I am powerless”, the controllability element of their illness representation may be influenced. Leventhal & Cameron (1987) drew attention to this issue and stated that “the individual’s characteristic way of representing the self both colours, and is coloured by, the representations, coping and appraisals of specific illness episodes”. In a similar way, self-efficacy judgements may be influenced by an individual’s more general cognitive style. For example, a person who tends to think in black and white terms is likely to apply the same thinking style to judgements of their own efficacy.

Williams (1997) proposed a therapeutic model for a cognitively-based adaptation of Self-Regulation theory. The ‘self-schema’ was given a central role, interacting with illness representations. The term self-schema was used to identify those relatively enduring and consistent beliefs about how people see themselves, their relationships with others and the world they live in. These beliefs may be adaptive and helpful, or unhelpful. They may include themes such as personal failure, vulnerability, competency, worthlessness and
dependency concerning the individual themselves, the trustworthiness or dependability of others, and the dangerousness of the world. It is the interaction of these beliefs that affect the overall appraisal of what the illness means to the individual.

William's (1997) model predicted that those who do not change their drinking in response to illness would either have an understanding about illness that obviated the need for change (for example, it is not serious, it will get better anyway) and/or would hold beliefs about themselves or others that prevented them from changing. For example, they may hold a high number of negative and dysfunctional self-beliefs that they are bad, a failure, or do not deserve help. Thus, in drawing on concepts such as dysfunctional thinking styles from Beck’s well-established cognitive model (Beck, 1987), Williams encouraged a convergence between Self-Regulation theory and Cognitive-Behavioural models. This model seems to have considerable intuitive appeal and to fit with the experience gained in carrying out this study. Many of those individuals who took part, particularly those who were not in contact with helping agencies, did indeed hold a large number of such negative self-beliefs, perhaps exacerbated by repeated admission to hospital and failure to maintain abstinence. It may be that they were treated differently and with some impatience by medical and nursing staff who saw them return to the wards time and time again. The implication is that interventions may be usefully focused on addressing negative self-beliefs and enhancing opportunities for building self-esteem and mastery (as referred to in section 4.3.3).

### 4.5 EVALUATION OF METHODOLOGY

#### 4.5.1 Attrition Rate

The high attrition rate for the study needs to be considered due to the possibility of bias within the sample. The attrition rate was around 50%, for reasons specified in the methodology (section 2.2). This leaves open the possibility that those not included differed in some systematic way from those who took part. There was no demographic information or health-related information collected about those who refused or dropped out, which means that this possibility cannot be excluded. The reasons for this lack of information are
two-fold. Firstly, ethical approval for the study required that people gave their written consent to take part before the researcher could access their medical records. It was considered inappropriate to ask people about their alcohol use, their illness or their demographic details if they were not willing to take part. Secondly, a number of potential recruits dropped out of contact with the community team or absconded from the ward and often the medical staff had been unable to ascertain details about the person prior to them leaving. Since it was not possible to collect such information about a sizeable proportion of those not included, time was not spent collating this information for the remainder, though in hindsight, this may have been helpful as a rough guide to possible differences between them.

It was anticipated at the planning stage of the research that there may have been some reluctance to discuss alcohol use, or that people may deny their drinking. Due to this, it was originally proposed that the researcher would introduce the study as concerned with general health-related behaviour, without specific reference to alcohol. Questions about alcohol use were to be embedded in a general Health Questionnaire and participants were to be told later in the assessment that their drinking was of particular interest. Unfortunately, this procedure was not approved by the ethics committee, as there was concern that this was misleading and participants would not be giving fully informed consent.

4.5.2 Social Desirability

The issue of social desirability may be particularly applicable here, given the social stigma associated with problem drinking and the likelihood of pressure from the staff to abstain. Responses may have been influenced by individuals giving what they thought was the desired response, rather than what they truly believed. Individuals were approached to participate either through their doctors or their community team key-workers. Despite emphasising confidentiality, the association between the researcher and the people responsible for their care may have led participants to be less honest in their responses. For example, people may have felt under pressure to report that they were willing and ready to change, or perhaps to over-estimate their confidence that they would not drink. Social
desirability bias may have been reduced if the study had been introduced to potential participants as concerned with general health-related behaviour, without specific reference to alcohol. It may also have been reduced if the researcher had approached people independently of the clinician responsible for their care, but these were not possible from an ethical point of view.

4.5.3 Cognitive Impairment

Several studies have demonstrated the presence of cognitive deficits in a large proportion of individuals who chronically abuse alcohol (Duffy, 1995). Besides the permanent damage observed in the small subset of alcoholics who develop Korsakoff’s syndrome or alcoholic dementia, there is a consistent pattern of cognitive impairment among individuals who abuse alcohol that may improve with extended sobriety (Fals-Stewart, Schafer, Lucente, Rustina, & Brown, 1994). Although these individuals display relatively preserved verbal reasoning and verbal learning skills, they have been shown to manifest cognitive deficits on sensitive neuropsychological measures. Impairments include decreased speed and efficiency of information processing, increased distractibility, problems with abstracting ability, problem-solving, memory and conceptual shifting (Fals-Stewart, Shanahon, & Brown, 1995). The non-verbal nature of these decrements may make it difficult to discern their presence in clinical interviews. The intact verbal abilities these clients usually possess tend to mask underlying cognitive impairment and consequently, clinicians may overestimate their abilities (Fals-Stewart et al., 1995).

It is likely that some of the participants involved in the current study were suffering these kinds of cognitive impairments, though these were not obvious and were not assessed. If this was the case, there may have been a degree of unreliability in their ability to give rational responses. Difficulties with abstract reasoning may have implications for an individual’s ability to make rational decisions about their future behaviour and the impact of their continued drinking on their health status. Attempts were made to exclude participants who may not have been able to give accurate self-report information and indeed, a number of people were excluded on this basis. Although no formal cognitive testing was done, the
clinical experience of the researcher and discussion with key-workers and medical staff working with the individuals was considered sufficient to pick up any significant cognitive deficit.

4.5.4 Controlling for Treatment History
Due to the necessity of ensuring a reasonable sample in a relatively short time, the study included people at different stages of their illness and with different treatment and drinking histories. It would have perhaps been desirable to interview patients on their first admission for an alcohol-related illness, or soon after diagnosis, when the impact of this news may have been greatest. Given the difficulties of recruitment to the study however, a decision was made not to exclude people on the basis of the time since their diagnosis, number of admissions or length of contact with the community team, but to include all those identified with relevant illness. Participants were also included with a number of different diagnoses. Information on each of these factors was collated and it was demonstrated that the two locations of recruitment did not differ in respect to them. However, previous treatment history may have an impact on drinking and illness beliefs which was not controlled for. Those who have been diagnosed for several years may differ in their beliefs about the causes of their illness or their ability to change their drinking than those recently diagnosed. The sample under consideration are likely to have had a significant drinking history, given that their drinking had been sufficiently heavy or prolonged to incur serious illness. Previous attempts at abstinence or their appraisal of reasons for relapse may have had an impact on their confidence in their ability to change, for example, and hence their decision-making.

4.5.5 Longitudinal Study
The current study was an exploratory investigation of behavioural intentions and as such, did not include a follow-up measure to examine outcomes in terms of actual behaviour change. It would have been interesting to carry out a longitudinal study, to follow-up the participants in three or six months time, but this was not possible within the available time-scale. Due to the cross-sectional data available here, it was only possible to test for associations between variables and not to demonstrate directionality. A longitudinal
prospective study would be crucial to addressing the issue of the direction of relationships between variables. For example, with the available data, it is not possible to state whether severity of dependence influenced stage of change or vice versa.

4.6 FUTURE RESEARCH

Alcohol Dependency
The issue of ‘psychological’ dependency merits further investigation, to explore potential mediators and perhaps guide interventions aimed at reducing perceived dependence. On the basis of the current findings, it has been suggested that perceived psychological dependency is a powerful predictor of intention to change and that this is, in part, associated with beliefs about control (perceived controllability of illness and abstinence self-efficacy). This has highlighted a number of interesting questions. It is important for clinicians to assess the problem drinker’s beliefs about the nature of their drinking. An individual who believes themselves to be afflicted with a disease of ‘alcoholism’ may be unlikely to view this as something over which they can gain control, or for which they should be considered responsible. There seems to be potential for further work validating the Severity of Dependence Scale for use with alcohol problems and perhaps to develop its potential as a screening tool for ‘readiness to change’. Further clarification of the relationships between perceived control over drinking, perceived alcohol dependency and readiness to change, given the clinical implications raised, would seem an appropriate area for further study.

Outcome Expectancies
The point has been made that, as well as self-efficacy judgements about ability to change drinking behaviour, readiness to change may be influenced by the outcome-expectancies that an individual has about such change. These may be both in terms of the likelihood that stopping drinking will improve health and the possible adverse effects of stopping. An area for further study would be to consider these expectancies in more detail and their association with judgements of personal self-efficacy. It may also be interesting to look at clarifying which of these beliefs are most influential at different stages in the change process.
as it has been suggested that outcome-expectancies may be more influential at earlier decision-making stages and that personal self-efficacy beliefs become paramount once a decision to take action has been reached (Schwarzer & Fuchs, 1996).

**Specificity of Control**

In the present study, the measure selected related to perceived controllability over a specific illness in the future. It has been speculated that this may have touched on beliefs about the controllability of drinking, as the means through which future illness may be controlled. What is apparent from the findings is that 'control' is multifaceted and that the measure used may have a considerable bearing on the findings. A measure of general health control beliefs may have produced quite different results. It also seems apparent that a measure assessing 'personal control', as opposed to the control of 'powerful others' may be more strongly associated with beliefs about personal self-efficacy (see section 3.3). Further research may usefully explore these possibilities and the impact of such beliefs on readiness to change. In addition, there seems to be potential for pursuing the line of investigation taken by Schneider & Busch (1998) in examining habit-specific measures of perceived control. There may be associations between these two sets of beliefs (personal control over illness and habit-specific control) that merit investigation.

**Culpability versus Responsibility**

An interesting area for further study would be to explore Brewin and Antaki’s (1994) distinction between an individual’s perception of their own culpability for an event versus their sense of personal responsibility for that event. It has been speculated that beliefs about the causes of an individual’s drinking behaviour may be important in terms of the adaptiveness of their behavioural self-blame attributions. Those who see themselves as responsible (because they drink), but not culpable (because they are not to blame for their drinking), may be less likely to make attempts at change. It would be interesting to explore individuals’ beliefs about the causes of their drinking behaviour and the extent to which they see themselves as responsible for it.
4.7 CONCLUSION

The current study has highlighted the multiple complexities of behaviour change with which the clinician is dealing. As an exploratory study in a relatively new area, it has highlighted many questions still open to further investigation. It seems that some people do stop drinking when persuaded that alcohol is posing a tangible threat to their physical health and this study has indicated factors that may be important in distinguishing those who will make changes and those who will not. The extent to which an individual perceives him or herself to be psychologically dependent on alcohol has been shown to be a significant predictor of readiness to change. The individual's confidence in their ability to change their drinking behaviour was also found to be significantly related to being 'ready to change'. There is some indication that 'psychological dependency' is linked to beliefs about personal self-efficacy and perceived controllability of illness. It has been speculated that some problem drinkers continue to hold the belief that they have a disease of 'alcoholism' over which they cannot gain control. There is a need for clinicians to assess clients' beliefs about the nature of their drinking problems and their outcome-expectancies before embarking on a treatment programme.

The diagnosis of an alcohol-related illness may play a significant role in leading individuals to change their drinking. Diagnosis may provide a 'window of opportunity' in which, with appropriate support and guidance, to enhance the individual's motivation to change. Health messages that arouse too much fear run the risk of creating avoidance and unnerving people perhaps already beset with self-doubts about their ability to control their drinking. Too much fear without a sense of control may lead the person to dismiss what they are being told because the implications are too frightening, or they may decide that all is lost and that they may as well drink themselves to death. People need knowledge about how to regulate their behaviour and firm belief in their personal efficacy to take effective action and personal control over outcomes. Early detection and intervention with problem drinkers may offer the greatest chance of success. Interventions should be tailored to individual needs and take
5. REFERENCES


Axelrad, K. J. (1982) Locus of control and causal attributions as they relate to expectations for coping with a heart attack. *Dissertation Abstracts International, 42*, 4924-B.


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APPENDIX A

PARTICIPANT CONSENT FORM

INFORMATION SHEET FOR PARTICIPANTS - COMMUNITY

INFORMATION SHEET FOR PARTICIPANTS - HOSPITAL

STAFF INFORMATION SHEET - COMMUNITY

STAFF INFORMATION SHEET - HOSPITAL

LETTER OF INVITATION TO PARTICIPATE - COMMUNITY

LETTER OF INVITATION TO PARTICIPATE - HOSPITAL
PARTICIPANT CONSENT FORM

IMPACT OF ILLNESS ON HEALTH-RELATED BEHAVIOUR

Principle Investigator: Liz Revell (Clinical Psychologist in training)
Department of Medical Psychology
Hadley House, LGH

This form should be read in conjunction with the Patient Information Leaflet

I agree to take part in the above study as described in the Information Sheet.

I understand that I may withdraw from the study at any time without justifying my decision and without affecting my current treatment or treatment in the future.

I understand that all the information will be treated as confidential.

I understand medical research is covered for mishaps in the same way as for patients undergoing treatment in the NHS i.e. compensation is only available if negligence occurs.

I have read the patient information leaflet on the above study and have had the opportunity to discuss the details and ask any questions. The nature and the purpose of the study to be undertaken have been explained to me and I understand what will be required if I take part in the study.

Signature of participant: ...............................................................
Date: ........................................

(Name in BLOCK LETTERS) ....................................................................................................

I confirm I have explained the nature of the Trial, as detailed in the Information Sheet, in terms which in my judgement are suited to the understanding of the participant.

Signature of Investigator: ............................................................
Date: ................................................................

(Name in BLOCK LETTERS) ....................................................................................................
IMPACT OF ILLNESS ON HEALTH-RELATED BEHAVIOUR

INFORMATION LEAFLET

We are currently undertaking a research project looking at the effect that illness has on peoples health-related behaviour. The study is part of the requirements of the Doctorate in Clinical Psychology at Leicester University.

'Health-related behaviour' refers to behaviours that either improve health (such as regular exercise and a healthy diet) or behaviours that can be damaging to health (such as smoking and drinking). We are particularly interested in the effect that physical illness may have had on your thoughts about changing your drinking habits. We are hoping to be able to talk to a number of people who are being seen by members of the Community Alcohol Team.

Taking part in the study will involve one meeting with a researcher (trainee clinical psychologist) and this will take about 45-60 minutes. You will be asked to complete five brief questionnaires relating to your thoughts about your health and your drinking habits. The researcher will be present to help you complete these and answer any questions. There will also be a few general interview questions related to these areas.

If you do not wish to participate in this study or if you wish to stop at any time, you may do so without justifying your decision. Your future treatment will not be affected in any way.

- All the information that you give whilst taking part in this study will be treated in confidence and your answers will be anonymous.
- Your choice to take part (or not to) will not effect your treatment, now or in the future
- The information will be used for research purposes only
- You can decide to stop at any point during the questionnaires or interview

If you have any queries about the research we can be contacted in the Department of Medical Psychology
IMPACT OF ILLNESS ON HEALTH-RELATED BEHAVIOUR

INFORMATION LEAFLET

We are currently undertaking a research project looking at the effect that illness has on people's health-related behaviour. The study is part of the requirements of the Doctorate in Clinical Psychology at Leicester University.

'Health-related behaviour' refers to behaviours that either improve health (such as regular exercise and a healthy diet) or behaviours that can be damaging to health (such as smoking and drinking). We are particularly interested in the effect that your admission to hospital may have had on your thoughts about changing your drinking habits. We are hoping to be able to talk to a number of patients whilst they are in hospital.

Taking part in the study will involve one meeting with a researcher (trainee clinical psychologist) and this will take about 45-60 minutes. You will be asked to complete five brief questionnaires relating to your thoughts about your health and your drinking habits. A researcher will be present to help you complete these and answer any questions. There will also be a few general interview questions related to these areas.

If you do not wish to participate in this study or if you wish to stop at any time, you may do so without justifying your decision. Your future treatment will not be affected in any way.

- All the information that you give whilst taking part in this study will be treated in confidence and your answers will be anonymous.
- Your choice to take part (or not to) will not effect your treatment, now or in the future
- The information will be used for research purposes only
- You can decide to stop at any point during the questionnaires or interview

If you have any queries about the research we can be contacted in the Department of Medical Psychology
We are currently undertaking a research project to look at the effect that illness has on peoples health-related behaviour. The study is being performed in partial fulfilment of the requirements of the Doctorate of Clinical Psychology at Leicester University.

Health-related behaviour refers to behaviour that either enhance health (such as regular exercise) or that are damaging to health (such as drinking and smoking). Specifically, we are investigating causal beliefs and intentions to change drinking behaviour amongst people with an alcohol-related illness. We are interested in the impact that physical illness has on people's motivation to change their drinking behaviour. In order to look at this, we have begun interviewing patients admitted to wards at Leicester General Hospital with suspected alcohol-related illness. We are now hoping to include individuals who are currently seeking help from the Community Alcohol Team.

Potential recruits to the study will be identified from the current caseloads of the team (with their consent). The key-worker involved with a particular customer will be asked to discuss the study with them and to give them a letter of Invitation to Participate (from the Clinical Director of the team) and an Information Leaflet. Written consent to participate will be obtained for each participant. Participation will involve one meeting with a researcher, which will take about 45-60 minutes. They will asked to complete five brief questionnaires related to their illness and beliefs about it's cause, their alcohol intake and thoughts about changing their drinking habits. There will also be brief interview questions related to these areas.

Thank you for your time. If you have any further questions about the study, you can contact:

Liz Revell (Trainee Clinical Psychologist, Leicester University)
IMPACT OF ILLNESS ON HEALTH-RELATED BEHAVIOUR

STAFF INFORMATION SHEET - HOSPITAL STAFF

We are currently undertaking a research project to look at the effect that illness has on peoples health-related behaviour. The study is being performed in partial fulfilment of the requirements of the Doctorate of Clinical Psychology at Leicester University.

Health-related behaviour refers to behaviour that either enhance health (such as regular exercise) or that are damaging to health (such as drinking and smoking). Specifically, we are investigating causal beliefs and intentions to change drinking behaviour amongst people with an alcohol-related illness. We are interested in the impact that physical illness has on people’s motivation to change their drinking behaviour. In order to look at this, we are hoping to be able to talk to a number of patients whilst they are in hospital. The intention is to focus on people with liver disease or acute pancreatitis, where alcohol is suspected to have played a causal role.

The nature of the study will be explained to potential participants, outlining that it is particularly concerned with their alcohol use. Written consent to participate will be obtained for each participant. Participation will involve one meeting with a researcher, which will take about 45-60 minutes. They will asked to complete five brief questionnaires related to their illness and beliefs about it’s cause, their alcohol intake and thoughts about changing their drinking habits. There will also be brief interview questions related to these areas.

Thank you for your time. If you have any further questions about the study, you can contact:

Liz Revell (Trainee Clinical Psychologist, Leicester University/Hadley House)
INVITATION TO PARTICIPATE

Dear (Persons name),

Colleagues from the Medical Psychology Department at Leicester General Hospital are currently involved in a research project that is examining the impact of illness on health-related behaviour. Your key-worker will give you an Information Leaflet explaining the details of the project. I understand that you meet the criteria for participation in this study and would like you to consider taking part.

Please take some time to read the Information Leaflet. Your key-worker will discuss with you whether you would be willing to take part. If you agree to participate, a meeting with the researcher will be arranged at your convenience, when you will be able to ask any further questions. The researcher will ask for your written consent to take part before continuing with the interview.

Thank you very much for your time.

Yours sincerely,

(Clinical Director, Drug & Alcohol Services)
INVITATION TO PARTICIPATE

Dear (Patient’s name)

Colleagues from the Medical Psychology Department are currently involved in a research project that is examining the impact of illness on health-related behaviour. Please find enclosed an information sheet explaining the details of the project. I understand that you meet the criteria for participation in this study and would like you to consider taking part.

Please take some time to read the Information Leaflet. A researcher will return in the near future to discuss whether you would be willing to take part. If you agree to participate, a meeting with the researcher will be arranged at your convenience, when you will be able to ask any further questions. The researcher will ask for your written consent to take part before continuing with the interview.

Thank you very much for your time.

Yours sincerely

...........................
(Consultant responsible for patient’s care)
APPENDIX B

DEMOGRAPHIC INFORMATION SHEET - COMMUNITY

DEMOGRAPHIC INFORMATION SHEET - HOSPITAL
IMPACT OF ILLNESS ON HEALTH-RELATED BEHAVIOUR

DEMOGRAPHIC INFORMATION SHEET

Code Number  ___________    Keyworker  ___________

Sex
1 = Male
2 = Female

Ethnic Origin
1 = White
2 = Black
3 = Asian other
4 = Other

Age  ___________

Length of contact with team  ___________

Diagnosis
1 = Liver
2 = 'Other'  ___________

Employment
1 = Employed
2 = Unemployed
3 = Self employed
4 = Student
5 = Retired
6 = Housewife

Marital status
1 = Married, living with spouse
2 = Married, separated from spouse
3 = Divorced
4 = Widowed
5 = Cohabiting
6 = Single

Living arrangements
1 = Alone
2 = Spouse/common law wife
3 = Spouse plus children
4 = NFA / living rough
5 = Other
**IMPACT OF ILLNESS ON HEALTH-RELATED BEHAVIOUR**

**DEMOGRAPHIC INFORMATION SHEET**

<table>
<thead>
<tr>
<th>Code Number</th>
<th>Ward no.</th>
<th>Admission no.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sex**
1 = Male  
2 = Female

**Ethnic Origin**
1 = White  
2 = Black  
3 = Asian other  
4 = Other

**Age**
___________

**Admission length**
___________ (days)

**Diagnosis**
1 = Liver disease  
2 = Acute pancreatitis

**Employment**
1 = Employed  
2 = Unemployed  
3 = Self employed  
4 = Student  
5 = Retired  
6 = Housewife

**Marital status**
1 = Married, living with spouse  
2 = Married, separated from spouse  
3 = Divorced  
4 = Widowed  
5 = Cohabiting  
6 = Single

**Living arrangements**
1 = Alone  
2 = Spouse/common law wife  
3 = Spouse plus children  
4 = NFA / living rough  
5 = Other
APPENDIX C

SEMI-STRUCTURED INTERVIEW QUESTIONS - COMMUNITY

SEMI-STRUCTURED INTERVIEW QUESTIONS - HOSPITAL
IMPACT OF ILLNESS ON HEALTH-RELATED BEHAVIOUR

SEMI-STRUCTURED INTERVIEW QUESTIONS
(Community sample)

1a. What do you think is the main cause of your current illness?

[1b. What do you think is the cause?
   What have you been told? / What do you think about what you’ve been told?]

2. Have you been in hospital in the past/had medical treatment due to this illness?

3a. Has your illness made a difference to your attitude towards your drinking? / Have you changed (cutting down/stopped) drinking as a result of your illness?

   b. If so, in what way? (If not abstinent, have you thought about stopping altogether?)

4. Do you think this will make a difference to your illness?
5a. Do you think that you will be able to cut down/stop drinking? (If stopped already, do you think you will be able to maintain this?)

b. What might make it difficult?

6a. Have you tried to cut down/stop drinking in the past?

b. What happened? / What made it difficult?

7a. If you stopped, how long were you abstinent for?

b. What made you start drinking again?
IMPACT OF ILLNESS ON HEALTH-RELATED BEHAVIOUR

SEMI-STRUCTURED INTERVIEW QUESTIONS
(Hospital sample)

1a. What do you think is the main cause of the illness for which you are now in hospital?

[1b. What do you think is the cause?
What have you been told? / What do you think about what you’ve been told?]

2. Are you thinking about changing your drinking habits (cutting down/stopping) you leave hospital?

3. Do you think this will make a difference to your illness?

4a. Do you think that you will be able to cut down/stop drinking?

b. What might make it difficult?
5a. Have you tried to cut down / stop drinking in the past?

b. What happened? / What made it difficult?

6a. If you stopped, how long were you abstinent for?

b. What made you start drinking again?

7a. Have you sought help in the past to reduce or stop drinking?

b. Who did you see? / What made you seek help at that time?
APPENDIX D

HEALTH QUESTIONNAIRE
HEALTH QUESTIONNAIRE

Any information given on this form will remain completely confidential
Here are some questions about things you may do which might affect your health.
Please answer ALL the questions
Please circle only ONE answer for each question - for the answer which most nearly applies to you.

1. IN THE MONTH PRIOR TO ADMISSION: have you smoked any cigarettes? YES NO
   If Yes:
   About how many cigarettes have you smoked a day? 1-4 5-14 15-24 25 or more

2. IN THE MONTH PRIOR TO ADMISSION: have you had an alcoholic drink at all? YES NO
   If Yes: Please answer A and B
   A. About how often have you had any of the following types of drink over the month prior to admission
      Beer, lager, cider etc. : not at all less than 1-2 times 3-4 times 5-6 times Every day
      Wine, sherry, vermouth etc: not at all less than 1-2 times 3-4 times 5-6 times Every day
      Gin, vodka, whisky etc: not at all less than 1-2 times 3-4 times 5-6 times Every day
   B. When you had a drink over the month prior to admission how much of the following types of drink did you usually have a day (i.e 24 hour period)
      Pints beer, lager, cider etc : none 1-2 3-4 5-6 7-10 11-14 15 or more
      Glasses of wine, sherry etc : none 1-2 3-4 5-6 7-10 11-14 15 or more
      Measures of spirits (gin, vodka, : none 1-2 3-4 5-6 7-10 11-14 15 or more
      rum, brandy, whisky etc)

3. IN THE PAST SIX MONTHS, were there occasions when you drank much more than the amounts you circled above, for example at parties or when you were on your own? YES NO

4. Do you ever drink enough to stay drunk 24 hours later (and periods where you do not drink at all)? YES NO

5. Is that your regular pattern or do you generally drink in-between? YES NO

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1 Adapted from questionnaire used by Heather, Rollnick, Bell & Richmond, 1996
APPENDIX E

ANALYSIS OF SEVERITY OF DEPENDENCE SCALE: CUT-OFF SCORES FOR STAGE OF CHANGE CLASSIFICATION
Table 12. Descriptive Statistics for Analysis of Severity of Dependence Scale Scores Across Stages of Change

<table>
<thead>
<tr>
<th>STAGE OF CHANGE CLASSIFICATION</th>
<th>Precontemplation</th>
<th>Contemplation</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median</td>
<td>11.0</td>
<td>10.0</td>
<td>5.0</td>
</tr>
<tr>
<td>SD</td>
<td>5.78</td>
<td>1.84</td>
<td>3.64</td>
</tr>
<tr>
<td>Minimum</td>
<td>3.0</td>
<td>8.5</td>
<td>0.0</td>
</tr>
<tr>
<td>Maximum</td>
<td>18.0</td>
<td>13.0</td>
<td>11.0</td>
</tr>
<tr>
<td>Range</td>
<td>15.0</td>
<td>4.5</td>
<td>11.0</td>
</tr>
<tr>
<td>Interquartile Range</td>
<td>11.25</td>
<td>3.38</td>
<td>6.75</td>
</tr>
</tbody>
</table>

Stage of Change classification