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**Comorbid Trauma and Substance
Misuse: Enhancing Conceptual
Knowledge**

By

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A thesis submitted in partial fulfilment of the requirements for the degree of
Doctor of Clinical Psychology

Coventry University, School of Health and Social Sciences and The University of
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Abbreviations:

PTSD: Posttraumatic stress disorder

PTDS: Posttraumatic Diagnostic Scale

PTCI: Posttraumatic Cognitions Inventory

BASU: Beliefs About Substance Use inventory

DEQ: Drinking Expectancy Questionnaire

DRSEQ: Drinking Refusal Self-Efficacy Questionnaire

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DECLARATION

This thesis was carried out under the supervision of Dr Kay Garvey and Dr Melanie Day who were involved in the initial formulation of ideas, development of the research design and access to participants. Guidance was also offered with regard to the final content of this thesis. Dr Stephen Joseph offered support with regard to the use of factor analysis and mediation analysis techniques, whilst David Giles and Duncan Cramer provided further statistics advice. Apart from these collaborations this thesis is all my own work. Authorship of any papers derived from this research will be shared with Dr Kay Garvey, Dr Melanie Day and Dr Stephen Joseph. The thesis has not been submitted for a degree at any other university.

SUMMARY

The comorbid presence of trauma and substance misuse is becoming increasingly recognized as a common occurrence that causes significant functional impairment in clients, and presents numerous challenges to clinicians. The first chapter in this thesis reviews recent empirical and theoretical literature regarding the nature of the relationship between trauma and substance misuse so as to highlight principal considerations applicable to the process of conceptualisation.

In addition, Chapter two presents results of a principal component analysis of the Beliefs About Substance Use inventory (BASU) in order to facilitate the accurate measurement of beliefs in individuals who misuse substances. Findings indicated that in addition to its overall score reflecting the extent of dysfunctional beliefs about substance use, the BASU is also able to evaluate important beliefs with regard to motivations for continued use, barriers to cessation and withdrawal, beliefs about dependence whilst also addressing contemplative state.

With a view to further enhancing current conceptual knowledge, findings from the main empirical paper focussing on the role of beliefs in the relationship between trauma and alcohol abuse, are presented in chapter three. Associations between trauma exposure, trauma symptom severity, negative posttraumatic cognitions, beliefs about substance use and drinking expectations were examined. Following this preliminary investigation, results highlighted the significant contribution of trauma symptom severity and negative posttraumatic cognitions in relation to beliefs and expectancies about alcohol.

Chapter I:

Literature Review

Temporality, Functionality and Susceptibility in Comorbid Trauma and Substance Misuse: Informing Conceptualisation

This paper has been prepared for submission to

Psychological Bulletin

See appendix 15 for instructions for authors

ABSTRACT

Literature reporting findings with regard to the area of trauma and substance misuse not only identify the common co-occurrence of these two disorders, but also highlight the complex nature of this relationship. Trauma exposure is typically thought to precede the development of substance misuse difficulties, whilst the self-medicating effects of substances are recognized as a primary factor in the management of trauma symptoms. Presence of both disorders is said to significantly impair functioning as well as lead to reduced treatment compliance and poorer outcomes, and as such clearly presents a number of challenges to clinicians working with this population. With this in mind the following review addresses the literature in a manner that enhances the clinical utility of theoretical and empirical research findings.

1. INTRODUCTION

1.1. *Social context*

In recent decades a growing body of literature has documented the co-occurrence of substance misuse and trauma in both clinical and community samples. It is likely that this is due in part, to increased recognition of comorbidity prevalence generally alongside complications noted within these populations with regard to treatment and relapse.

Historically, the spectrum of trauma and substance misuse literature comprises studies that seek to determine prevalence and aetiology, onset and temporality, and functional relations investigating potential underlying mechanisms. Experimental enquiry and subsequent reviews consistently highlight the strength of association between these two disorders, whilst attempting to offer new insight and future direction in order that the mechanisms involved might gain clarity. More recently dual treatment programmes have emerged thus paving the way for a new generation of research investigating treatment efficacy and outcome (Triffleman, Carroll & Kellogg 1999; Najavits, Weiss, Shaw & Muenz 1998).

Relative to other fields of research however, insight remains limited. Conceptual knowledge is growing but attempts to translate this in a clinically applicable manner are scarce. Presence of comorbid trauma and substance misuse is said to lead to greater psychological and medical morbidity, an inferior level of functioning including unemployment and homelessness in addition to low treatment compliance and poorer outcomes (Ouimette & Brown 2003). The relationship between substance misuse and PTSD is clearly complex and thus

presents numerous challenges to clinicians working with at-risk clients. In a recent review of the literature Jacobsen, Southwick & Kosten (2001) reported that civilian prevalence of lifetime substance use disorders ranged from 21.6 – 43% in persons with PTSD compared to 8.1 – 24.7% for those without, and that rates for individuals in in-patient substance abuse settings were amongst the highest at between 42.5 and 62%. In view of reported prevalence the likelihood of encountering any number of individuals with both substance use issues and trauma histories is indeed high. This being the case it seems important to consider the contribution of current literature in terms of knowledge that might inform conceptualisation.

1.2. *Scope of this review*

The following paper offers a selective overview of recent literature regarding temporal and functional models of comorbid trauma and substance misuse with a view to highlighting important features of the relationship in order to inform clinical practice. Following discussion of findings in a manner that emphasises principal considerations, a hypothetical conceptualisation and summary are presented. The review concludes with a précis of important theoretical and methodological limitations whilst also identifying areas for further investigation.

2. TEMPORAL SEQUENCE OF SUBSTANCE MISUSE AND TRAUMA

A number of studies have sought to enhance conceptual knowledge regarding comorbid trauma and substance misuse by firstly examining temporal order of onset. McFarlane (1998) distinguished between three types of model pertaining

to temporal order suggesting that there is evidence to support a series of directional hypotheses.

1. *Antecedent Models* whereby alcohol abuse firstly leads to increased risk of trauma exposure and secondly leads to an increased risk of developing posttraumatic stress disorder (PTSD) following trauma exposure.
2. *Precipitant Models* that propose that trauma exposure increases an individual's risk of developing alcohol abuse regardless of whether that abuse follows the presence or absence of PTSD.
3. *Longitudinal Models* whereby alcohol abuse represents a risk factor for PTSD chronicity. Alcohol abuse may also only emerge after initial PTSD symptoms fail to settle over time or alternatively, alcohol abuse remains whilst PTSD remits and thus becomes linked to some other psychiatric disorder which has taken over from PTSD as the primary psychiatric diagnosis.

Authors have noted that direction of onset is an important consideration in the prevention, education and treatment of comorbid disorders (Najavits, Weiss & Shaw 1997) and that identification of a primary disorder may facilitate clearer understanding of pathology and appropriate treatment planning (Brady, Dansky, Sonne & Saladin 1998). Findings from a number of studies will now be considered with the aim of summarising evidence in a manner that reflects the general consensus with regard to temporal sequence.

2.1. Primary trauma exposure and onset of PTSD

In an extensive review of the literature, Stewart (1996) examined the possibility of several causal pathways that might explain the co-occurrence of PTSD and alcoholism. With regard to primary onset of PTSD, Stewart suggested that the disorder might be involved in the development of alcohol abuse in a manner consistent with the concept of self-medication proposed by Khantzian (1985) whereby individuals are predisposed to addiction as a consequence of experiencing painful affect states and related psychiatric disorders.

Bremner, Southwick, Darnell & Chamey (1996) measured the relative order of emergence of specific PTSD symptom clusters and related substance use disorder symptoms in 61 Vietnam veterans. Consistent with the findings from previous studies (Davidson, Kudler, Saunders & Smith 1990; Davidson, Swartz, Storck, Krishnan & Hammet 1985) the authors discovered that onset of PTSD symptoms usually occurred close to the time after combat exposure, whilst onset of substance use disorder symptoms typically occurred around the time of the initial emergence of PTSD symptoms. An increase in substance use disorder symptoms was also observed to parallel the increase in PTSD symptoms following trauma exposure. Similarly, the work of Kessler, Sonnega, Bromet, Hughes and Nelson (1995) utilising a large community based sample of men and women (5,877), revealed that when date of disorder onset reports from individuals with comorbid PTSD and substance use disorder were considered, PTSD predated the development of substance use disorders in the majority of cases.

Chilcoat and Breslau (1998a) conducted a 5-year longitudinal study of PTSD using a sample drawn from a health maintenance organization. In accordance with findings from cross-sectional research, results from their study offered greatest support to the notion of self-medication. The authors noted a fourfold increase in the risk of substance use disorders in participants with a history of PTSD compared to those without. Having sought to examine a number of proposed pathways using the first prospective study design, the authors demonstrated that:

1. Pre-existing PTSD increased the risk of drug abuse / dependence particularly in the case of prescribed psychoactive drugs.
2. There was no evidence that drug abuse / dependence increased risk of exposure to traumatic events.
3. Pre-existing drug abuse / dependence signalled a slight although non-significant increase in likelihood that PTSD would develop after a traumatic event.
4. Furthermore, no evidence was found to support the hypothesis that exposure to traumatic events in the absence of subsequent PTSD increases the risk of drug abuse / dependence.

Following the observation that individuals with a negative history of PTSD at baseline who had developed PTSD during the follow-up period had been overlooked during the study, the authors then undertook to strengthen their original findings. This involved testing the hypothesis that one disorder exerts a causal influence over the other by demonstrating that it increases the risk of developing the other. Findings from their prospective analyses were extended by combining retrospective data collected at baseline and longitudinal data gained at

3 and 5-year follow-up (Chilcoat & Breslau 1998b). This provided a history of PTSD and drug use / dependence across each respondents lifetime. Once again the authors concluded that data were indeed indicative of a self-medication process having observed a replication of results obtained previously.

Studies demonstrating onset of PTSD prior to that of substance misuse are extensive, but illustrate just one of the many proposed pathways. Authors have additionally commented on the converse relationship whereby substance misuse exists as the primary disorder.

2.2. Primary onset of substance misuse

In accordance with antecedent models of onset, Stewart (1996) hypothesised that substance intoxication could heighten the likelihood of trauma exposure thereby indirectly increasing the risk for PTSD development among habitual substance users. In addition, substance misuse might increase anxiety and arousal levels through physiological processes such as prolonged drinking effects or withdrawal, inducing a hyperaroused state in which the individual may be at greater risk of developing PTSD following trauma exposure.

In contrast to many studies addressing temporal order Cottler, Compton, Mager, Spitznagel and Janca (1992) found that the onset of substance misuse typically preceded PTSD onset in non-clinical participants. Data obtained from the first non-institutionalised population survey of PTSD prevalence (Helzer, Robins & McEvoy 1987) led to the suggestion that on average, drug use significantly predated the development of PTSD (Chilcoat & Menard 2003). The study has however, been heavily criticised on the grounds of reliability with regard to the

operational definition of variables. Onset of drug and alcohol use represented the age at first use as opposed to the age at which substance use related problems developed. Onset of substance use can precede the development of any specific problem by a number of years and as such critics commented on the potential for bias (Chilcoat & Menard 2003; Stewart 1996; Stewart, Pihl, Conrod & Dongier 1998).

Brown and Wolfe (1994) noted that individuals who began using substances at an early age might be more susceptible to developing PTSD following a traumatic event because they have historically relied on substances as a way to combat stress and have failed to develop more effective stress inoculation strategies. In addition, Triffleman (1998) discussed the notion that substance intoxication and withdrawal may lead to increased powerlessness and decreased perception of self-efficacy thus resulting in both perceived and actual victimhood, or in witnessing traumatic events in the absence of action. This exposure combined with an absence of effective coping mechanisms may be indicative of a vulnerability to the development of PTSD.

Comparatively speaking, studies indicating prior onset of substance misuse are few and far between, with those that do exist having been exposed to methodological criticism. To date, much of the literature remains consistent with the concept of self-medication although some studies have suggested that individuals with PTSD and substance misuse are susceptible to the development of comorbid trauma and substance misuse as a consequence of a specific vulnerability.

2.3. Shared-vulnerability hypothesis

Observations have been made regarding anxiety sensitivity that appear to offer support to the notion of shared-vulnerability. Stewart, Conrod, Samotuk, Pihl and Dongier (2000) considered the proposal that anxiety sensitivity is a risk factor for substance misuse. Alongside recognition that sensitivity levels are also reported to be elevated in individuals with PTSD, anxiety sensitivity may represent a premorbid vulnerability factor for the development of PTSD following exposure to a traumatic event as individuals with high sensitivity would be more inclined to develop conditioned fear responses to trauma cues. In a study of community recruited substance misusing women, the authors found that anxiety sensitivity mediated the observed associations between PTSD symptoms and situation-specific heavy drinking i.e. substance misuser's with more frequent PTSD symptoms drink heavily in certain negative situations, in part because they are highly fearful of anxiety sensations (Stewart & Conrod 2003).

The findings of McLeod et al (2001) are also consistent with a shared-vulnerability model of comorbid PTSD and substance misuse. In a study comparing monozygotic and dizygotic twins, both of whom had served in Vietnam, the authors discovered that factors other than combat exposure were important influences on long term drinking patterns. They demonstrated that the same genetic influences that affect the level of combat exposure also influenced the level of alcohol use and level of avoidance, arousal and re-experiencing symptoms. These individual characteristics were hypothesised to represent some personality factor such as impulsivity or sensation seeking.

In summary, findings from studies suggest that the “temporality criterion of causality” is met in the case of comorbid substance misuse and PTSD (Stewart & Conrod 2003 pp. 37). Retrospective results have demonstrated that in the majority of cases PTSD develops prior to substance misuse, whilst data from prospective designs have also indicated that PTSD contributes to elevated risk of developing a substance use disorder. Data regarding temporality on the whole, offers consistent support for a self-medication explanation of comorbid trauma and substance misuse. Having visited literature regarding developmental sequence, functional relations offering further insight fundamental to the conceptualisation process will now be considered.

3. FUNCTIONAL MODELS OF TRAUMA AND SUBSTANCE MISUSE

A growing body of literature has emerged, focussed on the underlying functional mechanisms involved in the relationship between trauma and substance misuse. As previously noted, evidence has indicated that in cases where PTSD develops prior to substance misuse, the latter consistently occurs following attempts to alleviate or control PTSD symptoms. Grice, Brady, Dustan, Malcolm and Kilpatrick (1995 pp. 298) discussed the occurrence of comorbidity in the context of administering substances in an attempt to “dampen the hyperaroused state associated with PTSD, and suppress the emotional and physiological reactivity that comprises the post-trauma response”. Intolerable affect, intrusive memories or sleep disturbances amongst other positive symptoms may be sufficiently distressing for the individual to develop an alcohol problem following attempts to dampen down PTSD symptoms. In addition, substances may be used to overcome the negative symptoms of PTSD such as emotional numbing,

dysphoria and estrangement from others (Triffleman 1998). The concept of self-medication provides a useful heading under which to examine a number of observations regarding functional association. The self-medicating properties of substances are now detailed according to their physiological, behavioural, affective and cognitive effects.

3.1. Physiological factors

Discussions of the physiological effects of substances centre on the notion of stress response dampening where the primary aim is to reduce one's level of physiological arousal. Volpicelli (1987) proposed an endorphin-compensation hypothesis whereby people report using alcohol following a traumatic event in order to relieve symptoms of anxiety, irritability and depression. Alcohol offers relief, as drinking compensates for deficiencies in endorphin activity following trauma. Due to the fact that alcohol has the effect of increasing endorphin activity, drinking following trauma may be used to compensate for endorphin withdrawal and aids avoidance of associated emotional distress.

More recently Stewart, Conrod, Pihl and Dongier (1999) conducted a study that revealed that abuse of alcohol, anxiolytic and analgesic dependence were specifically correlated with arousal symptoms. Anxiolytics and analgesics were also associated with the desire to feel numb. The authors concluded that substance misuse resulted from attempts to self-medicate PTSD symptoms such as disturbed sleep, irritability, poor concentration, hypervigilence, increased startle response and nightmares.

Studies reporting physiological findings emphasise the need for thorough assessment of arousal levels and related patterns of drinking, in addition to gaining a history of impulsive behaviours. Information regarding such issues would facilitate the identification of high-risk periods and as such provide a valuable opportunity to plan effective individually tailored interventions.

3.2. *Cognitive considerations*

With reference to the cognitive effects of drinking, alcohol abuse is said to occur in response to persistent re-experiencing of the traumatic event through intrusive memories, difficulties with concentration, hypervigilence and avoidance of all thoughts associated with the event.

In addition to studies documenting information-processing biases in PTSD patients, researchers have begun to investigate the effect of drugs on selective attention to threat in participants with high anxiety. Stewart, Achille and Pihl (1993) found that the degree of attentional bias for threatening information in a group of students with high anxiety-sensitivity who had received a moderately intoxicating measure of alcohol was significantly attenuated compared to that of students with high anxiety-sensitivity who had been given a placebo.

Similarly, the attention-allocation model proposed by Steele and Josephs (1988) suggested that alcohol reduces psychological stress indirectly through its impairment of cognition and perception, rather than directly through its pharmacological properties. Firstly, alcohol impairs an individual's capacity to engage in controlled, effortful cognitive processing i.e. processing that requires attention. Secondly, alcohol narrows perception to the most immediate internal

and external cues. The subsequent narrowing of attention to immediate cues should focus processing onto the demands of an immediate activity thereby preempting the processing of stressful thoughts, blocking their impact and providing relief from the stress they might otherwise cause (Steele & Josephs 1988).

Consistent with this model are the findings of Stewart et al (1998). In a paper reviewing functional associations between trauma and substance misuse, where PTSD patients exhibited enhanced recall of trauma related material relative to trauma exposed individuals without PTSD, the authors noted that individuals with PTSD may be using drugs in an attempt to dampen their excessive conscious recollection of the traumatic experience.

Individuals appear prone to a number of cognitive consequences as a result of trauma exposure and substance misuse, many of which have implications for clinical practice. Dissociation from painful experience and impaired memory may affect recall of important details. Awareness of attentional bias, sensitivity to trauma cues and the potential for retraumatisation and increased substance misuse is essential.

3.3. Behavioural factors

Trauma induced behavioural avoidance may lead to misuse of substances following attempts to manage or control symptoms. This hypothesis is consistent with propositions of much earlier work by Conger (1951) who proposed a tension-reduction model of substance misuse whereby drinking occurs before entry into a feared situation to reduce anxiety and subsequent behavioural avoidance. Sharkansky, Brief, Peirce, Meehan and Mannix (1999) hypothesised that a

diagnosis of PTSD in patients seeking treatment for substance misuse would be associated with more frequent use in situations that were likely to be evocative of PTSD symptomatology, or might present a challenge to these individuals due to reliance on less effective coping strategies. Findings demonstrated that those with PTSD reported an increased frequency of alcohol and drug use in situations involving unpleasant emotions, conflict with others and physical discomfort compared to those without PTSD. Thorough assessment of drinking contexts would therefore shed light on substance use motivations.

3.4. *Affective motivations*

Using the theory of developmental traumatology De Bellis (2001) hypothesised that permanent changes occur in the major biological stress response systems of children following traumatic stress. These changes include elevated levels of catecholamines responsible for the activation of biological changes related to the 'fight or flight' response. During development this then leads to an enhanced vulnerability to psychopathology due to the negative affect symptoms associated with dysregulation, and subsequently increases the risk of later onset adolescent and adult alcohol and substance use disorders as a means to regulate emotions.

Writers have additionally suggested that alcohol may be used in order to relieve feelings of guilt, anxiety and dysphoria and also in attempts to block the more expressive elements of emotion (Kosten & Krystal 1988). Carpenter and Hasin (1999) stated that support for the hypothesis that individuals drink to cope with negative affect has been found in studies utilising both prospective and cross-sectional methods. Prospective analysis of a sample of non-alcoholic community drinkers revealed that drinking to cope with negative affect predicted a DSM – IV

alcohol dependence diagnosis at a 1 year follow-up (Carpenter & Hasin 1998). Furthermore, cross-sectional studies of drinking motives in problem drinkers demonstrated greater levels of drinking to cope with negative affect relative to non-problem drinkers across several definitions of problem drinking (Carpenter & Hasin 1998a). Again information detailing affective states prior to, during and after substance use offers valuable insight and guidance with regard to conceptualisation and treatment planning.

Ultimately, in reality it is likely that use of substances is frequently concerned with the management of numerous PTSD symptoms. In addition, research examining the relationship between specific PTSD symptom dimensions and abuse of particular substances suggests that substances may also be differentially associated with various sets of PTSD symptoms (Stewart et al 1999; Stewart et al 1998). Taken together these findings together illustrate the complexity of the relationship between these two disorders.

4. FACTORS INDICATIVE OF PTSD AND SUBSTANCE USE

SUSCEPTIBILITY

In addressing the literature to inform clinical practice, it is also important to consider variables that render the individual at greater risk of developing a disorder. The extent to which any model is useful in explaining comorbidity may be influenced by a number of factors including for example, individual difference, historical and familial context, additional psychopathology, and trauma related variables. In addition to the concept of anxiety sensitivity and genetic influences reported previously, the following observations have been detailed with regard to

increased susceptibility to the development of comorbid substance misuse and trauma.

4.1. Biological and neurological mechanisms

In a comprehensive review of the literature Conrod and Stewart (2003) presented findings from a number of laboratory-based studies of individuals with PTSD indicating abnormalities in the P300 component of the event related brain potential thought to reflect efficiency of the nervous system in classifying novel stimuli. This characteristic may represent a genetically mediated vulnerability factor for the development of PTSD via reduced ability to encode and integrate intrusive memories. This abnormality has also been found in alcoholics and those at genetic risk of developing alcoholism, where it was observed that alcohol regulated P300.

In addition, studies examining the functioning of survivors of combat and sexual abuse have revealed that lower global IQ, delayed developmental milestones and poor performance on memory and executive function tests are amongst a number of possible impairments linked to a susceptibility to PTSD which have also been found in alcoholic patients and non-alcoholic children of alcoholics (Gurvits et al 2000; Yehuda, Keefe, Harvey, & Levengood 1995). In light of findings related to level of functioning and heightened arousal, the question arises as to the appropriateness of standard interview techniques and contexts in the assessment of clients with comorbid PTSD and substance misuse.

4.2. Historical factors

With regard to historical influences Najavits, Weiss and Shaw (1999) conducted a cross-sectional evaluation of both a dual-diagnosis (PTSD and substance misuse) and a single-diagnosis (PTSD only) female sample. This revealed that women from the dual-diagnosis group evidenced a more severe clinical profile than those from the single-diagnosis group, including worse life conditions as children and adults, greater criminal behaviour, a higher number of lifetime suicide attempts, greater number of siblings with a drug problem and fewer out patient psychiatric treatments. Virtually all participants in this study had a history of childhood trauma consistent with findings from other studies documenting childhood sexual abuse and victimization in those with PTSD and substance misuse, particularly women (Brabant, Forsythe & LeBlanc 1997; Miller, Downs & Testa 1993).

Teets (1995) found that chemically dependent women typically came from a family in which other members were addicted to substances, had started using drugs and alcohol at an early stage and were more likely to have been forced into sexual relations and to have been victim of rape. These findings together emphasise the appropriateness of comprehensive history taking with regard to traumatic experience, with an emphasis on determining established coping responses that might include substance misuse in addition to a range of alternative maladaptive strategies.

4.3. Psychopathology

In addition to the familial and behavioural factors noted earlier (i.e. antisocial behaviour, conduct problems, impulsivity and sensation-seeking). Najavits et al

(1997) commented on a number of studies that identified that patients with substance abuse disorders and PTSD are significantly more impaired than those with PTSD only. They have been found to have more Axis I disorders, particularly in relation to mood and anxiety, Axis II disorders, psychological symptoms, in-patient admissions and interpersonal problems, with a lower level of global functioning and motivation for treatment.

4.4. Trauma related factors

Factors specific to the experience of trauma itself may influence post trauma response. Authors have noted a gradient effect whereby the greater the exposure to a causal agent, the greater the effect on the causal outcome. Findings from a number of studies provide support for this notion as severity of alcohol problems have been found to be positively correlated to trauma type, greater event exposure and symptom severity (Keane, Gerardi, Lyons & Wolfe 1988; McFall, Mackay & Donovan 1992; Ouimette, Wolfe & Chrestman 1996; Saladin, Brady, Dansky & Kilpatrick 1995).

In addition, Volpicelli, Balaraman, Hahn, Wallace and Bux (1999) offered an expansion of the original endorphin-compensation hypothesis by noting distinct differences with regard to the post-trauma response as a consequence of trauma related factors such as perceived control. If perceived control over the traumatic event is lacking, the individual experiences an initial endorphin increase that instigates a withdrawal response once endorphin levels return to normal. Those who perceive control over the outcome of the event are said not to experience the same initial increase in endorphin activity. Experiencing an uncontrollable traumatic event is therefore said to increase the risk of developing a substance

abuse disorder. Investigation of the extent of trauma exposure and an individual's perception of events seems pertinent if a thorough understanding of the relationship between difficulties is to be reached.

4.5. Additional considerations

Factors that have received much less attention within the literature but which may further contribute to developmental risk and clinical complexity, include coping styles and belief systems.

4.5.1 Coping

Comparison of substance users with and without concurrent PTSD demonstrated that those with PTSD employed significantly more avoidant coping styles. Substance users also engaged in more emotion regulation responses to stressors compared to non-substance using individuals with PTSD (Penk, Peck, Robinowitz, Bell & Little 1988). In addition, Derry (2000) noted that substance using individuals reported a higher number of traumas and a significantly lower propensity to employ problem-focused coping strategies compared to non-traumatised and non-substance using individuals. Substance use offers the opportunity to disengage or avoid emotions thereby regulating the level of distress experienced.

4.5.2 Beliefs

Attitudes and beliefs about drug effects on emotion regulation may be an important consideration in the relationship between substance misuse and trauma. Evidence has suggested that an individuals belief system is central to the

interpretation of traumatic events, recovery following trauma exposure and subsequent patterns of substance use (Roth, Leibowitz & DeRosa 1997).

Research has indicated that victimization and other forms of traumatic experience have the potential to affect an individual's beliefs in relation to personal vulnerability, self-worth, the trustworthiness of others, intimacy, and world benevolence (Epstein 1991; Janoff-Bulman 1992; McCann & Pearlman 1990). Assault on these beliefs has been reported to lead to symptoms of hopelessness, helplessness and self-defeating coping strategies (see Boyd 2000) thereby potentially exacerbating the risk of developing a substance misuse disorder.

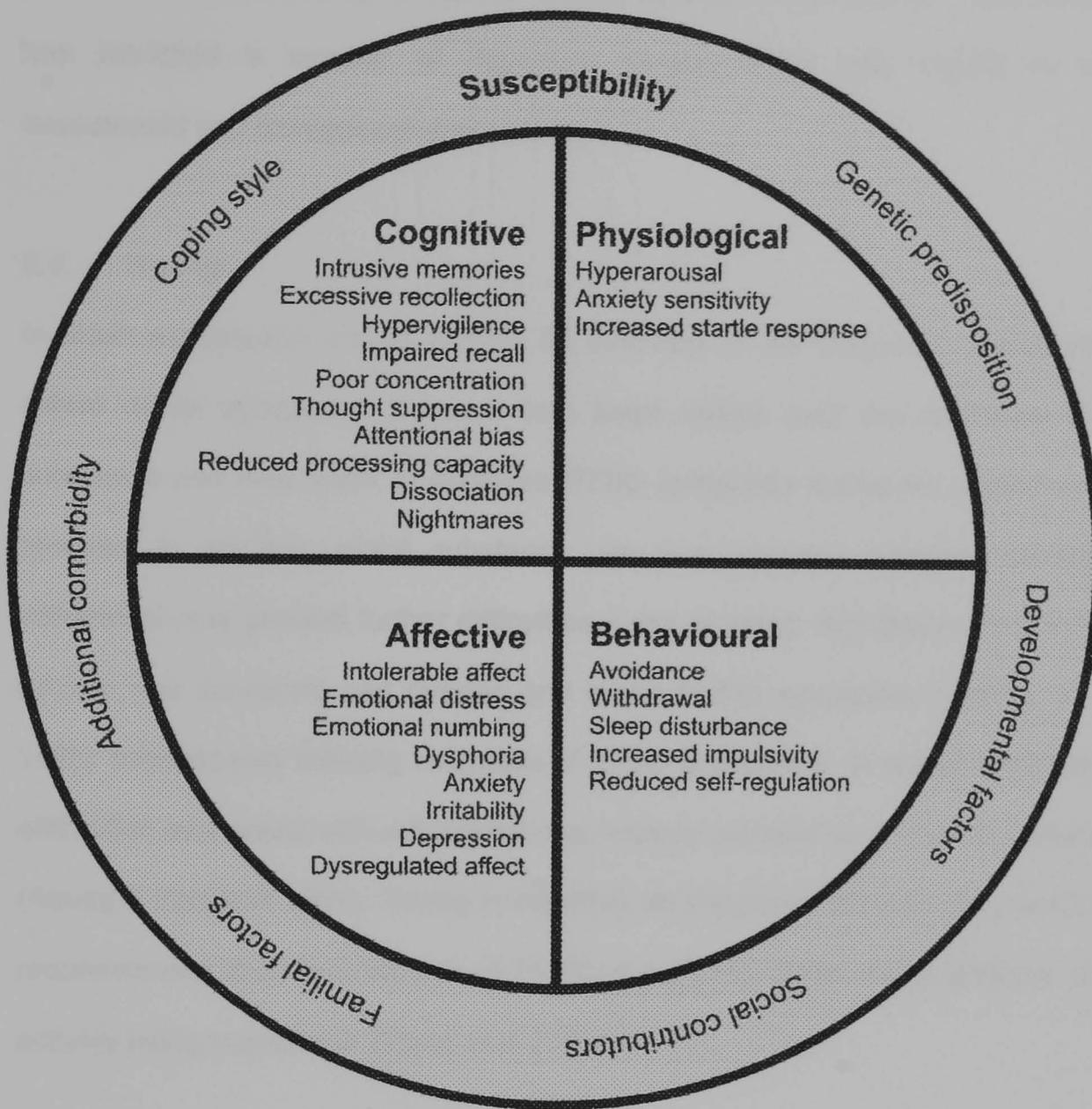
In relation to substance misuse, cognitive theorists have developed a range of models concerning the process of addiction. Marlatt and Gordon (1985) discussed the importance of self-efficacy beliefs regarding judgements about one's ability to cope without substances. In a study focussing on lapse-relapse cycling in substance abusing women, Elias (1997) discovered that as situational self-efficacy decreased, maladaptive cognitive belief endorsements about substance use increased. Furthermore, Beck, Wright, Newman and Liese (1993) discussed the notion of a number of addictive beliefs reportedly derived from a range of core beliefs regarding survival, achievement, lovability and acceptability, and centred around ideas about pleasure-seeking, problem-solving, relief and escape. Beliefs relevant to justification, risk-taking and entitlement as well as those concerned with anticipated deprivation during abstinence or helplessness in controlling cravings are also regarded as an integral component in substance use.

In addition, expectancy outcome theory proposes that alcohol use can be explained by particular expectations that individuals' hold about the reinforcing effects of substance use (Jones, Corbin & Fromme 2001). Studies have commented on the high incidence of beliefs relating to tension reduction, courage, arousal, relaxation and social and sexual enhancement amongst problem drinkers compared to non-problem drinkers (MacLatchy-Gaudet & Stewart 2001). If the expectation is that substance use will alleviate negative affect symptoms associated with trauma for example, the risk of subsequent use is heightened.

Taken together, findings regarding characteristic coping styles, impact of trauma on belief systems, and recognition of the role of beliefs in the development and maintenance of substance misuse are an important consideration, not only in identifying individuals at increase risk of developing these disorders, but also in the subsequent conceptualisation of such cases.

To conclude, literature presented here has addressed a range of biopsychosocial and situational factors relevant to the experience of the individual with comorbid trauma and substance misuse, offering insight into trauma experience and substance use motivations. With a view to consolidating conceptual knowledge these factors are summarised in Figure 1.

Figure 1: Summary of principle considerations



5. ASSESSMENT CONSIDERATIONS

In order to facilitate the development of accurate conceptualisations, the following section moves on to discuss recommendations with regard to the process and content of assessment. In response to the literature demonstrating the frequency and complexity of comorbid trauma and substance use, researchers and clinicians alike now encourage simultaneous assessment. Read, Bollinger and Sharkansky (2003) have reinforced the view that screening questions should be

standard practice in all substance use services and conversely PTSD treatment providers should routinely screen for substance use in their clients. The literature has identified a number of important considerations with regard to the assessment and conceptualisation process.

5.1. *Timing*

In-depth examination should include an overview of the frequency, nature and extent of all symptoms. Concern has been raised over the likelihood that substance use may mask or minimize PTSD symptoms during the assessment process. In addition, whilst substance use may dampen symptom severity, withdrawal may present further difficulties. Loss of sleep, nightmares, increased anxiety and intrusions can overlap and mimic PTSD symptoms (Saladin et al 1995) subsequently inflating estimates of PTSD prevalence. In addition, memory difficulties associated with withdrawal may impede recollection of trauma material (Abueg & Fairbank 1991). Timing is therefore an important consideration and it is recommended that assessment of PTSD should not occur whilst patients are actively using substances (Read et al 2003).

5.2. *Context*

With regard to context, Penk (1993) suggested the use of ethnographic techniques in order to facilitate the knowing of positive and negative reinforcers within the environment of the substance misuser with PTSD. Measures of social support are considered essential, particularly when substance use exists amongst significant others within the social sphere of the client. In addition Read et al (2003) noted further contextual issues potentially influencing the outcome of

assessment. These include the presence of court orders for treatment, cases of financial compensation alongside gender and cultural differences in the reporting of PTSD symptom severity.

5.3. Stigma

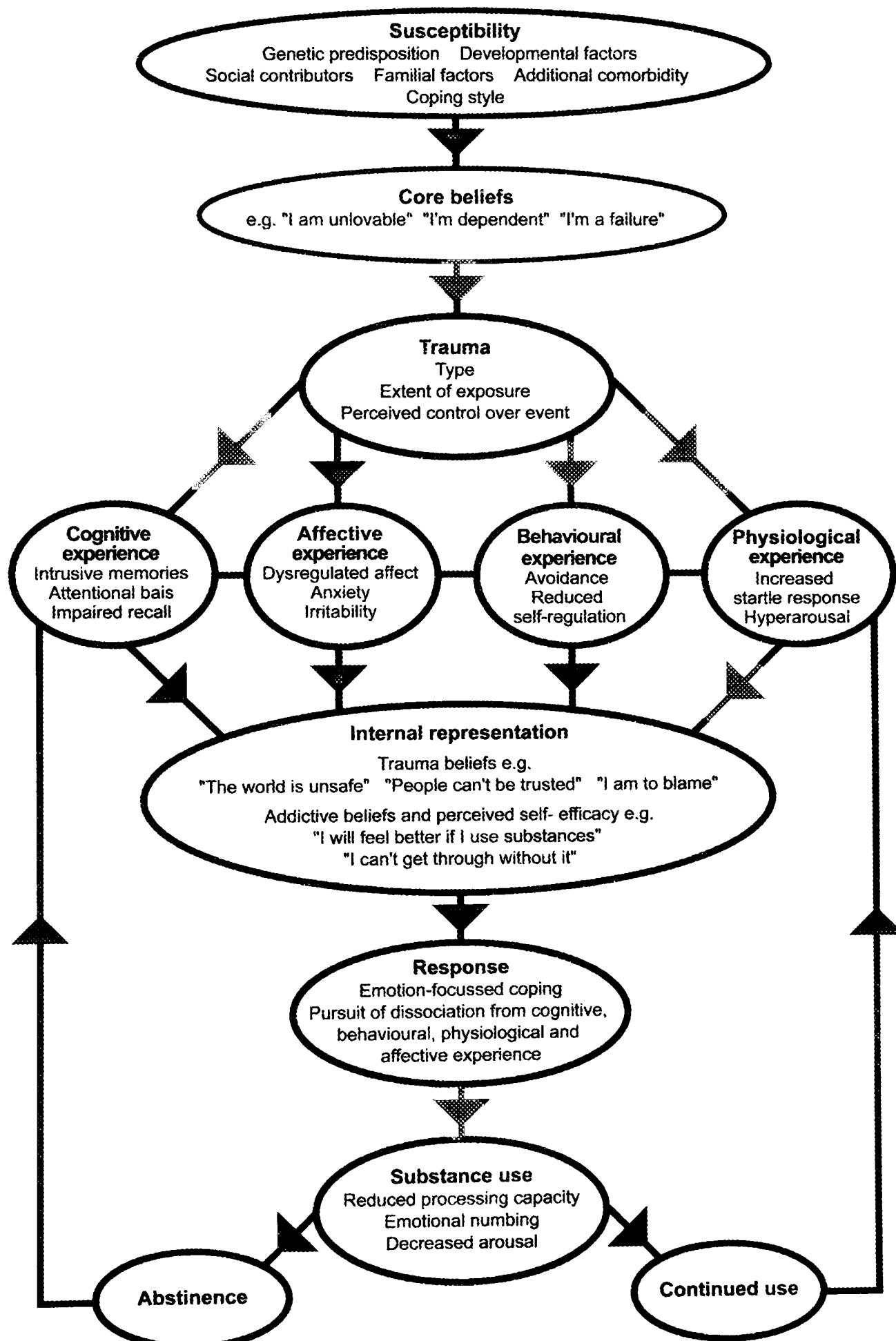
Victimization and substance use are both associated with significant societal stigma. This may present as a challenge during the assessment of individuals with comorbid PTSD and substance use as clients may subsequently minimise the extent of any symptoms they are experiencing (Read et al 2003). Providing an environment conducive to the reporting of events such as sexual victimization and excessive alcohol abuse that may be experienced as shameful is therefore essential.

Ultimately, authors have insisted that assessment should be an ongoing process not limited to the initial formulation of a diagnosis (see Penk 1993; Read, Bollinger & Sharkansky 2003; Ruzek, Polusny & Abueg 1998 for a comprehensive overview of measures and techniques).

6. CASE CONCEPTUALISATION

With the aim of further enhancing the clinical applicability of findings reported during the course of this review, a hypothetical conceptualisation of the relationship between trauma and substance misuse is presented in Figure 2. The diagram illustrates a global formulation of the development of substance use difficulties following trauma, based on a cognitive-behavioural framework.

Figure 2: Hypothetical case conceptualisation



This conceptual model demonstrates the role of susceptibility, trauma exposure and symptom experience whilst also suggesting a process through which the individual might come to use substances. In the first instance, factors pertaining to susceptibility indicate predisposition to the development of difficulties. The contributions of research into biological and social mechanisms are recognised with the additional consideration of cognitive schemas commonly identified in the development of substance misuse and emotional difficulties. Moving on from vulnerability, trauma occurs, the response to which is largely determined by the type and severity of trauma exposure in addition to an individual's perceptions of the event. Having been exposed to a traumatic event, a combination of cognitive, affective, behavioural and physiological symptoms may develop as summarised during the course of this review.

This conceptualisation also acknowledges the role of beliefs as a factor potentially governing the individual's response to trauma. This internal representation comprises challenged beliefs about the self, world and others that may present in light of the traumatic experience, as well as pre-existing beliefs about alcohol use. This proposition is made in recognition of findings highlighting the importance of beliefs as a mediator in the development of a range of psychological disturbances including PTSD and substance misuse.

Literature documenting findings with regard to coping and self-medication are acknowledged in the "response" phase, with the dissociative outcomes of alcohol use also being noted. Finally, the effects of abstinence and continued use as described in the literature are detailed, with the individual experiencing

resurgence in symptoms on withdrawal, or an exacerbation of arousal levels as a result of continued use.

This conceptual model provides a framework to facilitate the understanding of the complex presentation of clients with comorbid trauma and substance abuse difficulties. In recognition of the fact that global models are often limited, adaptations are recommended in accordance with individual manifestations. Ultimately this model is presented with the view that further research is needed to test out its propositions.

7. SUMMARY AND CRITIQUE

7.1. *Summary*

The primary aim of this review was to consider the literature regarding temporality, functionality and susceptibility in comorbid trauma and substance misuse in a manner that informs conceptualisation. Despite inherent theoretical and methodological limitations addressed shortly, alongside a scarcity of literature documenting findings in a clinically applicable manner, there appears to be a wealth of knowledge that can aid the formulation and accurate representation of individuals comprising this population.

Literature relating to this field has gained ground in establishing some stable conclusions about the co-occurrence of these two disorders. In spite of some variance across studies in terms of strength of association, findings consistently show a significant level of comorbidity.

In addition, findings from a range of retrospective reports considering temporality indicate that in the majority of cases PTSD tends to precede the onset of any substance use disorder. On the whole evidence offers support to the concept of self-medication over and above alternative explanatory hypotheses such as the shared-vulnerability and high-risk notions of comorbid trauma and substance misuse. Consistent with this view, studies have detailed a range of affective, cognitive, physiological and behavioural motivations for the development of substance misuse following trauma.

A number of studies have also offered insight into specific biopsychosocial variables associated with the presence of comorbid trauma and substance misuse. These include structural and chemical abnormalities in the brain; reduced capacity with regard to executive function and developmental milestone attainment; anxiety-sensitivity; a history of victimization and sexual abuse; poorer social circumstance including unemployment, homelessness and unstable family background; familial history with regard to alcohol and drug abuse; history of additional axis I and II disorders; and greater interpersonal difficulties. Factors inherent to trauma exposure itself, in addition to internal mechanisms such as coping style and beliefs systems have also been identified as having the potential to govern the post-trauma response thereby priming the individual to development of PTSD and substance use difficulties. These findings not only emphasise the complexity of the relationship between trauma and substance use, but also highlight important aspects for consideration during assessment and conceptualisation.

With regard to the process of assessment, timing is an issue for contemplation. Substance use status and contextual factors may exert an influence not only on initial motivation to engage in treatment but also symptom experience and likelihood of relapse. Detailed assessment of frequency and intensity of trauma symptoms as well as knowledge regarding patterns of substance use is important, but again may be externally influenced by the setting in which assessment takes place. Clinicians should be aware of the potential for clients to under or over report symptoms due to the experience and questioning style of the assessor, perception and experience of distress, as well as fear of encountering stigmatisation. Awareness of the potential for symptom exacerbation as a consequence of assessment is paramount, as is the need to consider educational and support work during the early stages of contact. If substance use represents a maladaptive coping style used to manage symptoms, alternative strategies should be highlighted and support for implementation offered.

Evidence from the literature supports the recommendation that screening for trauma histories and substance use should routinely take place in both specialist and general mental health services. Comprehensive evaluation should facilitate the development of more detailed and accurate formulation, thereby increasing knowledge regarding the complex interaction between trauma and substance use symptoms. Such knowledge has important implications for both the structure of intervention and treatment efficacy.

7.1. Theoretical limitations

Theoretical limitations with regard to literature examining the relationship between trauma and substance misuse include the misinterpretation and overlap

of PTSD and substance misuse symptoms. Saladin et al (1995) reported considerable overlap between symptoms of substance withdrawal / dependence and PTSD symptomatology, particularly arousal and avoidance symptom clusters. Stewart et al (1998) also report that it is possible that patients with PTSD misinterpret substance withdrawal symptoms as a sign of anxiety, or that these serve as a reminder of the trauma thereby increasing arousal and motivating continued substance use. It seems possible therefore, that regular substance misuse could inflate the probability of arousal and avoidance symptoms being endorsed and thus increase the likelihood of false positive diagnoses of PTSD.

Furthermore, whilst much of the literature is concerned with establishing causality, little attention has been paid to maintenance mechanisms. Once comorbidity is established, it could be that PTSD symptoms serve to maintain substance misuse symptoms through self-medication. Conversely, active substance misuse might maintain or prolong PTSD symptoms (e.g. by interfering with the habituation to trauma) (Stewart and Conrod 2003). The earlier work of Stewart (1996) indicated that both of these processes could operate in a vicious cycle.

7.2. Methodological limitations

Studies investigating the relationship between trauma and substance misuse suffer a number of methodological flaws. Designs are largely cross-sectional, retrospective and based on self-report data. Despite offering a valuable contribution to the knowledge base, reliance on these methods alone is not adequate. Retrospective self-report as a method of data collection may in part

explain some of the discrepancies in findings. Collection of data relating to temporal order using these methods may be unreliable as participants might be inclined to report the onset of sub threshold symptoms as opposed to the initial onset of any disorder. Differences in the operational definition of variables may also prove partially accountable for contradictory results. Studies either fail to report the definition of variables under study or alternatively definitions vary so widely that true comparison is almost impossible. Furthermore, studies generally neglect to mention whether screening for additional comorbidity has taken place alongside failure to document important factors such as drinking status at time of participation or length of abstinence. In view of evidence indicating a high incidence of additional comorbidity and the potential impact of participants drinking status on results, this lack of attention seems careless. Subsequent bias in interpretation highlights a need for further prospective assessment whereby development of the disorders can be tracked over time.

In addition, substance misuse and trauma research often reports findings on specific populations such as females, age specific groups, veterans and so forth. Data obtained from these samples enhance understanding but lack generalisability. Equally, studies that investigate circumscribed events following disaster or specific types of trauma lack the potential for results to be considered more widely. Bias intrinsic to the participants involved in research also presents difficulties. Many sample populations comprise individuals seeking treatment and although it is obvious why this is so, conclusions drawn should acknowledge the potential impact on findings.

Studies examining the relationship between trauma and substance misuse are also largely quantitative. Drinking patterns and PTSD symptom constellations are very unique phenomenon and as such qualitative data may offer further insight.

As with all fields of research, evaluative comments on the reliability of data indicate room for improvement. In terms of future direction, the area of comorbid trauma and substance misuse has to date suffered from a lack of integration with regard to research, dissemination and service delivery. Traditionally, studies have considered the phenomenon from a substance misuse perspective at the expense of literature reporting substance use presentation in trauma services. Recent developments with regard to dual treatment may however, provide the opportunity to integrate future research.

At present literature remains focussed on the concept of symptom motivated substance misuse. In addition to the need to address some of the theoretical and methodological limitations noted earlier, future research should include further examination of the role of internal factors including individual schematic representation of trauma and substance use experiences. Conceptual knowledge would undoubtedly benefit from further consideration of the role of beliefs in the development of substance misuse following trauma. In addition there appears to be a lack of information regarding the role of protective factors. Investigation into social support mechanisms and timing of trauma disclosure for example, may prove useful in prevention, education and treatment.

8. REFERENCES

- Abueg, F. R., & Fairbank, J. A. (1991). Behavioral treatment of the PTSD-substance abuser: A multidimensional stage model. In P. Saigh (Ed.), Posttraumatic stress disorder: A behavioural approach to assessment and treatment (pp. 111-146). New York: Pergamon Press.
- Beck, A. T., Wright, F. D., Newman, C. F., & Liese, B. S. (1993). Cognitive therapy of substance abuse. New York: Guilford Press.
- Boyd, M. (2000). Predicting substance abuse and comorbidity in rural women. Archives of Psychiatric Nursing, 14, 2, 64-72.
- Brabant, S., Forsythe, C. J., & LeBlanc, J. B. (1997). Childhood sexual trauma and substance misuse: A pilot study. Substance Use and Misuse, 32, 10, 1417-1431.
- Brady, K. T., Dansky, B. S., Sonne, S. C., & Saladin, M. E. (1998). Posttraumatic stress disorder and cocaine dependence: Order of onset. American Journal on Addictions, 7, 128-135.
- Bremner, J. D., Southwick, S. M., Darnell, A., & Charney, D. S. (1996). Chronic PTSD in Vietnam combat veterans: Course of illness and substance abuse. American Journal of Psychiatry, 153, 369-375.

Brown, P. J., & Wolfe, J. (1994). Substance abuse and post-traumatic stress disorder comorbidity. Drug and Alcohol Dependence, 35, 51-59.

Carpenter, K. M., & Hasin, D. (1998). A prospective evaluation of the relationship between reasons for drinking and DSM-IV alcohol use disorders. Addictive Behaviors, 23, 41-46.

Carpenter, K. M., & Hasin, D. (1999). Drinking to cope with negative affect and DSM-IV alcohol use disorders: A test of three alternative explanations. Journal of Studies on Alcohol, September, 694-704.

Chilcoat, H. D., & Breslau, N. (1998a) Investigations of causal pathways between PTSD and drug use disorders. Addictive Behaviors, 23, 827-840.

Chilcoat, H. D., & Breslau, N. (1998b). Posttraumatic stress disorder and drug disorders: Testing causal pathways. Archives of General Psychiatry, 55, 913-917.

Chilcoat, H. D., & Menard, C. (2003). Epidemiological investigations: Comorbidity of posttraumatic stress disorder and substance use disorder. In P. Ouimette & P. J. Brown (Eds.), Trauma and substance abuse: Causes, consequences, and treatment of comorbid disorders (pp. 9-28). Washington DC: American Psychiatric Association.

Conger, J. J. (1951). The effects of alcohol on conflict behavior in the albino rat. Quarterly Journal of Studies on Alcohol, 12, 1-29.

Conrod, P. J., & Stewart, S. H. (2003). Experimental studies exploring functional relations between posttraumatic stress disorder and substance use disorder. In P. Ouimtte & P. J. Brown (Eds.), Trauma and substance abuse: Causes, consequences and treatment of comorbid disorders (pp. 57-71). Washington DC: American Psychiatric Association.

Cottler, L. B., Compton, W. M., Mager, D., Spitznagel, E. L., & Janca, A. (1992). Posttraumatic stress disorder among substance users from the general population. American Journal of Psychiatry, 149, 664-670.

Davidson, J. R. T., Swartz, M., Storck, M., Krishnan, R. R., & Hammet (1985) A diagnostic and family study of posttraumatic stress disorder. American Journal of Psychiatry, 142, 90-95.

Davidson, J. R. T., Kudler, H. S., Saunders, W. B., & Smith, R. D. (1990). Symptom and comorbidity patterns in World War II and Vietnam veterans with posttraumatic stress disorder. Comprehensive Psychiatry, 31, 162-170.

De Bellis M. D. (2001) Developmental traumatology: A contributory mechanism for alcohol and substance use disorders. Psychoneuroendocrinology, 27, 155-170.

Derry, A. (2000). An examination of the relationship between trauma, PTSD, coping and attributional styles in substance users. Unpublished Manuscript.

Elias, C. M. (1997). The impact of cognitive factors in the process of lapse-relapse cycling with substance abusing women. Dissertation Abstracts International: Section B: The Sciences and Engineering. Sep, 58, (3-B), 1526.

Epstein, S. (1991). Impulse control and self-destructive behavior. In L. P. Lipsitt, & L. L. Mitick (Eds.), Self-regulatory behavior and risk taking: Causes and consequences (pp. 273-284). Norwood, NJ: Ablex.

Grice, D. C., Brady, K. T., Dustan, L. R., Malcolm, R., & Kilpatrick, D. G. (1995). Sexual and physical assault history and posttraumatic stress disorder in substance dependent individuals. The American Journal on Addictions, 4, 4, 297-305.

Gurvits, T. V., Gilbertson, M. W., Lasko, N. B., Tarhan, A. S., Simeon, D., Macklin, M. L., Orr, S. P., & Pitman, R. K. (2000). Neurologic soft signs in chronic posttraumatic stress disorder. Archives of General Psychiatry, 57, 2, 181-186.

Helzer, J. E., Robins, L. N., & McEvoy, L. (1987). Post-traumatic stress disorder in the general population. New England Journal of Medicine, 317, 1630-1634.

Jacobsen, L. K., Southwick, S. M., & Kosten, T. R. (2001). Substance use disorders in patients with posttraumatic stress disorder: A review of the literature. American Journal of Psychiatry, 58, 8, 1184-1190.

Janoff-Bulman, R. (1992). Shattered assumptions: Toward a new psychology of trauma. New York: The Free Press.

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

Keane, T. M., Geradi, R. J., Lyons, J. A., & Wolfe, J. (1988). The interrelationship of substance abuse and posttraumatic stress disorders. In M. Galanter (Ed.), Recent developments in alcoholism (Vol. 6, pp. 27-48). New York: Plenum.

Kessler, R. C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. B. (1995). Posttraumatic stress disorder in the National Comorbidity Survey. Archives of General Psychiatry, 52, 1048-1060.

Khantzian, E. J. (1985). The self-medication hypothesis of addictive disorders: Focus on heroin and cocaine dependence. American Journal of Psychiatry, 142, 1259-1264.

Kosten, T. R., & Krystal, J. (1988). Biological mechanisms in posttraumatic stress disorder: Relevance for substance abuse. In M. Galanter (Ed.), Recent developments in alcoholism (Vol. 6, pp. 49-68). New York: Plenum.

MacLatchy-Gaudet, H. A., & Stewart, S. H. (2001). The context specific positive alcohol outcome expectancies of university women. Addictive Behaviors, 26, 1, 31-49.

Marlatt, G. A. & Gordon, J. R. (Eds.) (1985). Relapse prevention: Maintenance strategies in the treatment of addictive behaviours. New York: Guilford Press.

McCann, I. L., & Pearlman, L. A. (1990). Psychological trauma and the adult survivor: Theory, therapy and transformation. New York: Brunner/Mazel.

McFall, M. E., Mackay, P. W., & Donovan, D. M. (1992). Combat-related posttraumatic stress disorder and severity of substance abuse in Vietnam veterans. Journal of Studies on Alcohol, 53, 357-363.

McFarlane, A. C. (1998) Epidemiological evidence about the relationship between PTSD and alcohol abuse: The nature of the association. Addictive Behaviors, 23, 6, 813-825.

McLeod, D. S., Koenen, K. C., Meyer, J. M., Lyons, M. J., Eisen, S., True, W., & Goldberg J. (2001) Genetic and environmental influences on the relationship among combat exposure, posttraumatic stress disorder symptoms, and alcohol use. Journal of Traumatic Stress, 4, 2, 259-275.

Miller, B. A., Downs, W. R., & Testa, M., (1993). Interrelationships between victimization experiences and women's alcohol use. Journal of Studies on Alcohol, Supplement 11, 109-117.

Najavits, L. M., Weiss, R. D., & Shaw, S. R. (1997). The link between substance abuse and posttraumatic stress disorder in women. American Journal on Addictions, 6, 273-283.

Najavits, L. M., Weiss, R., & Shaw, S. R. (1999). A clinical profile of women with posttraumatic stress disorder and substance dependence. Psychology of Addictive Behaviors, 13, 98-104.

Najavits, L. M., Weiss, R. D., Shaw, S. R., & Muenz, L. R. (1998). "Seeking safety": Outcome of a new cognitive-behavioral psychotherapy for women with posttraumatic stress disorder and substance dependence. Journal of Traumatic Stress, 11, 3, 437-455.

Ouimette, P. C., Wolfe, J., & Chrestman, K. R. (1996). Characteristics of posttraumatic stress disorder – Alcohol abuse comorbidity in women. Journal of substance abuse, 8, 335-346.

Ouimette, P. & Brown, P. J. (Eds.). (2003). Trauma and substance abuse: Causes, consequences, and treatment of comorbid disorders. Washington DC. American Psychiatric Association.

Penk, W. (1993). PTSD and substance abuse: Clinical assessment considerations. Retrieved October 4, 2001 From the World Wide Web: <http://ncptsd.org/treatment/cq/v3/n3-4/penk.html>.

Penk, W. E., Peck, R. F., Robinowitz, R., Bell, W., & Little, D. (1988). Coping and defending styles among Vietnam combat veterans seeking treatment for post-traumatic stress disorder and substance use disorder. In M. Galanter (Ed.), Recent developments in alcoholism (Vol. 6, pp. 69-88). New York: Plenum.

Read, J. P., Bollinger, A. R., & Sharkansky E. (2003). Assessment of comorbid substance use disorder and posttraumatic stress disorder. In P. Ouimette & P. J. Brown (Eds.), Trauma and substance abuse: Causes, consequences, and treatment of comorbid disorders (pp. 9-28). Washington DC: American Psychiatric Association.

Roth, S., Leibowitz, L., & DeRosa, R. R. (1997). Thematic assessment of posttraumatic stress reactions. In J. P. Wilson & T. M. Keane (Eds.), Assessing psychological trauma and PTSD (pp. 513-528). New York: Guilford Press.

Ruzek, J. I., Polusny, M. A., & Abueg, F. R. (1998). Assessment and treatment of concurrent posttraumatic stress disorder and substance abuse. In V. M. Follette, J. I. Ruzek, & F. R. Abueg (Eds.), Cognitive-behavioral therapies for trauma (pp.226-255). New York: Guilford Press.

Saladin, M. E., Brady, K. T., Dansky, B. S., & Kilpatrick, D. G. (1995). Understanding comorbidity between PTSD and substance use disorders: Two preliminary investigations. Addictive Behaviours, 20, 643-655.

Sharkansky, E. J., Brief, D. J., Peirce, J. M., Meehan, J. C., & Mannix, L. M. (1999). Substance abuse patients with posttraumatic stress disorder (PTSD): Identifying specific triggers of substance use and their associations with PTSD symptoms. Psychology of Addictive Behaviors, 13, 89-97.

Steele, C. M., & Josephs, R. A., (1988). Drinking your troubles away II: An attention-allocation model of alcohol's effect on psychological stress. Journal of Abnormal Psychology, 97, 2, 196-205.

Stewart, S. H. (1996). Alcohol abuse in individuals exposed to trauma: A critical review. Psychological Bulletin, 120, 83-112.

Stewart, S. H., Achille, M., & Pihl, R. O. (1993). Alcohol dampening of the attentional bias for threat in anxiety sensitivity: Pharmacology or expectancy? Programme and Abstracts of the Annual Meeting of the Canadian Society for Brain, Behavior and Cognitive Science, 3, 55.

Stewart, S. H., Conrod, P. J., Pihl, R. O., & Dongier, M. (1999). Relations between posttraumatic stress symptom dimensions and substance dependence in a community recruited sample of substance-abusing women. Psychology of Addictive Behaviors, 13, 2, 78-88.

Stewart, S. H., Conrod, P. J., Samoluk, S. B., Pihl, R. O., & Dongier, M. (2000). Posttraumatic stress disorder symptoms and situation-specific drinking in women substance abusers. Alcoholism Treatment Quarterly, 18, 31-47.

Stewart, S. H., Pihl, R. O., Conrod, P. J., & Dongier, M. (1998). Functional associations among trauma, PTSD, and substance-related disorders. Addictive Behaviors, 23, 797-812.

Teets, J. M. (1995). Childhood sexual trauma of chemically dependent women. Journal of psychoactive drugs, 27, 3, 231-238.

Triffleman, E. (1998). An overview of trauma exposure, posttraumatic stress disorder and addictions. In H. R. Kranzler & B. J. Rounsville (Eds.), Dual diagnosis and treatment: Substance abuse and comorbid medical and psychiatric disorders (pp. 263-315). New York: Marcel Dekker.

Triffleman, E., Carroll, K., & Kellogg, S. (1999). Substance dependence posttraumatic stress disorder therapy: An integrated cognitive-behavioral approach. Journal of Substance Abuse Treatment, 17, 1-2, 3-14.

Volpicelli, J. R. (1987). Uncontrollable events and alcohol drinking. British Journal of Addictions, 82, 381-392.

Volpicelli, J., Balraman, G., Hahn, J., Wallace, H., & Bux, D. (1999). The role of uncontrollable trauma in the development of PTSD and alcohol addiction. Alcohol Research and Health, 23, 4, 256-262.

Yehuda, R., Keefe, R. S. E., Harvey, P. D., & Levengood, R. A. (1995). Learning and memory in combat veterans with posttraumatic stress disorder. American Journal of Psychiatry, 152, 137-139.

Chapter II:

Brief Report

**Examination of the Component Structure of the Beliefs
About Substance Use Inventory:
Application to Alcohol Use**

This paper has been prepared for submission to

Cognitive and Behavioral Practice

See appendix 16 for instructions for authors

ABSTRACT

The aim of the present study was to determine the component structure of the Beliefs About Substance Use inventory (Wright 1993), a self-report scale used to identify dysfunctional beliefs about substance use. Using a pooled sample comprising British student and clinical participants, principal components analysis revealed five empirically distinct components. These were subsequently labelled Negative Anticipatory Cessation Beliefs; Positive Anticipatory Beliefs about Continued Use; Permissive Beliefs; Ambivalent Dependence Beliefs and Contemplation Beliefs. Findings indicated that the BASU is able to highlight important beliefs with regard to motivations for continued use, barriers to cessation and withdrawal, perceived dependence and contemplative state. The measure is therefore considered to offer a time-efficient and effective way of assessing beliefs important in the conceptualisation and treatment of individuals who misuse substances.

1. INTRODUCTION

1.1. *Context of the BASU inventory – Cognitive theory and substance misuse*

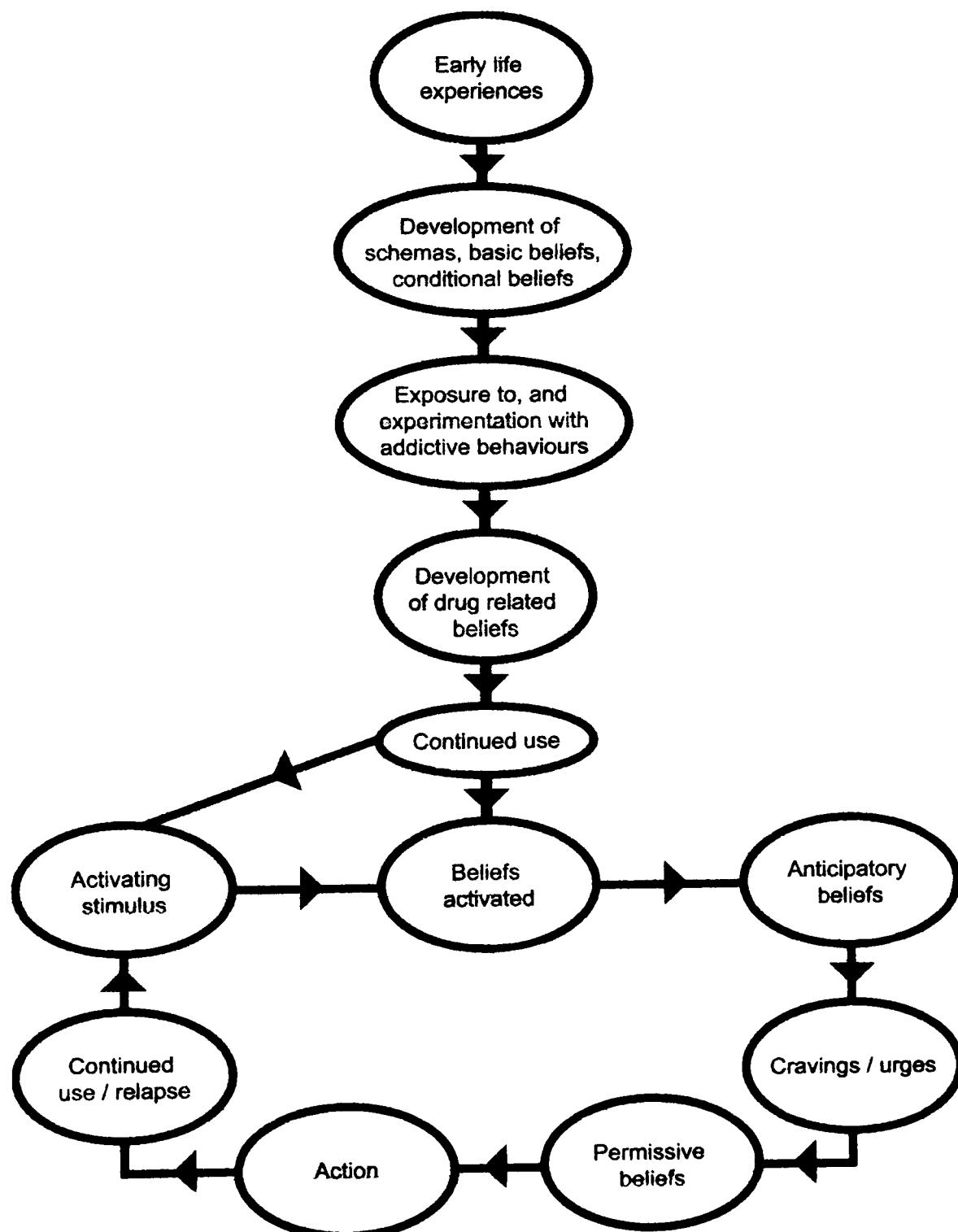
The role of beliefs in the study of addictions is of primary concern for cognitive theorists. According to Beck, Wright, Newman and Liese (1993), the ways in which individuals interpret specific situations influences their feelings, motivations and actions. These interpretations are largely determined by relevant beliefs that become activated in these specific situations. When activated these beliefs increase the likelihood of continued drug or alcohol use.

Addictive beliefs reportedly develop following exposure to and experimentation with substances. Derived from a wide range of core beliefs related to survival, achievement, autonomy, lovability and acceptability, these addictive beliefs may be considered in terms of a cluster of ideas centring on pleasure seeking, problem solving, relief and escape (also referred to as anticipatory and relief-oriented beliefs). In addition, facilitating or permission giving beliefs relevant to justification risk-taking and entitlement, as well as beliefs concerned with anticipated deprivation during abstinence or helplessness in controlling cravings, are commonly observed. When core beliefs interact with life stressors and produce a response such as anxiety, this may act as a cue for the activation of substance related beliefs with the outcome being continued use or relapse (Beck et al 1993; Liese & Franz 1996; Newman & Ratto 1999).

The cognitive model of substance misuse (see Figure 1) proposes that activation of addictive beliefs is a sequential process. In the first instance 'anticipatory beliefs' that relate to the anticipated effects of substance use (e.g. "It will be fun to

do this"), are activated. Secondly, 'relief-oriented' beliefs emerge whereby the individual is motivated to use in order to relieve discomfort of some kind (e.g. "I can't control the craving"). And finally, permissive beliefs (e.g. "I deserve it") that facilitate continued substance use arise to complete the vicious cycle.

Figure 1: Complete cognitive model of substance abuse taken from Beck et al (1993)



With regards to the cognitive assessment and treatment of substance misuse, the identification of core beliefs and automatic thoughts is integral. As well as teaching more adaptive techniques for coping with difficult situations as is the case in relapse prevention programmes (Marlatt & Gordon 1985), cognitive therapists seek to reduce the frequency and severity of substance use by uncovering, examining and re-evaluating the thoughts and beliefs that accompany urges and cravings (Beck 1995; Liese & Franz 1996; Newman & Ratto 1999; Padesky & Greenberger 1995). In addition to the use of clinical interview techniques during assessment, the administration of a range of self-report measures is also advocated (Beck et al 1993). The Beliefs About Substance Use inventory is one such measure.

1.2. *The Beliefs About Substance Use inventory (BASU) (Wright 1993; see appendix 13)*

The BASU is a self-report scale designed to facilitate the identification of a range of commonly held beliefs about substance use. Developmental and psychometric information on the tool is lacking with scoring merely reflecting the extent of dysfunctional beliefs about substance use. The measure has however been administered in the context of outcome research (Najavits, Weiss, Shaw & Muenz 1998) and to study the contribution of beliefs in relapse cycling (Elias 1997).

More usefully perhaps, the tool offers a time efficient and effective way for clinicians to identify beliefs fundamental to the cognitive assessment and treatment of substance use disorders. With this in mind, the present study seeks to examine the component structure of the BASU with a view to enhancing its clinical utility, moving beyond a total score of dysfunctional beliefs about substance use by identifying specific belief domains.

Due to the lack of information with regard to the development of the tool it is only possible to speculate as to its multifactorial content prior to analysis. In light of the propositions of cognitive theory it seems reasonable to assume that the BASU was designed in a manner consistent with the concept of addictive beliefs as described by Beck et al (1993).

2. METHOD

2.1. *Participants*

A sample of 67 students agreed to take part in this study following the random distribution of questionnaires to approximately 475 undergraduates (mean age = 24.9; SD = 9.8; male = 20; female = 47). In addition, 44 individuals in contact with a specialist substance misuse service for difficulties related to alcohol abuse (mean age = 45.9; SD = 9.0; male = 27; female = 17), also consented to participate. All participants were recruited as part of a larger project (Ashton, Garvey & Day 2003) in which they anonymously completed the Beliefs About Substance Use inventory based on the appended version presented in Beck et al (1993). Samples were combined in order that a broad spectrum of alcohol use could be represented within the analysis, and also as a means to increase the reliability of findings.

2.2. *Procedure*

Recruitment commenced following appropriate ethical approval from university and health service bodies (see appendices 1 and 2). Undergraduates were invited to take part in the study via information and questionnaire packs distributed to their university pigeonholes. Individuals recruited from the

substance misuse service consented to personal contact details being forwarded to the researcher by their keyworker. An appointment was then arranged during which consent to participate was gained and the questionnaire administered. Completion of the BASU required participants to rate items according to how much they agreed or disagreed with commonly held beliefs about substance use on a scale of 1 (totally disagree) to 7 (totally agree). The higher the total score, the greater the level of agreement with items reflecting dysfunctional beliefs about substance use.

3. RESULTS

3.1. *Principal Components Analysis*

Principal components analysis with direct oblimin rotation was used to examine the factor structure of the BASU. Oblique rotation was selected, as there was reason to assume that items would be highly correlated. Component extraction was guided by principles noted by Kaiser (1960) whereby components are identified on the basis of an eigenvalue > 1 (see Figure 1). Five components, accounting for 67% of the variance were therefore extracted.

Table 1: Details of extracted components

Component	Eigenvalue	% Variance
1	12.636	43.571
2	3.015	10.396
3	1.380	4.757
4	1.269	4.376
5	1.032	3.558

A criterion loading of $>.40$ was used as the level of component loading significance on the basis of the suggestion that $.40$ represents substantive values and is therefore appropriate for interpretive purposes (Stevens 1992). Component loadings from the rotated pattern matrix are illustrated in Table 2.

Scrutiny of the pattern matrix facilitated the following observations. Items loading onto the first component all related to beliefs about stopping and appeared consistent with the beliefs about anticipated deprivation described by Beck et al (1993) (e.g. "I could not cope with stopping", "Stopping would lead to worse problems", "Stopping would drive me crazy"). This component was therefore labeled 'Negative Anticipatory Cessation Beliefs'.

Consideration of items loading onto the second extracted component were again consistent with the concept of anticipatory beliefs but in this instance clearly related to positive experiences around substance use (e.g. "Using is a lot of fun", "Life is more fun when I use"). The second component thus became identified as 'Positive Anticipatory Beliefs about Continued Use'.

Component three comprised items largely relating to the justification of continued substance use (e.g. "Using substances releases my creativity", "I'm not a strong enough person to stop", "I can't function without it") and were considered to be consistent with the concept of permissive beliefs identified by Beck et al (1993).

Items identified as comprising the fourth component appeared to reflect a combination of concepts related to dependence, although quite clearly suggested a degree of ambivalence (e.g. "Substance use is not a problem for me", "I have to quit"). This component was consequently considered to detail 'Ambivalent

'Dependence Beliefs'. Consistent with this finding are the comments of Beck et al (1993) that described the presence of conflict beliefs. These beliefs induce a state of conflict during which the individual experiences a battle between the desire to use and the desire to be free of drugs. This ambivalence is formulated as a conflict between the beliefs "It's ok to use" and "It's not ok to use". Each belief can be activated under different circumstances or at the same time with the balance between the relative strength of each belief at the time, determining the outcome.

And finally, the fifth component which comprised two items ("The only way for me to stop is to avoid every person I used with and every place I used", "If I stop using I'll have to tackle other problems I'm not prepared to handle") was considered to reflect a degree of contemplation with regard to life without substance use, and as such was labeled 'Contemplation Beliefs'.

Table 2: Component structure (oblique rotation) of the BASU inventory*

NO.	ITEM	COMPONENT				
		1	2	3	4	5
9	I couldn't cope with stopping	.77				
11	Stopping would lead to worse problems	.70				
10	Stopping would drive me crazy	.70				
6	My life is screwed up anyway, so there is no point in stopping	.62				
13	I could not cope with withdrawal symptoms	.53				
12	If I stopped using substances the urges / cravings would be unbearable	.43				
17	Using is a lot of fun	.79				
16	Life is more fun when I use	.74				
26	I could not be social without using	.62				
3	Life without using is boring	.60				
15	I may use substance for the rest of my life	.48				
1	Using substance releases my creativity	-.72				
25	I'm not a strong enough person to stop	-.67				
5	I can't function without it	-.64				
23	I don't deserve any better than this	-.62				
20	My life won't get any better even if I stop using	-.45				
22	Life could be depressing if I stopped	-.41				
2	I could not cope as well if I stopped using	-.40				
29	Substance use is not a problem for me	-.73				
4	I have to quit	.65				
27	Having a strong negative emotion leads to an urge	.61				
7	This is the only way for me to cope with the pain	.57				
24	I can't use anymore	.57				
14	I will have overpowering urges for the rest of my life	.55				
28	I only use this much because of the stress I'm under	.44				
8	I feel better knowing it's there	.42				
19	The urges / craving makes me use	.42				
18	The only way to stop is to completely avoid every person I used with and every place I used	.93				
21	If I stop using I'll have to tackle other problems I'm not prepared to handle	.60				

* Component loadings <0.40 are excluded

4. DISCUSSION

The aim of the present study was to consider the component structure of the BASU inventory with a view to enhancing its utility as a clinical assessment tool. Principal components analysis identified five empirically distinct components subsequently labelled 'Negative Anticipatory Cessation Beliefs' (Component 1); 'Positive Anticipatory Beliefs About Continued Use' (Component 2); 'Permissive Beliefs' (Component 3); 'Ambivalent Dependence Beliefs' (Component 4) and 'Contemplation Beliefs' (Component 5).

The BASU distinctly identified beliefs alluding to the predicted negative consequences of cessation (Component 1) alternatively referred to as anticipatory beliefs and noted by Beck et al (1993) as a motivation for continued use. Consideration of items comprising Component 2 regarding positive beliefs about continued use are also consistent with the concept of anticipatory beliefs. In addition, this can be equated with the notion of positive outcome expectancies, an area that has recently received much attention in the literature. Research into outcome expectancies and alcohol consumption patterns is extensive and cannot be covered comprehensively here. Briefly however, authors have noted a strong association between positive outcome expectancy beliefs such as tension reduction, affective change, sexual enhancement and cognitive change, and continued / increased drug and alcohol use (see Jones, Corbin & Fromme 2001 for a detailed overview of the literature).

Component 3 is consistent with the notion of permissive beliefs whereby drug and alcohol use is facilitated by beliefs that justify behaviour. Observation of the process outlined in Figure 1 highlights the implications of such beliefs in the maintenance of drug and alcohol disorders. The fourth component comprises a set of ambivalent beliefs pertaining to dependence, thought to be a central component in the prediction of continued use or abstinence (Beck et al 1993).

Items in Component 5 are characterised by a degree of contemplation about life beyond substance use and how this might be broached. This is a useful finding in light of the need to address motivation to change in the treatment of substance use disorders (Miller & Rollnick 2002). It is perhaps most usefully considered in the context of the stages of change model that highlights 'contemplation' as a distinct stage prior to making any decision to change substance use (Prochaska & Di Clemente 1982).

To conclude, consideration of the components identified in this analysis can offer valuable insight into the assessment of addictive belief systems. In addition to an overall score indicating severity of dysfunctional beliefs about substances abuse the BASU is able to highlight important beliefs with regard to motivations for continued use, barriers to cessation and withdrawal, beliefs about dependence and contemplative state. The BASU offers a time-efficient and effective way of assessing beliefs important in the conceptualisation and treatment of individuals who misuse substances.

Due to the relatively small sample size of this study it would be useful to further investigate the validity and reliability of this tool as a measure of beliefs about substance use using a larger sample. In addition, consideration of the construct validity of the BASU compared to other measures such as the Addiction Beliefs Inventory (Davidson & Luke 2000) and the Drinking Expectancy Profile (Young & Oei 1990) would be advantageous. At present it seems premature to recommend changes to the administration and scoring of the BASU, but the process of conceptualisation may benefit from consideration of findings reported here.

5. REFERENCES

Ashton, V., Garvey, K., & Day, M. (2003). Investigating the role of beliefs in the relationship between trauma and alcohol abuse. Unpublished manuscript.

Beck, A. T., Wright, F. D., Newman, C. F. & Liese, B. (1993). Cognitive therapy of substance abuse. New York: Guilford Press.

Beck, J. (1995). Cognitive therapy: Basics and beyond. New York: Guilford Press.

Elias, C. M. (1997). The impact of cognitive factors in the process of lapse – relapse cycling with substance abusing women. Dissertation Abstracts International: Section B: The Sciences and Engineering. 58 (3-B): 1526.

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

Kaiser, H. F. (1960). The application of electronic computers to factor analysis. Educational and Psychological Measurement, 20, 141-151.

Liese, B. S., & Franz, R. A. (1996). Treating substance use disorders with cognitive therapy: Lessons learned and implications for the future. In P. Salkovskis (Ed.), Frontiers of Cognitive Therapy (pp. 470-508) . New York: Guilford.

Luke, D. A., Ribisl, K. M., Walton, M. A., & Davidson, W. S. (2002). Assessing the diversity of personal beliefs about addiction: Development of the addiction belief inventory. Substance Use and Misuse, 37, 1, 91-121.

Mariatt, G. A. & Gordon, J. R. (Eds.) (1985). Relapse prevention: Maintenance strategies in the treatment of addictive behaviours. New York: Guilford Press.

Miller, W. R. & Rollnick, S. (2002). Motivational interviewing: Preparing people for change (2nd Edition). New York: Guilford Press.

Najavits, L. M., Weiss, R. D., Shaw, S. R. and Muenz, L. R. (1998). Seeking safety: Outcome of a new cognitive-behavioral psychotherapy for women with posttraumatic stress disorder and substance dependence. Journal of traumatic stress, 11, 3, 437-455.

Newman, C. F., & Ratto, C. L (1999). Cognitive therapy of substance abuse. In E. T. Dowd, & L. Rugle (Eds.) Comparative treatments of substance abuse. Springer Series on Comparative Treatments for Psychological Disorders Vol. 1, pp. 96-126. New York: Springer.

Padesky, C. A. & Greenberger, D. (1995). Clinicians guide to mind over mood. New York: Guilford Press.

Prochaska, J. O. & Di Clemente, C. C. (1982). Transtheoretical therapy: Toward a more integrative model of change. Psychotherapy: Theory, Research and Practice, 19, 3, 276-288.

Stevens, J. P. (1992). Applied multivariate statistics for the social sciences (2nd Edition). Hillsdale, NJ: Erlbaum.

Wright, F. W (1993). Beliefs About Substance Use In: Beck, Wright, Newman & Liese (1993) Cognitive therapy of substance abuse. New York: Guilford Press.

Young, R., & Oei, T. (1990). Drinking expectancy profile test manual. Brisbane, Queensland: Behaviour Research and Therapy Centre.

Chapter III:

Main Empirical Paper

**Investigating the Role of Beliefs in the Relationship
Between Trauma and Alcohol Abuse**

*This paper has been prepared for submission to
Behavioural and Cognitive Psychotherapy*

See appendix 17 for instructions for authors

ABSTRACT

The fields of trauma and substance misuse research have independently identified the significance of belief systems in the development and maintenance of disorders such as PTSD and alcohol dependence. However, literature examining functional relations in comorbid trauma and substance misuse remains very much focussed on the concept of self-medication.

This study explored the role of trauma exposure, trauma symptom severity, negative posttraumatic cognitions, dysfunctional beliefs about substance use, and positive alcohol expectancies in individuals who identified trauma histories and who use alcohol. The populations examined comprised a sample of 47 undergraduate students (14 male; 33 female; mean age 24.8 years) and a sample of 39 individuals in contact with a specialist service for difficulties related to alcohol abuse (24 male; 15 female; mean age 45.7 years).

Findings from this study indicated that beliefs are an important factor for consideration in the assessment and treatment of individuals who have been exposed to trauma and who abuse alcohol. Trauma symptom severity arose as the most useful determinant of trauma beliefs, alcohol beliefs and drinking refusal self-efficacy. However, results also indicated a significant association between negative posttraumatic cognitions, alcohol expectancies and drinking refusal self-efficacy. In addition, beliefs about substance use were observed to mediate the relationship between trauma symptoms and subsequent refusal self-efficacy.

1. INTRODUCTION

1.1. Background

What role do beliefs play in an individual's experience of comorbid trauma and alcohol abuse? The fields of trauma and substance misuse research have independently identified the significance of belief systems in the development and maintenance of disorders such as PTSD (Ehlers & Clark 2000; Janoff-Bulman 1989, 1992) and alcohol dependence (Beck, Wright, Newman & Liese 1993; Marlatt & Gordon 1985; Oei & Jones 1986). With regard to the comorbid presence of trauma and alcohol abuse however, much of the research has focussed on determining temporal order of onset and mapping the self-medication effects of substances (see Ouimette & Brown 2003 for a comprehensive overview). Although these findings offer valuable insight into the functional interplay between the two disorders, the literature is devoid of research that suggests alcohol abuse occurs as a response to factors other than intolerable trauma symptomatology. To date studies have failed to formally address the role of beliefs in the relationship between comorbid trauma and alcohol abuse.

1.2. Comorbid trauma and substance misuse

Literature detailing the nature of the relationship between trauma and substance misuse has over recent years, reached a degree of consensus with regard to a number of important theoretical issues. Research has consistently noted a significant level of comorbidity between these disorders (Chilcoat & Menard 2003), whilst also identifying trauma exposure as a precursor to the onset of any substance misuse disorder (Kessler, Sonnega, Bromet, Hughes & Nelson 1995).

Studies acknowledging the concept of self-medication as the medium through which traumatised individuals come to use substances such as alcohol, are numerous (Stewart 1996; Stewart & Conrod 2003). Alcohol abuse has been observed to contribute to the regulation of trauma symptomatology by diminishing physiological arousal (Stewart, Conrod, Pihl & Dongier 1999), reducing behavioural avoidance (Sharkansky, Brief, Peirce, Meehan & Mannix 1999), suppressing negative affect (Carpenter & Hasin 1999) and impairing cognition and perception (Stewart, Achille & Pihl 1993). In addition, authors have highlighted the complexity of the relationship between trauma and substance misuse by suggesting that individuals experience greater psychological and medical morbidity and inferior levels of functioning (Ouimette & Brown 2003), as well as higher rates of rehospitalization, problematic diagnosis and treatment, and poorer treatment compliance and prognosis (Graham 1998).

1.3. The study of beliefs

Psychological exploration of the role of beliefs in the development and maintenance of psychopathology is extensive. Within trauma research, cognitive theories not only acknowledge the role of beliefs in determining the post-trauma response, but also detail a combination of belief-based processes observed to maintain posttraumatic symptomatology. Likewise, substance misuse research frequently documents the mediating role of beliefs in the instigation and continued use of drugs and alcohol whilst also identifying beliefs as an important factor determining treatment outcome.

1.3.1. Trauma beliefs

In the study of trauma, researchers have hypothesised that individual's bring to their experience of trauma, a set of pre-existing beliefs and models of the world, of others and of themselves. In the event of trauma, information that is often not compatible with these beliefs is presented to the individual. Recovery is subsequently determined by the extent to which the individual is able to successfully integrate this discrepant information into their pre-existing structures (Dalgleish 1999).

A number of theories have proposed that traumatic events produce changes in the victim's cognitions. These changes play an important role in the emotional response to trauma. Although all of these theories highlight the importance of trauma related cognitions, they vary with respect to the specific cognitions that are thought to be involved. Some identify assumptions about world benevolence and meaningfulness, as well as worthiness of the self, as susceptible to disruption following trauma (Epstein 1991; Janoff-Bulman 1989, 1992). Others have suggested that traumatic experiences lead to disturbed beliefs about safety, trust, power, esteem and intimacy (McCann & Pearlman 1990). In addition Foa and Riggs (1993), and Foa and Rothbaum (1998) have proposed that dysfunctional cognitions that have a mediating role in the development of PTSD, include the belief that the world is completely dangerous and also the belief that one's self is totally incompetent.

With regard to maintenance, PTSD symptomatology is reportedly sustained by an individual's appraisal of the event and its sequelae, in a manner that produces a sense of current threat. These appraisals are said to generate emotions such as

anxiety, anger, shame and guilt as well as arousal symptoms that in turn motivate the individual to engage in maladaptive coping strategies that may paradoxically cause an increase in symptoms (Ehlers & Clark 2000).

1.3.2. Alcohol beliefs

The concept of alcohol outcome expectancies has received much attention within the field of alcohol abuse research. Hittner (1997 pp. 298) briefly defined alcohol expectancies as representing “subjective beliefs about the extent to which alcohol will produce desired outcomes either by providing positive emotions or situations”.

In a recent review of the literature Jones, Corbin and Fromme (2001) suggested that alcohol expectancies should be regarded as structures in long term memory that impact on cognitive processes governing current and future alcohol consumption. Studies examining the impact of alcohol expectancies have reported findings suggesting that alcohol consumption levels increase in line with an increase in positive expectancies about the effects of alcohol. For example, Brown, Goldman and Christiansen (1985) reported that heavier drinking was associated with the expectations of social and physical pleasure, social assertion and tension reduction. Baldwin, Oei and Young (1993) additionally noted the concept of drinking refusal self-efficacy (DRSE), referring to a person's beliefs that he or she is able to resist or refuse alcohol at will, as a determinant of the frequency and quantity of alcohol consumption. Oei and Sweeney (1993) reported that lower DRSE beliefs predicted higher alcohol consumption, offering support to Marlatt & Gordon's (1985) proposition that in high-risk situations for

relapse, positive alcohol expectancies increase and drinking refusal self-efficacy declines.

Furthermore, cognitive theorists have identified a number of addictive beliefs reported to develop following exposure to and experimentation with, substances. These may be considered in terms of a cluster of ideas centring on pleasure seeking, problem solving, relief and escape. In addition, permission giving beliefs relevant to justification, risk-taking and entitlement, as well as beliefs concerned with anticipated deprivation during abstinence or helplessness in controlling cravings, are commonly observed (Beck, Wright, Newman & Liese 1993; Liese & Franz 1996). The sequential activation of these beliefs is said to be a primary factor in the maintenance of substance use disorders as well as relapse following periods of abstinence (Beck et al 1993; Liese & Franz 1996; Marlatt & Gordon 1985; Newman & Ratto 1999).

1.3.3. Beliefs in the study of comorbidity

Whilst literature commenting on the role of beliefs in the field of comorbid trauma and substance misuse research is lacking, curiosity has been expressed in other fields. Johnson and Gurin (1994) examined the relationship between negative affect, alcohol expectancies and alcohol related problems in individuals with comorbid alcohol abuse and depression. Expectancies were found to mediate the relationship between depressed mood and subsequent drinking leading the authors to conclude that before an individual ingests alcohol or any substance for self-medication purposes, there is an expectation that it has medicinal powers.

Furthermore, in a study investigating the role of dysfunctional beliefs in individuals who experience psychosis and use substances, Graham (1998) proposed that the beliefs an individual holds about their experience of psychosis (e.g. "People think something is wrong with me") and medication (e.g." I feel tired and flat on this medication") become associated through exposure to alcohol or drug use, with dysfunctional substance related beliefs ("I feel great and energetic when I use"). Substance use is subsequently considered to function as a compensatory strategy.

1.4. *Study aims*

Evidence from previous studies suggests that an individuals belief system is central not only to the interpretation of traumatic events and recovery following trauma, but also in determining the quantity and frequency of alcohol consumption. In view of the propositions of cognitive theory, and in recognition of these findings, investigation of the role of beliefs in the relationship between trauma and alcohol abuse seems pertinent. The present study aims to explore the role of beliefs in the relationship between trauma and alcohol abuse by addressing the following hypotheses:

1. Number of reported trauma episodes and trauma symptom severity will be greater in individuals who abuse alcohol than in students. In addition, participants from the clinical sample will report higher levels of negative posttraumatic cognitions, dysfunctional beliefs about substance use and positive alcohol expectancies, as well as decreased drinking refusal self-efficacy when compared to students.
2. Estimated weekly alcohol intake will be positively associated with number of trauma episodes, trauma symptom severity, negative posttraumatic

cognitions, dysfunctional beliefs about substance use and positive alcohol expectancies, but negatively correlated with drinking refusal self-efficacy.

3. Number of reported traumas will be positively associated with trauma symptom severity, negative posttraumatic cognitions, dysfunctional beliefs about substance use and positive alcohol expectancies, but negatively correlated with drinking refusal self-efficacy.
4. Severity of trauma symptoms will be positively associated with negative posttraumatic cognitions, dysfunctional beliefs about substance use and positive alcohol expectancies, but negatively correlated with drinking refusal self-efficacy.
5. Negative posttraumatic cognitions will be positively associated with dysfunctional beliefs about substance use and positive alcohol expectancies, but negatively correlated with drinking refusal self-efficacy.
6. Trauma symptom severity, negative posttraumatic cognitions and dysfunctional substance use beliefs will be predictive of drinking refusal self-efficacy.

2. METHOD

2.1. Design

This study is a cross-sectional survey investigating the role of beliefs in the relationship between trauma and alcohol abuse. Participants comprised a sample of undergraduate students and a sample of individuals in contact with a specialist substance misuse service for difficulties associated with alcohol abuse (hereafter referred to as the student and clinical samples). Demographic and descriptive data for individual samples are presented, as are results of statistical analyses.

2.2. Measures

All participants were invited to complete a range of self-report measures presented in the following order:

2.2.1. Demographic information form (see appendix 10).

Information was requested regarding age, gender, marital status, ethnic origin and estimated weekly alcohol consumption, in addition to a number of other demographic details.

2.2.2. Posttraumatic Diagnostic Scale (PTDS – Foa, 1995; see appendix 11).

The 49-item PTDS was used in this instance to assess trauma exposure history and extent of PTSD symptomatology. In addition to requesting information with regard to history of exposure to ten traumatic situations and indication of the most distressing, the measure also has 17 items that consider re-experiencing, avoidance and arousal symptoms over the past month. Items are scored on a 4-point scale ranging from not at all / only one time to almost always / five or more times a week. Severity is established by summing the scores for all 17 items. The scale has been used with both clinical and non-clinical samples and is regarded as a useful tool for screening and assessing current PTSD in clinical and research settings (Foa, Cashman, Jaycox & Perry 1997). The PTDS has demonstrated good internal consistency (0.78-0.92), good test-retest reliability (0.77-0.81) and convergent validity with the structured clinical interview for diagnosis (0.65) and IES-R (0.78) (Foa, Cashman, Jaycox & Perry 1997; Foa, Riggs, Dancu and Rothbaum 1993).

2.2.3. Posttraumatic Cognitions Inventory (PTCI – Foa, Ehlers, Clark, Tolin & Orsillo 1999; see appendix 12).

Items from this measure have been derived from clinical observations and current theories of post trauma psychopathology. The questionnaire contains 33-items that comprise 3 factors including negative cognitions about the self, negative cognitions about the world and self-blame. Respondents are asked to indicate on a 7 point scale how much they agree or disagree with each statement (totally disagree to totally agree). The measure has been found to have good internal consistency (0.86-0.97), good test-retest reliability (0.74-0.89) and moderate to high convergent validity with the Personal Beliefs and Reactions Scale (PBRS) (0.50-0.85). The measure has also been found to show high specificity in identifying PTSD cases.

2.2.4. Beliefs About Substance Use inventory (BASU – Wright 1993; see appendix 13).

This scale is a self-report tool scored on a scale of 1 to 7 (totally agree to totally disagree) according to how much an individual agrees or disagrees with statements noting commonly held beliefs about substance use. The questionnaire lacks information with regard to its development and psychometric properties, but has been used as a means to elicit information regarding specific beliefs about substance use (Najavits, Weiss, Shaw & Muenz 1998) and to study the contribution of beliefs in relapse cycling (Elias 1997).

2.2.5. Drinking Expectancy Profile (DEP – Young & Oei 1990; see appendix 14).

The Drinking Expectancy Profile (DEP) consists of two subtests. Firstly, the Drinking Expectancy Questionnaire (DEQ), a 43-item self-report questionnaire

requiring participants to respond to items according to their personal beliefs about drinking using a five-point scale (strongly disagree to strongly agree). This is subsequently broken down into six factors related to assertion, affective change, dependence, sexual enhancement, cognitive change, and tension reduction. And secondly, the Drinking Refusal Self-Efficacy Questionnaire (DRSEQ) a 31-item self-report instrument designed to assess individual's beliefs about their ability to refuse alcohol in certain situations. Responses are scored according to a six-item scale (I am very sure I could resist drinking to I am very sure I could not resist drinking) and are again broken down into three factors related to social pressure, emotional relief and opportunistic drinking. In combination, scores on both measures elicit a nine-factor profile that can be used to evaluate drinking expectancies. The DEP is reported to have good internal consistency (DEQ 0.58-0.86; DRSEQ 0.87-0.95) and good test-retest reliability (DEQ 0.61-0.88; DRSEQ 0.89-0.93).

2.3. *Procedure*

Ethical approval was obtained from the relevant university and health service bodies prior to the recruitment of participants (see appendices 1 and 2). Undergraduate students were subsequently invited to take part via information and questionnaire packs distributed to their university pigeonholes (see appendices 3, 5, 7, 11-14). Criteria for inclusion merely maintained that participants should be enrolled on an undergraduate course at the identified research site.

Inclusion criteria for the clinical sample were more stringent and required participants to:

- Have ongoing contact with a specialist substance misuse service.
- Be primarily alcohol dependent.
- Be aged between 18 and 70.
- Be of fixed abode and living in the community.

Participants who fulfilled these criteria were in the first instance approached by their clinical keyworker and provided with an introductory letter and 'Consent to be Contacted' form (see appendix 4). Following submission of contact details, participants were invited to attend an appointment with the researcher during which more detailed information about the project was presented (see appendix 6). Further consent to participate was sought (see appendix 8) and options regarding the completion of questionnaires were discussed. The majority of participants completed the necessary measures at the appointment, although some preferred to return questionnaires by post following completion at home. Following participation a letter was forwarded with the consent of the participant, to all General Practitioners notifying them of patient involvement (see appendix 9).

2.4. Participants

Initially a sample of 121 participants agreed to take part in the study (students = 73; clinical sample = 48). Of this sample 47 students and 39 participants from the clinical sample, who noted having experienced at least one traumatic event were included in statistical analyses.

3. RESULTS

3.1. Demographic data

Demographic data for samples are presented in Table 1. Analysis of demographic data using a one-way ANOVA revealed that groups were significantly different in relation to age ($F (1, 84) = 107.27, p = 0.001$), sex ($F (1, 84) = 9.47, p = 0.01$), and estimated weekly alcohol consumption ($F (1, 83) = 139.64, p = 0.001$). In light of these findings, hypothesis testing was carried out in samples independently.

Table 1: Sample demographics

		Student sample (N = 47)	Clinical sample (N = 39)
Mean age (SD)		24.8 (9.4)	45.7 (9.2)
Sex (%)	Male	14 (29.8)	24 (61.5)
	Female	33 (70.2)	15 (38.5)
Ethnicity (%)	White	43 (91.4)	38 (97.4)
	Asian	2 (4.2)	1 (2.6)
	Afro-Caribbean	1 (2.1)	0
	Other	1 (2.1)	0
Estimated weekly alcohol intake (SD)		14.3 (15.1)	204 (108.1)

3.2. Descriptive statistics

Means and standard deviations for completed measures were calculated for student and clinical samples. Table 2 illustrates the frequency of exposure to a range of traumatic events identified by the PTDS.

Table 2: Trauma exposure data

PTDS item	Student sample %	Clinical sample %
1. Serious accident, fire or explosion	23.4	46.2
2. Natural disaster	4.3	2.6
3. Non-sexual assault by family member or someone you know	10.6	38.5
4. Non-sexual assault by a stranger	25.5	33.3
5. Sexual assault by a family member or someone you know	17.0	25.6
6. Sexual assault by a stranger	8.5	15.4
7. Military combat or a war zone	8.5	7.7
8. Sexual contact when younger than 18 with someone 5+ years older	29.8	25.6
9. Imprisonment	2.1	12.8
10. Torture	2.1	5.2
11. Life-threatening illness	29.8	25.6
12. Other traumatic event	44.0	79.5
Mean no. reported traumas (SD)	2.1 (1.4)	3.9 (2.7)

Students most frequently reported having been exposed to life-threatening illness (29.8%); sexual contact when younger than 18 with someone five or more years older (29.8%); and non-sexual assault by a stranger (25.5%). Just under half of all students sampled (44%) also reported having experienced traumas other than those listed by the questionnaire. Mean number of reported traumas for students was 2.1 (SD 1.4). Respondents from the clinical sample most frequently reported a history of exposure to serious accident, fire or explosion (46.2%); non-sexual assault by a family member or someone you know (38.5%); and non-sexual assault by a stranger (33.3%). In addition, the majority of participants from the clinical sample (79.5%) reported having experienced traumas other than those

listed. Mean number of reported traumas for participants in the clinical sample was 3.9 (SD 2.7).

Table 3 summarises data from the PTDS indicating trauma symptom severity and number of areas of daily living affected by trauma.

Table 3: Trauma symptom severity data

Item	Student Mean (SD)	Clinical Mean (SD)
Severity of re-experiencing symptoms	3.4 (3.6)	7.1 (4.6)
Severity of avoidance symptoms	3.9 (4.1)	9.3 (4.8)
Severity of arousal symptoms	3.1 (3.3)	8.9 (4.5)
Total symptoms severity	10.4 (9.6)	25.3 (12.0)
No. of areas of daily functioning affected	2.0 (2.5)	4.5 (2.5)

With regard to the student sample severity of avoidance symptoms (3.9; SD 4.1) was marginally greater than that reported for re-experiencing symptoms (3.4; SD 3.6), followed by arousal symptoms (3.1; SD 3.3). In the case of participants from the clinical sample avoidance symptoms were rated as the most severe (9.3; SD 4.8), followed by arousal (8.9; SD 4.5) and then re-experiencing symptoms (7.1; SD 4.6). Overall respondents in the clinical sample reported total symptom severity approximately two times greater than that of the student sample.

Scores obtained from the PTCI relating to negative cognitions about the self, negative cognitions about the world, and self-blame, are presented in Table 4.

Table 4: Negative posttraumatic cognitions data

Subscale	Student Mean (SD)	Clinical Mean (SD)
Negative cognitions about the self	42.8 (22.3)	77.8 (30.4)
Negative cognitions about the world	25.0 (10.1)	33.3 (11.7)
Self-blame	11.8 (7.7)	16.2 (9.1)
PTCI total	79.5 (33.4)	125.0 (44.7)

Data indicated that negative cognitions about the self were rated higher than negative cognitions about the world and self-blame for participants in both student (42.8; SD 22.3) and clinical samples (77.8; 30.4). Total scores on the PTCI indicated that the clinical sample (125.0; SD 44.7) reported more negative cognitions overall than the student sample (79.5; SD 33.4).

Table 5 summarises data pertaining to alcohol beliefs and drinking refusal self-efficacy. Total scores from the BASU in addition to scores from the DEQ and DRSEQ subscales are presented.

Table 5: Substance use beliefs, expectancies and refusal self-efficacy data

Subscale	Student Mean (SD)	Clinical Mean (SD)
BASU total	58.5 (27.2)	95.0 (38.9)
DEQ assertion	32.9 (9.2)	36.7 (8.6)
DEQ affective change	44.9 (11.4)	64.7 (13.2)
DEQ dependence	13.4 (5.6)	28.1 (5.2)
DEQ sexual enhancement	16.7 (4.2)	14.8 (4.8)
DEQ cognitive change	6.8 (2.2)	8.3 (3.8)
DEQ tension reduction	10.4 (4.2)	13.1 (4.3)
DEQ total	105.0 (23.0)	141.8 (18.0)
DRSEQ social pressure	51.3 (13.5)	51.4 (19.2)
DRSEQ emotional relief	57.0 (9.7)	39.4 (18.4)
DRSEQ opportunistic	44.7 (4.9)	36.6 (12.1)
DRSEQ total	152.4 (24.0)	127.5 (47.0)

Participants from the clinical sample endorsed items on the BASU more highly than respondents from the student sample (clinical 95.0; SD 38.9, student 58.5; SD 27.2). For both groups scores on the DEQ were highest for the subscale relating to affective change (student 44.9; SD 11.4, clinical 64.7; SD 13.2). Clinical participants scored higher than students on all other subscales apart from that which considered sexual enhancement (student 16.7; SD 4.2, clinical 14.8; SD 4.8).

With regard to drinking refusal self-efficacy, students reported greatest self-efficacy in situations where drinking is motivated by a desire for emotional relief (57.0; SD 9.7), closely followed by refusal self-efficacy in situations where individuals may be motivated to drink due to social pressure (51.3; SD 13.5). Students reported decreased refusal self-efficacy in relation to opportunistic

drinking (44.7; SD 4.9). Participants from the clinical sample reported greatest refusal self-efficacy in relation to social pressure (51.4; SD 19.2). Decreased refusal self-efficacy was noted in situations where emotional relief is sought and opportunity to drink is high (emotional relief 39.4; SD 18.4, opportunistic 36.6; SD 12.1).

Analysis of data for the student sample revealed that data was not normally distributed and as such violated the assumptions of ANOVA. Mann Whitney U tests were therefore conducted in order to establish the extent of difference between groups. Results are summarised in Table 6.

Table 6: Mann Whitney U tests

	Student sample mean rank	Median	Range	Clinical sample mean rank	Median	Range	Sig.
Weekly alcohol consumption	23.71	9.7	72.0	65.7	196.0	406.0	0.000
Total trauma episodes	34.23	2.0	5.0	54.6	3.0	11.0	0.000
Severity of trauma symptoms	30.44	8.0	42.0	58.5	26.0	47.0	0.000
PTCI total	30.39	72.5	163.0	55.1	121.0	202.2	0.000
BASU total	30.39	55.5	123.0	54.3	91.5	183.0	0.000
DEQ total	25.18	107.0	139.0	60.3	140.5	94.0	0.000
DRSEQ total	34.79	154.5	78.0	47.3	125.5	159.0	0.018

Mann Whitney U tests revealed a significant difference between groups on all of the measures administered.

3.3. Statistical analyses

Pearson's correlation was selected for analysis of the clinical data as tests of normality revealed that data was normally distributed. In contrast Spearman's correlation was used in the analysis of the student data as similar testing indicated that scores were significantly different from the normal distribution. In addition to the use of correlation, multiple regression was used to further investigate the relationship between variables in the clinical sample. Mediation analysis was also undertaken in order to consider the extent to which beliefs about substance use may account for the relationship between trauma symptom severity and drinking refusal self-efficacy scores.

3.3.1. Correlation

Table 7 illustrates the results of correlation analysis for the student sample.

Table 7: Spearman's correlation matrix 1 - student sample (N = 46)

	Weekly alcohol intake	Total trauma episodes	Severity of trauma symptoms	PTCI total	BASU total	DEQ total	DRSEQ total
Weekly alcohol intake							
Total trauma episodes		-.19					
Severity of trauma symptoms	-.26		.49**				
PTCI total	.03		.33*	.69**			
BASU total	.18		-.02	.22	.44**		
DEQ total	.60**		.02	.08	.29	.36*	
DRSEQ total	-.45**		.18	-.08	-.22	-.49**	-.50**

* Indicates correlation is significant at the .05 level (1-tailed)

** Indicates correlation is significant at the .01 level (1-tailed)

Table 7 shows that weekly alcohol consumption in students was significantly positively correlated with drinking expectancies and significantly negatively correlated with drinking refusal self-efficacy. In relation to hypothesis two, total number of trauma episodes was significantly correlated with severity of trauma symptoms ($p = 0.01$) and negative posttraumatic cognitions ($p = 0.05$) only.

In addition, severity of trauma symptoms was significantly positively correlated with negative posttraumatic cognitions ($p = 0.01$), whilst no association was observed between severity of trauma symptoms, substance use beliefs and

alcohol expectancies. Results presented in Table 7 also revealed that negative posttraumatic cognitions were positively associated with beliefs about substance use ($p = 0.01$). However, drinking expectancies and drinking refusal self-efficacy scores were not significantly associated with negative posttraumatic cognition scores.

Table 8 shows the results of correlation analysis for the clinical sample.

Table 8: Pearson's correlation matrix 1 - clinical sample (N = 39)

	Weekly alcohol intake	Total trauma episodes	Severity of trauma symptoms	PTCI total	BASU total	DEQ total	DRSEQ total
Weekly alcohol intake							
Total trauma episodes	-.04						
Severity of trauma symptoms	.03	.33*					
PTCI total	-.01	.31	.58**				
BASU total	-.09	.25	.54**	.50**			
DEQ total	.24	-.20	.34*	.31	.45**		
DRSEQ total	-.09	-.23	-.68**	-.51**	-.64**	-.33*	

* Indicates correlation is significant at the .05 level (1-tailed)

** Indicates correlation is significant at the .01 level (1-tailed)

In contrast to findings for the student sample, results of analysis for the clinical sample illustrated in Table 8 did not reveal any significant associations between

measure total scores and weekly alcohol consumption. However, total number of trauma episodes was significantly positively correlated with the severity of trauma symptoms ($p = 0.05$), but not with negative posttraumatic cognitions or substance use beliefs and alcohol expectancies.

Results for the clinical sample presented in Table 8 also indicated that total trauma symptom severity was positively correlated with negative posttraumatic cognitions ($p = 0.01$) as well as substance use beliefs ($p = 0.01$) and alcohol expectancies ($p = 0.05$). Severity of trauma symptoms was also significantly negatively correlated with drinking refusal self-efficacy scores ($p = 0.01$). In addition, negative posttraumatic cognition scores in the clinical sample were positively correlated with beliefs about substance use ($p = 0.01$), and negatively correlated with drinking refusal self-efficacy ($p = 0.01$). There was no association observed between PTCI and DEQ scores.

3.3.2. Multiple regression

In the interests of enhancing the clinical applicability of results, and in view of the absence of findings with regard to factors associated with alcohol intake in the clinical sample, contemplation of an alternative outcome variable took place. If the focus of substance use assessment and intervention is considered, it is reasonable to assume that abstinence from alcohol is a primary objective. This being the case, factors such as perceived drinking refusal self-efficacy seem pertinent in predicting favourable results. Consequently multiple regression was conducted in order to discover the predictive power of variables in relation to drinking refusal self-efficacy.

Due to the small sample size only a limited number of variables could be entered into the analysis. Variables with the highest correlations ($p = 0.01$) were retained and entered into a stepwise regression. This method was selected due to the exploratory nature of the study. Having met the criteria for selection ($p = 0.01$), total severity of trauma symptoms, PTCI total scores and BASU total scores were entered into the analysis as predictor variables. Results of the stepwise regression are illustrated in Table 9.

Table 9: Multiple regression analysis

Variables	Adjusted R Square	Beta	T	Sig.
Total severity of trauma symptoms	.45	-.47	-3.5	.001
BASU total	.54	-.38	-2.8	.007

The table omits results for the PTCI total variable as this was excluded during the course of analysis due to its lack of predictive utility ($p = .858$). Of the remaining variables total severity of trauma symptoms accounted for 46% of the variance in drinking refusal self-efficacy scores ($F (1, 35) = 30.35; p = 0.000$), this increased to 54% when the BASU predictor variable was added ($F (2, 34) = 22.33; p = 0.000$). The results indicated that total trauma symptom severity is a better predictor of drinking refusal self-efficacy than beliefs about substance use.

3.3.3. Mediation analysis

The mediator function of a given variable, which represents the generative mechanism through which the focal independent variable exerts an influence on the dependent variable of interest, was considered in accordance with guidelines published by Baron and Kenny (1986). Testing for mediation involves the estimation of the following three equations:

1. Regression of the mediator onto the independent variable.
2. The independent variable must be shown to affect the dependent variable.
3. The mediator must affect the dependent variable.

If these conditions hold in the predicted direction, then the effect of the independent variable on the dependent variable must be less in the third equation than in the second. Results of mediation analysis are presented in **Table 10**.

Table 10: Mediation analysis

	Equation	Beta	Significance
Mediator	→ IV	0.54	0.001
DV	→ IV	-.68	0.000
DV	→ IV → Mediator	-.47 -.38	0.001 0.007

In addition to the finding that total trauma symptom severity directly predicted total scores on the DRSEQ, analysis revealed that dysfunctional beliefs about substance use also mediated the relationship between trauma symptom severity and drinking refusal self-efficacy.

4. DISCUSSION

4.1. Student population

Firstly, taking into consideration results of analysis for the student sample, findings indicated that just over half of the students sampled initially, identified

having experienced at least one traumatic event (64.4%). Of those subsequently included in statistical analyses, a small proportion fulfilled all DSM-IV (1994) criteria for posttraumatic stress disorder (8.2%).

Following comparison of differences between groups, students were observed to have lower scores on all of the measures administered. This indicated that in comparison to participants from the clinical sample, they reported less trauma exposure, experienced less severe trauma symptoms, held less negative posttraumatic cognitions and dysfunctional beliefs about substance use, as well as fewer positive drinking expectancies. Students also reported higher overall drinking refusal self-efficacy.

In addition, correlation analysis of data regarding weekly alcohol consumption in students, revealed a significant association between alcohol expectancy and drinking refusal self-efficacy scores on the DEP. This finding is consistent with research highlighting drinking expectancies as a factor determining frequency and quantity of alcohol consumption (Baldwin, Oei & Young 1993; Brown, Goldman & Christiansen 1985). In contrast, trauma related variables were not significantly related to reported rates of weekly alcohol consumption. This finding suggested that students who have been exposed to traumatic events do not experience an increase in weekly alcohol consumption in relation to the number of traumas experienced, trauma symptom severity and negative posttraumatic cognitions. This is a reasonable conclusion given that the sample comprised individuals who on the whole were not identified as having a substance misuse disorder, and whose trauma histories and symptom experience were not reported to constitute a significant impairment in functioning.

Number of traumas reported by students was significantly correlated with the severity of trauma symptoms experienced and the level of negative posttraumatic cognitions held. These findings suggested a gradient effect between trauma exposure symptom severity and negative posttraumatic cognitions. However, no such association was observed between the number of reported trauma episodes and substance use beliefs and alcohol expectancies.

Severity of trauma symptoms was considered in relation to posttraumatic cognitions, dysfunctional beliefs about substance use and alcohol expectancies. Trauma symptom severity was significantly positively related to the level of negative posttraumatic cognitions, but not substance use beliefs and alcohol expectancies. The former result is consistent with research identifying the impact of trauma on an individual's beliefs system (Epstein 1991; Foa & Riggs 1993; Foa & Rothbaum 1998; Janoff-Bulman 1989, 1992; McCann & Pearlman 1990), as well as the gradient effect observed during the testing of hypothesis two. The fact that trauma symptom severity was not correlated with substance use beliefs and alcohol expectancies may again reflect characteristics of the sample indicating reduced levels of symptom severity and drinking expectancies compared to participants from the clinical sample.

Negative posttraumatic cognitions were significantly positively associated with dysfunctional beliefs about substance use, whilst consideration of variables relating to trauma symptom severity, negative posttraumatic cognitions, beliefs about substance use and alcohol expectancies, indicated a significant positive relationship between negative posttraumatic cognition scores and trauma symptom severity only. This finding suggested that symptom severity in students

did not impact on alcohol beliefs and expectancies and may reflect differences inherent to the clinical and non-clinical populations used. Student expectancies about alcohol may be less oriented towards the self-medication of trauma symptoms as they may have a more extensive repertoire of coping strategies available.

4.2. Clinical population

With regard to the clinical sample the majority of initial participants reported exposure to at least one traumatic event (82.1%), with just under half of those fulfilling all DSM-IV (1994) criteria for posttraumatic stress disorder (43.8%). This observation indicated that trauma prevalence in the clinical sample was higher than that in the student sample. This finding is consistent with research identifying the presence of trauma histories amongst individuals who abuse alcohol (Jacobsen, Southwick & Kosten 2001).

As mentioned previously comparison of differences between groups indicated that participants from the clinical sample scored higher on all of the measures administered, when compared to students. This observation indicated that they experienced greater trauma exposure, more severe trauma symptoms, more negative posttraumatic cognitions and dysfunctional beliefs about substance use, as well as more positive drinking expectancies and decreased drinking refusal self-efficacy.

In contrast to findings from the student sample, no significant associations were observed between weekly alcohol consumption, number of trauma episodes, symptom severity, negative posttraumatic cognitions, or beliefs and expectancies

about alcohol. This finding led to further consideration of sample characteristics, and subsequently to the conclusion that the degree of deviation from the mean with regard to alcohol intake in the clinical sample, indicated that the population was not homogenous ($SD = 108.1$) thereby reducing the likelihood of significant correlations between variables. This finding is consistent with the comments of Liese and Franz (1996) who stated that the psychology of addictions is complicated by the fact that individuals with substance use disorders comprise a heterogeneous group who differ in the substances they use, in their patterns of use and in their personality and socioeconomic characteristics.

Consideration of results for the clinical sample revealed a similar gradient effect to that of the student sample in relation to number of trauma episodes and severity of trauma symptoms. However, in this instance no association was observed between number of trauma episodes and negative posttraumatic cognitions. This finding is of interest in light of those obtained for the student sample. In addition, results of analysis testing the association between numbers of reported traumas, substance use beliefs, and alcohol expectancies were consistent with those observed in the student sample. Number of reported traumas was not found to be related to any of the alcohol belief measures. These results suggested that for individuals with significant trauma histories who abuse alcohol, extent of trauma history is not a useful indicator of trauma and alcohol beliefs. Further research is recommended in order to clarify this result.

Results of analysis considering the impact of trauma symptom severity on negative posttraumatic cognitions, substance use beliefs and alcohol expectancies, revealed that symptom severity was significantly correlated with all

measures of trauma and substance use beliefs. This finding contrasted with those observed in the student sample, and offers support to the proposition noted earlier, suggesting that the lack of association between variables in the student sample may be due to reduced levels of symptom severity and drinking expectancies when compared to individuals who abuse alcohol.

Findings for the clinical sample are of particular importance. They imply that individuals who encounter significant trauma symptomatology and who abuse alcohol not only experience a change in self, world and other cognitions as proposed by writers such as Epstein (1991), Janoff-Bulman (1989, 1992), Foa and Riggs (1993), and Foa and Rothbaum (1998), but also experience an impact on their beliefs and expectancies about alcohol as well as perceived drinking refusal self-efficacy. In addition, results demonstrated a significant association between negative posttraumatic cognitions, drinking expectancies and drinking refusal self-efficacy in participants from the clinical sample. These findings highlighted the significance of trauma beliefs in determining drinking expectancies and drinking refusal self-efficacy.

Results from the regression analysis indicated that trauma symptom severity was a better predictor of drinking-refusal self-efficacy than beliefs about substance use. This observation offers further support to the recommendation that screening for the presence of trauma histories in individuals who abuse alcohol should take place in both substance misuse and trauma service settings (Read, Bollinger & Sharkansky 2003). The finding also demonstrates the impact of trauma symptoms on subsequent beliefs about alcohol and drinking refusal self-efficacy. Further investigation using mediation analysis also indicated that beliefs

about substance use play a role in mediating the relationship between trauma symptom severity and drinking refusal self-efficacy.

4.3. *Limitations*

This study was limited in terms of sample size and as such results of statistical analysis should be treated with caution. Research utilising a much larger sample would have added to the power of the statistical results obtained whilst also facilitating consideration of potential relationships that did not arise during the course of this analysis. A further limitation of this study was the difference in sample characteristics. If a more suitable control had been available it may have been possible to statistically consider the extent of difference in the results obtained for each sample.

Issues of selection bias should also be noted. Students and participants from the clinical sample who consented to participate may have been motivated to do so due to recognition of personal issues related to trauma or alcohol use. This bias in selection means that trauma prevalence and alcohol consumption statistics reported here, should not be taken to reflect general prevalence and consumption rates in the education and health service bodies involved in recruitment. Furthermore, due to inclusion criteria stating that individuals approached regarding participation in the clinical sample should not be considered vulnerable to further distress as a consequence of participation, those individuals who had experienced the most significant trauma histories and symptomatology may have been excluded. The clinical sample may therefore not fully reflect the extent of trauma exposure and symptom severity experienced by individuals who abuse alcohol.

Additionally, the cross-sectional design and self-report measures utilised in this study are another potential limitation. Despite research indicating that self-report can be a reliable means to gather information regarding alcohol consumption levels (Chermack, Singer & Beresford 1998; O' Hare, Bennett, Leduc 1991), the extent to which self-report estimates of weekly alcohol consumption truly reflected the quantity and frequency of drinking in this study, is not known. In addition, criticisms raised in relation to the measurement of symptoms in individuals with comorbid trauma and alcohol abuse should also be acknowledged. The extent of exposure and severity of symptoms noted during the course of study may have been affected by factors such as overlapping symptoms (Saladin, Brady, & Dansky 1995), influential contextual factors inherent to participants, or stigma and shame associated with the reporting of trauma histories (Read, Bollinger, & Sharkansky 2003). These may have consequently increased or decreased the rates of symptoms reported.

4.4. Clinical implications

Findings from this study have a number of implications for clinical practice. In the clinical sample, the observation that trauma symptom severity was not only associated with all measures of trauma and alcohol beliefs, but was also predictive of drinking refusal self-efficacy highlights the need to identify and consider the presence of trauma symptomatology in individuals who abuse alcohol. Results from this study supported the view that screening for trauma should be a fundamental element in the assessment and treatment of substance misuse disorders.

In addition, the finding that negative posttraumatic cognitions were associated with drinking expectancies and refusal self-efficacy, and that beliefs about substance use mediated the relationship between trauma symptom severity and refusal self-efficacy, suggested that beliefs are an important factor in determining alcohol use and treatment outcome in individuals with comorbid trauma and alcohol abuse. Evaluation of trauma symptomatology and beliefs about alcohol and trauma following the event should therefore be considered an integral part of the assessment and treatment of individuals with comorbid trauma and alcohol abuse.

4.5. *Conclusions and directions for future research*

Whilst the results of this research must be treated with caution, they do provide some preliminary data on the role of beliefs in the relationship between trauma and alcohol abuse. Findings reported during the course of this study have indicated that beliefs are an important consideration in the assessment and treatment of individuals who have experienced trauma and who abuse alcohol. Of all the trauma variables under investigation, symptom severity arose as the most useful determinant of trauma beliefs, substance use beliefs and drinking refusal self-efficacy. However, results also highlighted the contribution of negative posttraumatic cognitions in relation to drinking expectancies and refusal self-efficacy. In addition, beliefs about substance use were observed to mediate the relationship between trauma symptoms and subsequent refusal self-efficacy. Taken together, these findings not only demonstrate the presence of a relationship between trauma, beliefs and alcohol abuse, but also highlight the complex nature of these associations. Ongoing research is needed in order to further clarify findings reported here. Studies utilising larger samples would

facilitate the use of alternative statistical methods such as path analysis and structural equation modelling. These approaches would offer the opportunity to construct models depicting the role of beliefs in the relationship between trauma and alcohol abuse.

5. REFERENCES

American Psychiatric Association (1994). Diagnostic and Statistical Manual of Mental Disorders (4th Edition). Washington, DC: American Psychiatric Association.

Baldwin, A. R., Oei, T. P. S., & Young, R. (1993). To drink or not to drink: The differential role of alcohol expectancies and drinking refusal self-efficacy in quantity and frequency of alcohol consumption. Cognitive Therapy and Research, 17, 6, 511-530.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51, 6, 1173-1182.

Beck, A. T., Wright, F. D., Newman, C. F., & Liese, B. S. (1993). Cognitive therapy of substance abuse. New York: Guilford Press.

Brown, S. A., Goldman, M. S., & Christiansen, B. A. (1985). Do alcohol expectancies mediate drinking patterns of adults? Journal of Consulting and Clinical Psychology, 53, 512-519.

Carpenter, K. M., & Hasin, D. (1999). Drinking to cope with negative affect and DSM-IV alcohol use disorders: A test of three alternative explanations. Journal of Studies on Alcohol, September, 694-704.

Chermack, S. T., Singer, K., & Beresford, T. P. (1998). Screening for alcoholism among medical inpatients: How important is corroboration of patient self-report? Alcoholism: Clinical and Experimental Research, 22, 7, 1393-1398.

Chilcoat, H. D., & Menard, C. (2003). Epidemiological investigations: Comorbidity of posttraumatic stress disorder and substance use disorder. In P. Ouimette & P. J. Brown (Eds.), Trauma and substance abuse: Causes, consequences, and treatment of comorbid disorders (pp. 9-28). Washington DC: American Psychiatric Association.

Dalgleish, T. (1999). Cognitive theories of post-traumatic stress disorder. In W. Yule (Ed.), Post-Traumatic Stress Disorders: Concepts and Therapy. Chichester, England: John Wiley & Sons.

Ehlers, A., & Clark, D. M. (2000). A cognitive model of persistent posttraumatic stress disorder. Behaviour Research and Therapy, 38, 319-345.

Elias, C. M. (1997). The impact of cognitive factors in the process of lapse-relapse cycling with substance abusing women. Dissertation Abstracts International: Section B: The Sciences and Engineering. Sep, 58, (3-B), 1526.

Epstein, S. (1991). Impulse control and self-destructive behavior. In L. P. Lipsitt, & L. L. Mitick (Eds.), Self-regulatory behavior and risk taking: Causes and consequences (pp. 273-284). Norwood, NJ: Ablex.

Foa, E. B. (1995). Posttraumatic Diagnostic Scale. Minneapolis, USA. National Computer Systems Inc.

Foa, E. B., Cashman, L., Jaycox, L., & Perry, K. (1997). The validation of a self-report measure of posttraumatic stress disorder: The PTSD Diagnostic Scale (PDS). Psychological Assessment, 9, 4, 445-451.

Foa, E. B., Ehler, A., Clark, D., Tolin, D., & Orsillo, S. (1999). The Posttraumatic Cognitions Inventory: development and validation. Psychological Assessment, 11, 3, 303-314.

Foa, E. B., & Riggs, D. S. (1993). Post-traumatic stress disorder in rape victims. In J. Oldham, M. B. Riba, & A. Tasman (Eds.), American Psychiatric Press Review of Psychiatry, 12, 273-303). Washington DC: American Psychiatric Press.

Foa, E. B., Riggs, D. S., Dancu, C. V., & Rothbaum, B. O. (1993). Reliability and validity of a brief instrument for assessing post-traumatic stress disorder. Journal of Traumatic Stress, 6, 459-473.

Foa, E. B., & Rothbaum, B. O. (1998). Treating the Trauma of Rape: Cognitive Behavioural Therapy for PTSD. New York: Guilford Press.

Graham, H. L. (1998). The Role of Dysfunctional Beliefs in Individuals Who Experience Psychosis and Use Substances: Implications for Cognitive Therapy and Medical Adherence. Behavioural and Cognitive Psychotherapy, 26, 193-208.

Hittner, J. R. (1997). Alcohol-related outcome expectancies: Construct overview and implications for primary and secondary prevention. The Journal of Primary Prevention, 17, 3, 297-314.

Jacobsen, L. K., Southwick, S. M., & Kosten, T. R. (2001). Substance use disorders in patients with posttraumatic stress disorder: A review of the literature. American Journal of Psychiatry, 58, 8, 1184-1190.

Janoff-Bulman, R. (1989). Assumptive worlds and the stress of traumatic events: Applications of the schema construct. Social Cognition, 7, 113-136.

Janoff-Bulman, R. (1992). Shattered assumptions: Toward a new psychology of trauma. New York: The Free Press.

Johnson, P. B., & Gurin, G. (1994). Negative affect, alcohol expectancies and alcohol-related problems. Addiction, 89, 581-586.

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

Kessler, R. C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. B. (1995). Posttraumatic stress disorder in the National Comorbidity Survey. Archives of General Psychiatry, 52, 1048 - 1060.

Liese, B. S., & Franz, R. A. (1996). Treating substance use disorders with cognitive therapy: Lessons learned and implications for the future. In P. Salkovskis (Ed.), Frontiers of Cognitive Therapy (pp. 470-508). New York: Guilford

Marlatt, G. A. & Gordon, J. R. (Eds.) (1985). Relapse prevention: Maintenance strategies in the treatment of addictive behaviours. New York: Guilford Press.

McCann, I. L., & Pearlman, L. A. (1990). Psychological trauma and the adult survivor: Theory, therapy and transformation. New York: Brunner/Mazel.

Najavits, L. M., Weiss, R. D., Shaw, S. R., & Muenz, L. R. (1998). "Seeking safety": Outcome of a new cognitive-behavioral psychotherapy for women with posttraumatic stress disorder and substance dependence. Journal of Traumatic Stress, 11, 3, 437-455.

Newman, C. F., & Ratto, C. L (1999). Cognitive therapy of substance abuse. In E. T. Dowd, & L. Rugle (Eds.) Comparative treatments of substance abuse. Springer Series on Comparative Treatments for Psychological Disorders Vol. 1, pp. 96-126. New York: Springer.

Oei, T. P. S., & Jones, R. (1986). Alcohol-related expectancies: Have they a role in the understanding and treatment of problem drinking? Advances in Alcohol and Substance Abuse, 6, 1, 89-105.

Oei, T. P. S., & Sweeney, M. (1993). Alcohol beliefs, coping and self-efficacy: Can they discriminate between different drinking types? Unpublished manuscript.

O' Hare, T., Bennett, P., & Leduc, D. (1991). Reliability of self-reports of alcohol use by community clients. Hospital and Community Psychiatry, 42, 4, 406-408.

Ouimette, P. & Brown, P. J. (Eds.). (2003). Trauma and substance abuse: Causes, consequences, and treatment of comorbid disorders. Washington DC. American Psychiatric Association.

Read, J. P., Bollinger, A. R., & Sharkansky E. (2003). Assessment of comorbid substance use disorder and posttraumatic stress disorder. In P. Ouimette & P. J. Brown (Eds.), Trauma and substance abuse: Causes, consequences, and treatment of comorbid disorders (pp. 9-28). Washington DC: American Psychiatric Association.

Saladin, M. E., Brady, K. T., Dansky, B. S., & Kilpatrick, D. G. (1995). Understanding comorbidity between PTSD and substance use disorders: Two preliminary investigations. Addictive Behaviors, 20, 643-655.

Sharkansky, E. J., Brief, D. J., Peirce, J. M., Meehan, J. C., & Mannix, L. M. (1999). Substance abuse patients with posttraumatic stress disorder (PTSD): Identifying specific triggers of substance use and their associations with PTSD symptoms. Psychology of Addictive Behaviors, 13, 89-97.

Stewart, S. H. (1996). Alcohol abuse in individuals exposed to trauma: A critical review. Psychological Bulletin, 120, 83-112.

Stewart, S. H., Achille, M., & Pihl, R. O. (1993). Alcohol dampening of the attentional bias for threat in anxiety sensitivity: Pharmacology or expectancy? Programme and Abstracts of the Annual Meeting of the Canadian Society for Brain, Behavior and Cognitive Science, 3, 55.

Stewart, S. H., & Conrod, P. J. (2003). Psychosocial models of functional associations between posttraumatic stress disorder and substance use disorder .In P. Ouimette & P. J. Brown (Eds.), Trauma and substance abuse: Causes, consequences, and treatment of comorbid disorders (pp. 29-55). Washington DC: American Psychiatric Association.

Stewart, S. H., Conrod, P. J., Pihl, R. O., & Dongier, M. (1999). Relations between posttraumatic stress symptom dimensions and substance dependence in a community recruited sample of substance-abusing women. Psychology of Addictive Behaviors, 13, 2, 78-88.

Wright, F. W (1993). Beliefs About Substance Use In: Beck, Wright, Newman & Liese (1993) Cognitive therapy of substance abuse. New York: Guilford Press.

Young, R., & Oei, T. (1990). Drinking expectancy profile test manual. Brisbane, Queensland: Behaviour Research and Therapy Centre.

Chapter IV:

Reflective Review

**Trauma and Alcohol Abuse Research:
Issues and Reflections**

ABSTRACT

The following review presents personal reflections on the process of conducting doctoral research in the field of comorbid trauma and alcohol abuse. The focus of this paper largely concerns my work as a researcher with individuals in contact with specialist services for alcohol abuse, although also includes some discussion of general points relevant to the study of student populations. A number of issues that have arisen during the course of planning, undertaking and completing this research will be discussed. These include the research impetus, ethical considerations, recruitment issues and self-care. In addition, reflections on personal learning and development will be addressed.

1. INTRODUCTION

On reflection, if asked during the early stages of my doctoral training, what the focus of my research was going to be, I don't imagine I would ever have said "trauma and substance misuse". I recall initially being interested in the idea of research into posttraumatic stress disorder, a curiosity that had registered as a result of some good quality teaching. At this stage my thoughts had yet to develop into a clear area for research, but having taken the opportunity to discuss the breadth of the field with my supervisors, my ideas gradually developed. Firstly into a study addressing the comorbidity between trauma and substance misuse in recognition of increased interest in this field; and then secondly into a more specific piece of work considering models, conceptualisations and the role of beliefs, an area that appeared inadequately addressed within the literature to date.

Despite my initial interest in this area being founded rather tentatively, when I think now about how my knowledge and skills have grown, and how my clinical interests have developed, I would recommend working with individuals with complex needs to others. As a consequence of conducting this research I have developed a new, and very strong interest, in working clinically with people who have trauma histories and who also experience additional difficulties. These typically include substance misuse at some level, but also other maladaptive coping strategies such as self-harm. On both a personal and professional developmental level, it's valuable to have the opportunity to reflect on the research process from a perspective that feels reassuringly near the end.

2. ETHICAL CONSIDERATIONS

The successful undertaking of this research was largely contingent on well thought out ethical considerations and subsequent approval.

2.1. Trauma related ethical issues

The process of applying for ethical approval was principally focussed on designing the research in a manner that was sensitive to the needs of individuals who could potentially be very distressed and vulnerable to further distress as a consequence of participation. I was aware that some participants might be experiencing long-standing posttraumatic stress symptoms without having received input from services in relation to these difficulties. It was therefore important to think through the implications of disclosure, and how best to inform prospective participants with regard to the potential impact of participation, without jeopardising recruitment.

Sensitivity to the nature of individual experience was paramount given that some of the self-report measures administered required participants to consider a range of delicate topics. A recent study by Parslow, Jorn, O' Toole, Marshall and Grayson (2000) examining the potential for epidemiological studies to cause further harm, revealed that research interviews about PTSD caused short-term distress in 75% of individuals with PTSD compared to 56.5% with previous PTSD. Reported distress did not however, affect willingness to further participate. Evidence such as this raises important considerations with regard to the information presented to potential participants during recruitment. In the case of this research it was important to inform individuals about the possibility of distress

prior to them giving consent to participate. In addition, the consent process clearly informed individuals about their rights to withdraw at any time without explanation. With regard to individuals recruited from the specialist service, sources of support were identified and confidentiality issues were discussed should either the participant or myself become aware of distress. In the case of the student sample the potential for distress was highlighted alongside the provision of contact details should they require the opportunity to discuss any consequences of participation.

Inclusion criteria for individuals comprising the clinical sample also stated that individuals should not be approached if staff considered them as being at increased risk of experiencing distress following participation. Although this potentially limited the range of trauma symptom severity sampled, thereby introducing bias, this needed to be balanced against the participants' welfare.

During the course of data collection, there were no instances in which individuals from the clinical sample felt the need to contact sources of support as a consequence of participation. A number of participants reported that completing the questionnaires had reminded them of the traumas they had experienced but that this had provided the opportunity to reflect on their history, and note how far they had come in terms of symptom management and resolution. One undergraduate student made contact via e-mail requesting further advice on whether her experiences were relevant to the study. She was encouraged to consider taking part but again informed of the potential for distress.

All participants from the clinical sample were offered the opportunity to take information away for further consideration prior to giving consent. Some individuals preferred to do this and although the majority later returned their completed questionnaires by post, some failed to do so. In this instance I sent one reminder letter, following which no further contact was made. This provided the opportunity for participants to opt out even if they had initially consented to take part. Overall, indications were that those that took part did so willingly and that adopting this approach to recruitment was useful.

2.2. *Alcohol abuse related ethical issues*

In addition to the aforementioned issues, I was also aware that if individuals comprising the clinical sample experienced an exacerbation of trauma symptoms following participation, they might be inclined to use alcohol as a means to alleviate their distress. This therefore, further necessitated the need for me to fully inform participants about the potential impact of questioning regarding trauma. I was also prompted to allocate time at the end of every appointment to enquire about participant's emotional state, plans for the remainder of the day, contact with services in the coming week, and discuss self-care issues.

With reference to the point raised regarding the restricted data in terms of severity of trauma symptoms sampled, there was a similar concern regarding the range of alcohol abuse captured. Due to ethical issues regarding consent and the nature of the study, individuals were only invited to participate once they had previously undergone, or were in the process of an in-patient detoxification programme. This again introduced bias into the sample by preventing individuals taking part if they were currently severely dependent on alcohol.

3. RECRUITMENT

Having overcome the ethical hurdle and gained approval from the local research ethics committee for the study to commence, I set about the recruitment of participants.

3.1. *Difficulties*

My plans for the recruitment of both student and clinical samples were well thought out and structured. At some level I naively thought that although I had been informed by my supervisors that recruitment might present difficulties, my research was not going to suffer the same fate. In hindsight, no amount of planning could have prepared me for the difficulties I experienced. The process of recruitment was very much one that required constant refinement.

The majority of difficulties encountered related to the recruitment of participants for the clinical sample. The process began much as I had planned. The staff team at the specialist service were approached and introduced to the research, all of whom appeared interested and motivated. The information was prepared and made available for staff to commence the introduction of the research to clients. After four months however, I had somewhere in the region of four contacts. Ashery and McAuliffe (1992) have commented on the common difficulties with recruitment encountered during randomised trials for psychosocial treatments for drug abusers. The authors correctly asserted that inadequate recruitment disrupts the research timetable and preoccupies research staff. The cause of such difficulties being noted as the need for large samples, multiple eligibility

criteria, participants reluctance to be involved, clinician's distrust of research and difficulties collaborating with agencies.

In response to these difficulties, I revisited the staff team with a view to gaining information about barriers to recruitment. As a consequence of this meeting a number of changes took place. The inclusion criteria were reviewed, weekly telephone contact with community workers was established, weekly visits to the in-patient unit were made, and I became available during the consultant's outpatient clinic to discuss participation with attending clients.

After nine months I had collected data from approximately fifty clients. Some individuals had not been exposed to trauma, but were invited to participate in an attempt to note prevalence of trauma in the service. Estimates of trauma prevalence in this study should however, be treated with caution. Some individuals may have been more inclined to participate in recognition of their own trauma histories; whilst those who hadn't experienced trauma may have been discouraged by the thought that exposure to trauma was an essential requirement of participation.

3.2. Reflections on participants

With the first set of appointments arranged I remember feeling quite anxious. Thinking back now, I am aware of my own preconceptions of what individuals with trauma histories and who abused alcohol would be like. I imagined a reluctance to participate, an unwillingness to co-operate, and ultimately a lack of understanding about research. In the case of individuals who were in contact with services as a result of alcohol abuse, the majority reported being keen to "give

something back" to the service. Most participants commented on their appreciation of the support they had received and were happy to disclose very personal information. My preconceptions were therefore not borne out.

Despite my reading in the area, I was initially surprised by the level of trauma experienced by so many. Equally I was also surprised by the accepting manner in which a large proportion relayed quite horrific events. Many participants discussed their use of alcohol in the context of blocking thoughts and as a means to cope with stress. Alongside these issues, a number of others were noted including the constant battle with drink, a determination to abstain, a preoccupation with thoughts of drinking and a lack of self-control.

Participants responded to the experience of completing the questionnaires quite positively. Some reported having valued the opportunity to reflect on their beliefs about drinking and were able to make links with how their beliefs affected their behaviour. Others took solace from the observation that many of their beliefs about trauma had changed over the years, and that their beliefs about alcohol were being challenged as a result of the detoxification process.

4. SUPERVISION AND SELF-CARE

Another area worthy of note is that of supervision and self-care for researchers when conducting research in the field of trauma and alcohol abuse.

4.1. Vicarious traumatisation

After some time spent assisting individuals with the completion of questionnaires, I felt as though I had become desensitised to the role of listening to traumatic histories. Although this could potentially have reduced my therapeutic sensitivity, this process in some ways served a productive purpose. Not only did I feel more confident and able to cope with the demands of constantly recruiting and meeting individuals to discuss my work, but I also believe it helped participants to discuss the nature of their experience in an open manner.

On meeting a policeman from a local force, I remember my confidence and capabilities being challenged. During our meeting he relayed a catalogue of exposure to a range of traumatic events, which at the time I felt quite able to manage. Almost immediately after ending the appointment however, I recall experiencing a number of intrusive images related to the experiences he had relayed. I spent the remainder of that day and the next, replaying our conversation, imagining what his experience must have been like, being unable to concentrate or sleep, and ultimately questioning my view of the world in light of this new information.

The concept of secondary or vicarious traumatisation is becoming increasingly noted as a consequence of working with individuals with traumatic histories. These terms are used to describe a process through which those who are in contact with trauma survivors may become indirectly traumatized by the trauma. Moosman (2002) noted that this process can cause changes in the therapist views about themselves, the world and others and that as such, individuals working with trauma survivors are at increased risk of developing PTSD

symptoms. Authors have commented on the importance of maintaining a balance between professional and personal support, whilst increasing awareness and self-care activities (Jones 2001; Lugris 2001; Saakvitne 2002). My own approach to resolving my difficulties was to seek support from a number of personal sources, as well as discussing the incident and my altered world view with a placement supervisor. Thankfully the issue was resolved and has since highlighted to me, the need to establish adequate support and clinical supervision in the context of research work from the outset.

5. PERSONAL LEARNING AND DEVELOPMENT

During the course of planning, undertaking and completing this research project, I have had the opportunity not only to reflect on certain aspects of the research process but also my own personal learning and development.

5.1. *Challenged cognitions*

On a personal learning level, completing this study has provided me with a very valuable opportunity to challenge many assumptions about individuals who abuse alcohol. I recognise now, that for many of the individuals I encountered, alcohol is a mechanism for coping with intolerable feelings in the context of poor social support and limited resources. Although use of alcohol is a less adaptive strategy than many others, choices are often restricted. My own view is that individuals who abuse alcohol and who have trauma histories should not simply be judged on the basis of their use of such strategies. They should instead receive recognition of their circumstance and be provided with the opportunity to

develop their repertoire of responses through education and support from services.

Having spent many hours listening to the distressing stories of often socially isolated individuals who have experienced significant emotional and psychological distress, I have come to recognise the resilience of this client group. Despite their traumatic histories, difficulties with alcohol, and the physical health consequences of excessive use, many of the individuals I came across were managing at some level to continue with life. Their functioning may have been significantly compromised, but in light of their histories the fact that they were even intermittently attending services was the sign of a desire to make changes.

5.2. *Research confidence*

With regard to development, I have more recently noticed an increase in my research related confidence. Having previously had limited experience of research at a higher level, the prospect of undertaking this work initially aroused considerable anxiety. Through reading, supervision and research practice I have not only gained familiarity with a new area of psychological knowledge, but also a number of statistical and methodological techniques. As a consequence, I feel more motivated and better equipped to integrate scientific research into my clinical practice, despite my recognition that the application of academic research procedures in this context is very challenging.

5.3. *Closure*

The process of conducting this research has at times been exhausting. Despite the difficulties reported however, there are many lessons to be learnt and memories to hold onto from this experience. Not to mention the skills and confidence I acquired as a result of completing this project. Although in hindsight there are probably numerous changes I would make should I have my time again, I am still able to retain a sense of satisfaction about what was achieved both personally and professionally, and am ultimately grateful for having been able to take up this challenge.

6. REFERENCES

Ashery, R. S., & McAuliffe, W. E. (1992). Implementation issues and techniques in randomised trials of outpatient psychosocial treatments for drug abusers: Recruitment of subjects. American Journal of Drug and Alcohol Abuse, 18, 3, 305-329.

Jones, K. D. (2001). Counsellor reactions to clients traumatized by violence. In D. S. Sandhu (Ed.), Psychological correlates, concepts and intervention strategies (pp. 470). New York: Nova Science Publishers Inc.

Lugris, V. M. (2001). Vicarious traumatization in therapists: Contributing factors, PTSD symptomatology, and cognitive distortions. Dissertation Abstracts International: Section B: The Sciences and Engineering, 61, 10-B, 5571.

Moosman, J. L. (2002). Vicarious traumatization: The effects of empathy and trait arousability. Dissertation Abstracts International: Section B: The Sciences and Engineering, 62, 10-B, 4796.

Parslow, R. A., Jorm, A. F., O' Toole, B. I., Marshall, R. P., & Grayson, D. A. (2000). Distress experienced by participants during an epidemiological survey of posttraumatic stress disorder. Journal of Traumatic Stress, 13, 3, 465-471.

Saakvitne, K. W. (2002). Shared trauma: The Therapist's increased vulnerability. Psychoanalytic Dialogues, 12, 3, 443-449.



PAH

13th March 2002

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WARWICKSHIRE RESEARCH ETHICS COMMITTEE

The following LREC trial protocol has been examined from an ethical viewpoint and the decision of the Committee is as follows:

	Documentation Reviewed as itemised in ICH guidelines
1. * Approved	Protocol <input checked="" type="checkbox"/> Patient Information Form/ <input checked="" type="checkbox"/> Consent Form <input checked="" type="checkbox"/>
2. Approved subject to amendments listed below	Indemnity (signed) <input checked="" type="checkbox"/> CTX <input type="checkbox"/> Protocol Amendments <input type="checkbox"/>
3. Rejected for reasons listed below	
4. Approved by Chairman's Action	

Ethical Committee Minute Number 594/02 Dated 27th February 2002

Protocol Title and Reference Number

RE 512 Investigating the role of beliefs in the relationships between substance misuse and post traumatic stress

(Vicki Ashton)

Signed.......... Committee Chairman

Dated....9/4/02.....

This approval is subject to the following standard conditions :

1. the study must begin within one year;
2. the researcher must seek the Committee's approval in advance of any Proposed deviations from the original protocol;
3. any unusual or unexpected results which raise questions about the safety of the study must be reported to the Committee.
4. progress reports must be submitted to the Committee annually; and
5. a summary of the study's findings must be submitted to the Committee upon its Completion.

COVENTRY UNIVERSITY - SCHOOL OF HEALTH AND SOCIAL SCIENCES
STUDENT SUBMISSION TO SCHOOL RESEARCH ETHICS COMMITTEE

1. Student's name: VICTORIA ASHTON 2. Course: CLINICAL PSYCHOLOGY DOCTORATE
(BLOCK CAPITALS)

3. Title of project: A STUDY INVESTIGATING THE ROLE OF BELIEFS IN THE
RELATIONSHIP BETWEEN SUBSTANCE MISUSE & POST TRAUMATIC
STRESS

4. Summary of the project in jargon-free language and in not more than 120 words:

Sample: 100 PARTICIPANTS TO BE RECRUITED FROM SOUTH WARWICKSHIRE
SUBSTANCE MISUSE SERVICE. 100 UNDERGRADUATE STUDENTS FROM
COVENTRY UNIVERSITY TO BE RECRUITED AS CONTROLS

Research site:

- COVENTRY UNIVERSITY
- SUBSTANCE MISUSE SERVICE, WOODLEIGH BEECHES, WARWICK HOSPITAL

Design (eg experimental):
QUASI-EXPERIMENTAL

Methods of data collection:

- STANDARDISED QUESTIONNAIRES
THE SEVERITY OF ALCOHOL DEPENDENCE QUESTIONNAIRE
THE POST TRAUMATIC DIAGNOSTIC SCALE INC. POST TRAUMATIC COGNITIONS INVENTORY
THE DRINKING EXPECTANCY QUESTIONNAIRE
A BELIEFS ABOUT SUBSTANCE USE MEASURE
- QUESTIONNAIRE TO ELICIT DEMOGRAPHIC INFORMATION
- WRITTEN/AUDIOTAPED NARRATIVES - FOR BRIEF PAPER

Access arrangements (if applicable): VIA LECTURERS FOR CONTROL SAMPLE. VIA CLINICAL
PSYCHOLOGIST AT WOODLEIGH BEECHES (CLINICAL SUPERVISOR)

5. Will the project involve patients(clients) and/or patient(client) data? Yes [✓] No []
6. Will any invasive procedures be employed in the research? Yes [] No [✓]
7. Is there a risk of physical discomfort to those taking part? Yes [] No [✓]
8. Is there a risk of psychological distress to those taking part? Yes [✓] No []
9. Will specific individuals or institutions (other than the University) be identifiable through data published or otherwise made available? Yes [] No [✓]
10. Is it intended to seek informed consent from each participant (or from his or her parent or guardian)? Yes [✓] No []

Student's signature:

Supervisor's signature:

Date:

21st Jan, 2002

FOR COMMITTEE USE

Immediate approval

[]

Referral to full School Committee
Decision pending receipt of further information
(specify below)

[]

Referral to local Hospital Ethics Committee

[]

Committee Member's signature:

Date:

22/1/02

Programme Director

Doctorate Course in Clinical Psychology

Dr Delia Cushway

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COVENTRY
UNIVERSITY

Our ref

Dear Student

My name is Vicki Ashton and I am a trainee clinical psychologist in the final stages of my clinical training.

Your ref
Date

I am currently carrying out some research into the effects of unpleasant or traumatic events, and how these may effect the way people think about themselves and the world. I am also looking at the effect this may have on people's beliefs about alcohol and subsequent alcohol consumption.

I would be grateful if you would consider taking part in this research. Briefly, your participation would mean answering questions and filling out questionnaires that take about 45 minutes to complete. These questions relate to any traumatic events that you may have experienced and also the use of alcohol. There are also questions that ask about your beliefs in relation to trauma and alcohol use. All of the information you provide will remain confidential.

I ask that you read the accompanying information sheet carefully. If you decide that you would like to be involved in this study, please sign the consent form at the front of the attached booklet before moving on to the questionnaires. Once you have completed all of the questionnaires, please return the booklet in the envelope provided to my pigeonhole located in the common room. Alternatively you may wish to post your questionnaires to the address above for the Doctorate Course in Clinical Psychology.

If you require any further information or have any other queries, please do not hesitate to contact me.

Yours sincerely,

Vicki Ashton

Trainee Clinical Psychologist

South Warwickshire



Primary Care Trust

Warwickshire Substance Misuse Services

The Woodleigh/Beeches Centre
Warwick Hospital, Lakin Road

Warwick, CV34 5BW
Tel: 01926 410281
Fax: 01926 497859

Dear

My name is Vicki Ashton and I am a trainee clinical psychologist in the final stages of my clinical training.

I am currently carrying out some research with Dr Melanie Day, Consultant Clinical Psychologist, into the effects of unpleasant or traumatic events and how these may affect the way people think about themselves and the world. We are also looking at the effect this may have on people's beliefs about alcohol and subsequent alcohol consumption. We are hoping to be able to gather information from approximately 100 people who are in contact with the specialist drugs and alcohol service.

We would be grateful if you would consider taking part in this research. Briefly, your participation would mean answering questions and filling out questionnaires that take about 45 minutes to complete. These questions relate to any traumatic events that you may have experienced and also your use of alcohol. There are also questions that ask about your beliefs in relation to trauma and alcohol use. All of the information you provide will remain confidential.

If you wish to participate, please complete the 'Consent to be Contacted' form attached and pass this to your keyworker. This will allow us to contact you and make arrangements to discuss participation with you in more detail.

We look forward to hearing from you.

Yours sincerely,

Vicki Ashton
Trainee Clinical Psychologist

Melanie Day
Consultant Clinical Psychologist



CONSENT TO BE CONTACTED

Study Title

Investigating the Role of Beliefs in the Relationship Between Substance Misuse and Post Traumatic Stress

I hereby consent to my correspondence details being passed on to Vicki Ashton, Trainee Clinical Psychologist, so that I may be contacted with regard to participation in the above study.

Contact Details

Name:

Address:

.....

.....

.....

Telephone (inc code):

Name of Person Taking Consent:

PARTICIPANT INFORMATION SHEET

Study Title

INVESTIGATING THE ROLE OF BELIEFS IN THE RELATIONSHIP BETWEEN SUBSTANCE MISUSE AND POST TRAUMATIC STRESS

Researcher: Vicki Ashton, Trainee Clinical Psychologist

**YOU ARE BEING INVITED TO TAKE PART IN A RESEARCH STUDY.
BEFORE YOU DECIDE IT IS IMPORTANT FOR YOU TO UNDERSTAND WHY
THE RESEARCH IS BEING DONE AND WHAT IT WILL INVOLVE. PLEASE
TAKE TIME TO READ THE FOLLOWING INFORMATION CAREFULLY AND
DISCUSS IT WITH OTHERS IF YOU WISH. ASK US IF THERE IS ANYTHING
THAT IS NOT CLEAR OR IF YOU WOULD LIKE MORE INFORMATION. TAKE
TIME TO DECIDE WHETHER OR NOT YOU WISH TO TAKE PART.**

1. What is the purpose of the study?

The study is looking at the relationship between extremely unpleasant (traumatic) events, and the use of substances such as alcohol. The study will also consider the way in which people who have experienced unpleasant events and who use substances, think about themselves and the world. This will help professionals working in the area to understand the relationship between these problems and consequently, develop effective treatments.

2. Why have I been chosen?

You have been identified as an undergraduate studying at Coventry University. Individuals are being given the opportunity to participate from this site in order to provide control group data that is to be compared to data obtained from a clinical population.

3. Do I have to take part?

It is up to you to decide whether or not to take part. If you decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time, without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect your statutory rights.

4. If I decide to take part what will I have to do?

Participation in this study will require you to read the information and instructions carefully. If you agree to take part you will be asked to sign a consent form and complete a number of questionnaires that could take up to 45 minutes to complete. These questionnaires will relate to your experience of unpleasant events, your use of alcohol and drugs, and your thoughts about yourself and the world. There will also be some questions that relate to your age, gender, marital status and ethnic background etc. All of the information you provide will remain confidential.

5. What are the possible effects of taking part?

Some people find thinking or talking about upsetting events useful and relieving. However, for others it can bring back some memories that are unpleasant or uncomfortable and cause distress. If this happens you are advised to contact the student counselling service for which numbers are provided, or get in touch with your GP immediately. Alternatively, you may wish to contact the researcher for further advice.

6. What will I get out of taking part?

Participation in this study will provide valuable information that will aid the understanding and future treatment of individuals who misuse substances and have experienced unpleasant and traumatic events. No individual gain is guaranteed as a result of participation in this study.

7. Will my taking part in this study be kept confidential?

All information collected about you during the course of the research will be kept strictly confidential. Your questionnaires will be given an anonymous identification number, responses will be coded and information will be stored under lock and key. Only the researcher will have access to these records.

8.What will happen to the results of the study?

The results of this study will be available August 2003. A summary of the main findings may be requested from the researcher. It is possible that results of this study will be published in a number of clinically relevant journals. If so, information provided by participants will remain completely anonymous.

9. Who is involved in this research?

This research is being conducted as a requirement of the Coventry University and University of Warwick Clinical Psychology Doctorate. Neither the researcher nor the supervisors of this project are being paid for their involvement.

10. Who has reviewed the study?

The proposal for this study has been subjected to peer review by staff at Coventry University, the external examining body, and South Warwickshire Combined Care NHS Trust, Substance Misuse Service. Warwickshire Health Authority Local Research Ethics Committee has also approved this study.

11. Who should I contact if I want to know more?

If you have any questions or queries, or would like to know more about this study, please contact:

Vicki Ashton, Trainee Clinical Psychologist
Clinical Psychology Doctorate
Coventry University
Tel. 02476 888328

THANK YOU FOR YOUR TIME

PARTICIPANT INFORMATION SHEET

Study Title

INVESTIGATING THE ROLE OF BELIEFS IN THE RELATIONSHIP BETWEEN SUBSTANCE MISUSE AND POST TRAUMATIC STRESS

Researcher: Vicki Ashton, Trainee Clinical Psychologist

**YOU ARE BEING INVITED TO TAKE PART IN A RESEARCH STUDY.
BEFORE YOU DECIDE IT IS IMPORTANT FOR YOU TO UNDERSTAND WHY
THE RESEARCH IS BEING DONE AND WHAT IT WILL INVOLVE. PLEASE
TAKE TIME TO READ THE FOLLOWING INFORMATION CAREFULLY AND
DISCUSS IT WITH OTHERS IF YOU WISH. ASK US IF THERE IS ANYTHING
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TIME TO DECIDE WHETHER OR NOT YOU WISH TO TAKE PART.**

1. What is the purpose of the study?

The study is looking at the relationship between extremely unpleasant (traumatic) events, and the use of substances such as alcohol. The study will also consider the way in which people who have experienced unpleasant events and who use substances, think about themselves and the world. This will help professionals working in the area to understand the relationship between these problems and consequently, develop effective treatments.

2. Why have I been chosen?

You have been identified by your keyworker as someone who would be suitable for participation in this project as a result of your contact with professionals at the substance misuse service.

3. Do I have to take part?

It is up to you to decide whether or not to take part. If you decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time, without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect the standard of the care you receive.

4. If I decide to take part what will I have to do?

Participation in this study will require you to read the information and instructions carefully. If you agree to take part you will be asked to sign a consent form and complete a number of questionnaires that could take up to 45 minutes to complete. These questionnaires will relate to your experience of unpleasant events, your use of alcohol and drugs, and your thoughts about yourself and the world. All of the information you provide will remain confidential.

5. What are the possible effects of taking part?

Some people find thinking or talking about upsetting events useful and relieving. However, for others it can bring back some memories that are unpleasant or uncomfortable and cause distress. If this happens you are advised to contact your keyworker immediately. Furthermore, if the researcher feels that you are unduly distressed it is possible that information will need to be shared with the person responsible for your care so that they may help you with these difficult feelings. This will not happen without your knowledge.

6. What will I get out of taking part?

Participation in this study will provide valuable information that will aid the understanding and future treatment of individuals who misuse substances and have experienced unpleasant and traumatic events. No individual gain is guaranteed as a result of participation in this study.

7. Will my taking part in this study be kept confidential?

The health care professional responsible for your treatment at the substance misuse service will be notified of your participation in this project. Your GP will be informed once you consent to this. All of the information you provide will be treated confidentially except in the circumstances mentioned above (6. '*What are the possible effects of taking part?*'). Your questionnaires will be given an anonymous identification number, responses will be coded and information will be stored under lock and key. Only the researcher will have access to these records.

8.What will happen to the results of the study?

The results of this study will be available August 2003. A summary of the main findings may be requested from the researcher. It is possible that results of this study will be published in a number of clinically relevant journals. If so, information provided by participants will remain completely anonymous.

9. Who is involved in this research?

This research is being conducted as a requirement of the Coventry University and University of Warwick Clinical Psychology Doctorate. Neither the researcher nor the supervisors of this project are being paid for their involvement. The research is being supervised by Dr. Melanie Day, Consultant Clinical Psychologist.

10. Who has reviewed the study?

The proposal for this study has been subjected to peer review by staff at Coventry University, the external examining body, and South Warwickshire combined Care NHS Trust, Substance Misuse Service. Warwickshire Health Authority Local Research Ethics Committee has also approved this study.

11. Who should I contact if I want to know more?

If you have any questions or queries, or would like to know more about this study, please contact:

Vicki Ashton, Trainee Clinical Psychologist

Clinical Psychology Doctorate

Coventry University

Tel. 02476 888328

THANK YOU FOR YOUR TIME

CONSENT TO PARTICIPATE

Study Title

***INVESTIGATING THE ROLE OF BELIEFS IN THE RELATIONSHIP BETWEEN
SUBSTANCE MISUSE AND POST TRAUMATIC STRESS***

Researcher: Vicki Ashton, Trainee Clinical Psychologist

**PLEASE PUT A ✓ TICK IN THE BOX AFTER YOU HAVE READ AND
UNDERSTOOD EACH STATEMENT**

1. I confirm that I have read and understood the information sheet dated / / for the above study.
 2. I understand that my participation is voluntary and that I am free to withdraw at any time without my legal rights being affected.
 3. I understand that all information I provide will be kept confidential in accordance with the Data Protection Act (1983)
 4. I understand that I am able to contact the researcher if I have any questions or queries with regard to my participation in the above study.
 5. I agree to take part in the above study.
-

Signature:.....

Date:.....

Name of Researcher:.....

(Or of person taking consent if different from researcher)

Signature:.....

Date:.....

CONSENT TO PARTICIPATE

Study Title

INVESTIGATING THE ROLE OF BELIEFS IN THE RELATIONSHIP BETWEEN SUBSTANCE MISUSE AND POST TRAUMATIC STRESS

Researcher: Vicki Ashton, Trainee Clinical Psychologist

**PLEASE PUT A ✓ TICK IN THE BOX AFTER YOU HAVE READ AND
UNDERSTOOD EACH STATEMENT**

1. I confirm that I have read and understood the information sheet dated / / for the above study.
2. I understand that my participation is voluntary and that I am free to withdraw at any time without my health care or legal rights being affected.
3. I understand that all information I provide will be kept confidential in accordance with NHS Trust policies. However, I also understand that if the researcher becomes concerned about my own or other's safety, then she may inform the professional responsible for my care.
4. I am aware that my GP will be informed of my participation in this project, but that the information I provide will not be disclosed.
5. I am willing to allow the researcher access to my records held within the Substance Misuse Service, for the purpose of gaining demographic details (e.g. age, ethnicity etc.) and information routinely gathered at assessment for individuals in contact with the Substance Misuse Service (e.g. severity and duration of dependence etc.). I understand that strict confidentiality will be maintained in accordance with NHS Trust policy.

6. I understand that I am able to contact the researcher if I have any questions or queries with regard to my participation in the above study.

7. I agree to take part in the above study.

Signature:.....

Date:.....

Name of Researcher:.....

(Or of person taking consent if different from researcher)

Signature:.....

Date:.....

South Warwickshire



Primary Care Trust

Warwickshire Substance Misuse Services

The Woodleigh/Beeches Centre

Warwick Hospital, Lakin Road

Warwick. CV34 5BW

Tel: 01926 410281

Fax: 01926 497859

Insert date

Dear Dr.

RE: 'Investigating the role of beliefs in the relationship between substance misuse and posttraumatic stress'

I write to inform you for your records that who is registered at your practice, has recently consented to take part in the above project. I enclose an information sheet for your perusal.

Yours sincerely

Vicki Ashton

Trainee Clinical Psychologist



DEMOGRAPHIC INFORMATION FORM

1. **Date of Birth:**...../...../..... **Age:**.....

2. **Sex:** (*Please tick*) Male Female

3. **Marital Status:** (*Please tick*) Single Married
Living together Separated/Divorced
Widowed

4. **Ethnic origin:**

(Please state what you consider to be your ethnic background)

.....
.....

5. **Religion:**

(Please state your religious orientation)

.....
.....

6. **Number of years in education:**.....years

7. **Employment Status:** (*You may tick more than one*)

Student Employed Unemployed

8. Occupation: (*If you are employed, please state your occupation*)

.....
.....

9. Housing: (*Please state what type of housing you live in*)

Property Owner Rented Accommodation Others Home

10. Number of other residents: (*How many people live in your household including yourself?*).....

11. Number of dependents: (*How many individuals are you responsible for?*).....

12. How often do you have a drink containing alcohol?

.....

13. How many drinks containing alcohol do you have on a typical day when you are drinking?

.....

14. How often do you have 6 or more drinks on one occasion?

.....

15. Please complete the table below by reporting how many drinks containing alcohol you have in a *TYPICAL WEEK*.

DAY	No. OF ALCOHOLIC DRINKS
MONDAY	
TUESDAY	
WEDNESDAY	
THURSDAY	
FRIDAY	
SATURDAY	
SUNDAY	

16. In the past 3 months have you been hospitalised for any detoxification, physical or mental health difficulty? (Please tick)

Yes No

13. Have you ever had contact with any services in relation to any difficulties you might have had in relation to traumatic experiences or substance misuse? (Please tick)

Yes No

If yes, please specify who you have had contact with e.g. GP, Mental Health services / professionals, Alcoholics Anonymous, specialist substance misuse services.

.....
.....

THANK YOU

PTDS

PART 1

Many people have lived through or witnessed a very stressful and traumatic event at some point in their lives. Below is a list of traumatic events. Put a checkmark in the box next to ALL of the events that have happened to you or that you have witnessed.

1. Serious accident, fire, or explosion (for example an industrial, farm, car, plane or boating accident).
2. Natural disaster (for example, tornado, hurricane, flood or major earthquake).
3. Non-sexual assault by a family member or someone you know (for example, being mugged, physically attacked, shot, stabbed, or held at gunpoint).
4. Non-sexual assault by a stranger (for example, being mugged, physically attacked, shot, stabbed, or held at gunpoint).
5. Sexual assault by a family member or someone you know (for example, rape or attempted rape).
6. Sexual assault by a stranger (for example, rape or attempted rape).
7. Military combat or a war zone.
8. Sexual contact when you were younger than 18 with someone who was 5 or more years older than you (for example, contact with genitals, breasts).
9. Imprisonment (for example, prison inmate, prisoner of war, hostage).
10. Torture
11. Life-threatening illness
12. Other traumatic event
13. If you marked item 12, specify the traumatic even t below
.....

**IF YOU MARKED ANY OF THE ITEMS,
CONTINUE. IF NOT, STOP HERE.**

PART 2

14. If you marked more than one traumatic event in Part 1, put a checkmark in the box below next to the event that *bothers you the most*. If you marked only one traumatic event in Part 1, mark the same one below.

- Accident
Disaster
Non-sexual assault/ someone you know
Non-sexual assault/stranger
Sexual assault/someone you know
Sexual assault/stranger
Combat
Sexual contact under 18 with someone 5 years older
Imprisonment
Torture
Life-threatening illness
Other

Please briefly describe the traumatic event you marked above

.....
.....
.....
.....

Below are several questions about the traumatic event you just described above

15. How long ago did the traumatic event happen?

..... Months

For the following question, circle Y for YES or N for NO

During this traumatic event:

16. Were you physically injured? Y N
17. Was someone else physically injured? Y N
18. Did you think that your life was in danger? Y N
19. Did you think that someone else's life was in danger? Y N
20. Did you feel helpless? Y N

21. Did you feel terrified?

Y N

35. Feeling irritable or having fits of anger.

0 1 2 3

PART 3

Below is a list of problems that people sometimes have after experiencing a traumatic event. Read each one carefully and circle the number (0-3) that best describes how often that problem has bothered you IN THE PAST MONTH. Rate each problem with respect to the traumatic event you described in Item 14.

0 Not at all or only one time

1 Once a week or less/once in a while

2 Two to four times a week/half the time

3 Five or more times a week/ almost always

22. Having upsetting thoughts or images about the traumatic event that came into your head when you didn't want them to. 0 1 2 3

23. Having bad dreams or nightmares about the traumatic event. 0 1 2 3

24. Reliving the traumatic event, acting or feeling as if it was happening again. 0 1 2 3

25. Feeling emotionally upset when you were reminded of the traumatic event (e.g. feeling scared, angry, sad, guilty etc.) 0 1 2 3

26. Experiencing physical reactions when you were reminded of the traumatic event (e.g., sweating, heart beating fast). 0 1 2 3

27. Trying not to think about, talk about, or have feelings about the traumatic event. 0 1 2 3

28. Trying to avoid activities, people, or places that remind you of the event. 0 1 2 3

29. Not being able to remember an important part of the traumatic event. 0 1 2 3

30. Having much less of an interest, or participating much less often in important activities. 0 1 2 3

31. Feeling distant or cut off from people around you. 0 1 2 3

32. Feeling emotionally numb (e.g. being unable to cry, or unable to have loving feelings). 0 1 2 3

33. Feeling as if your future plans or hopes will not come true (e.g. you will not have a career, marriage, children, or a long life). 0 1 2 3

34. Having trouble falling or staying asleep. 0 1 2 3

36. Having trouble concentrating (e.g. drifting in and out of conversations, losing track of a story on television, forgetting what you read). 0 1 2 3

37. Being overly alert (e.g. checking to see who is around you, being uncomfortable with your back to a door etc.). 0 1 2 3

38. Being jumpy or easily startled (e.g. when someone walks up behind you). 0 1 2 3

39. How long have you experienced the problems that you reported above?
..... Months

40. How long after the traumatic event did these begin?..... Months

PART 4

Indicate below if the problems you rated in PART 3 have interfered with any of the following areas of your life DURING THE PAST MONTH. Circle Y for YES or N for NO.

Work	Y N
Household chores and duties	Y N
Relationships with friends	Y N
Fun and leisure activities	Y N
Schoolwork	Y N
Relationships with your family	Y N
Sex life	Y N
General satisfaction with life	Y N
Overall level of functioning in all areas of your life.	Y N

PTCI

We are interested in the kind of thoughts that you may have had after a traumatic experience. Below are a number of statements that may or may not be representative of your thinking.

Please read each statement carefully and tell us how much you AGREE or DISAGREE with each statement.

People react to traumatic events in many different ways. There are no right or wrong answers to these statements.

1	2	3	4	5	6	7
Totally Disagree	Disagree Very Much	Disagree Slightly	Neutral	Agree Slightly	Agree Very Much	Totally Agree

No.	Question	Response Rating
1	The event happened because of the way I acted	
2	I can't trust that I will do the right thing	
3	I am a weak person	
4	I will not be able to control my anger and will do something terrible	
5	I can't deal with even the slightest upset	
6	I used to be a happy person but now I am always miserable	
7	People can't be trusted	
8	I have to be on guard all of the time	
9	I feel dead inside	
10	You can never know who will harm you	
11	I have to be especially careful because you never know what can happen next	
12	I am inadequate	
13	I will not be able to control my emotions, and something terrible will happen	
14	If I think about the event, I will not be able to handle it	

15	The event happened to me because of the sort of person I am	
16	My reactions since the event mean that I am going crazy	
17	I will never be able to feel normal emotions again	
18	The world is a dangerous place	
19	Somebody else would have stopped the event from happening	
20	I have permanently changed for the worse	
21	I feel like an object, not like a person	
22	Somebody else would not have gotten into this situation	
23	I can't rely on other people	
24	I feel isolated and set apart from others	
25	I have no future	
26	I can't stop bad things from happening to me	
27	People are not what they seem	
28	My life has been destroyed by the trauma	
29	There is something wrong with me as a person	
30	My reactions since the event show that I am a lousy coper	
31	There is something about me that made the event happen	
32	I will not be able to tolerate my thoughts about the event, and I will fall apart	
33	I feel like I don't know myself anymore	
34	You never know when something terrible will happen	
35	I can't rely on myself	
36	Nothing good can happen to me anymore	

THANK YOU

BELIEFS ABOUT SUBSTANCE USE

(F. D. Wright)

When examining your own beliefs about substance use (alcohol cocaine, heroin and other), please keep in mind the substances that you use or have used. Indicate how strongly you believe each statement, using the following scale:

- 7 – Totally Agree**
- 6 – Agree Very Much**
- 5 – Agree Slightly**
- 4 – Neutral**
- 3 – Disagree Slightly**
- 2 – Disagree Very Much**
- 1 - Totally Disagree**

No.	Question	Response Rating
1	Using substances releases my creativity	
2	I could not cope as well if I stopped using	
3	Life without using is boring	
4	I have to quit	
5	I can't function without it	
6	My life is screwed up anyway, so there is no point in stopping	
7	This is the only way for me to cope with the pain	
8	I feel better knowing it's there	
9	I couldn't cope with stopping	
10	Stopping would drive me crazy	
11	Stopping would lead to worse problems	
12	If I stopped using substances, the urges/cravings would be unbearable	
13	I could not cope with withdrawal symptoms	
14	I will have overpowering urges/cravings for the rest of my life	
15	I may use substances for the rest of my life	
16	Life is more fun when I use	

- 7 – Totally Agree**
6 – Agree Very Much
5 – Agree Slightly
4 – Neutral
3 – Disagree Slightly
2 – Disagree Very Much
1 - Totally Disagree

No.	Question	Response Rating
17	Using is a lot of fun	
18	The only way to stop is to completely avoid every person I used with and every place I used	
19	The urges/cravings makes me use	
20	My life won't get any better even if I stop using	
21	If I stop using I'll have to tackle other problems I'm not prepared to handle	
22	Life could be depressing if I stopped	
23	I don't deserve any better than this	
24	I can't use anymore	
25	I'm not a strong enough person to stop	
26	I could not be social without using	
27	Having a strong negative emotion leads to an urge	
28	I only use this much because of the stress I'm under	
29	Substance use is not a problem for me	

THANK YOU

DEP PART 1: DEQ

This questionnaire is in two parts. Part 1 contains 43 statements describing the effects that drinking alcohol may have on you. The purpose of this questionnaire is to find out about your thoughts, feelings and beliefs about drinking. There are no right or wrong answers.

Please circle the number beside each statement which best describes how strongly you agree or disagree with that statement, using the following key.

KEY:

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1	2	3	4	5

Remember to respond to each statement as it applies to you. Do not spend too much time on each item and try to answer them all. All your answers will be confidential so please try to answer as honestly as you can. To ensure confidentiality please do not place your name on this booklet.

RESPOND TO THESE ITEMS ACCORDING TO YOUR BELIEFS ABOUT DRINKING

- | | | | | | |
|---|---|---|---|---|---|
| 1. I get better ideas when I am drinking | 1 | 2 | 3 | 4 | 5 |
| 2. I do not drink alcohol to help me unwind after a hard day or week's work | 1 | 2 | 3 | 4 | 5 |
| 3. Little things annoy me less when I'm drinking | 1 | 2 | 3 | 4 | 5 |
| 4. Drinking makes me feel outgoing and friendly | 1 | 2 | 3 | 4 | 5 |
| 5. Drinking alcohol makes me tense | 1 | 2 | 3 | 4 | 5 |
| 6. I have more self-confidence when drinking | 1 | 2 | 3 | 4 | 5 |
| 7. It is not necessary to drink to get full enjoyment out of life | 1 | 2 | 3 | 4 | 5 |

8. Drinking makes me more sexually responsive	1	2	3	4	5
9. When I am anxious or tense I do not feel a need for alcohol	1	2	3	4	5
10. Drinking makes the future brighter	1	2	3	4	5
11. I drink alcohol because it's a habit	1	2	3	4	5
12. Drinking makes me bad tempered	1	2	3	4	5
13. I am more aware of what I say and do if I'm drinking alcohol	1	2	3	4	5
14. I feel that drinking hinders me in getting along with other people	1	2	3	4	5
15. I feel restless when drinking alcohol	1	2	3	4	5
16. I am more sullen and depressed when I'm drinking alcohol	1	2	3	4	5
17. I rarely think about alcohol	1	2	3	4	5
18. I cannot always control my drinking	1	2	3	4	5
19. I am less concerned about my actions when I'm drinking	1	2	3	4	5
20. If I'm drinking it's easier to express my feelings	1	2	3	4	5
21. I drink to relieve tension	1	2	3	4	5
22. I often feel sexier after I've been drinking	1	2	3	4	5
23. Drinking does not help to relieve any tension I feel about recent concerns and interests	1	2	3	4	5
24. Drinking increases my aggressiveness	1	2	3	4	5
25. Drinking makes me feel like a failure	1	2	3	4	5

26. Drinking helps me to be more mentally alert	1	2	3	4	5
27. Drinking alcohol removes most thoughts of sex from my mind	1	2	3	4	5
28. I tend to adopt a "who cares" attitude when drinking	1	2	3	4	5
29. Drinking makes me more easily irritated	1	2	3	4	5
30. I am addicted to alcohol	1	2	3	4	5
31. Drinking brings out the worst in me	1	2	3	4	5
32. I feel less shy when drinking	1	2	3	4	5
33. Drinking makes me feel more violent	1	2	3	4	5
34. I am less discreet if I drink alcohol	1	2	3	4	5
35. When I am drinking it's easier to open up and express my feelings	1	2	3	4	5
36. I am powerless in the face of alcohol	1	2	3	4	5
37. When I'm drinking I avoid people or situations for fear of embarrassment	1	2	3	4	5
38. Drinking alcohol sharpens my mind	1	2	3	4	5
39. I feel disappointed in myself when drinking	1	2	3	4	5
40. Drinking is unimportant to me	1	2	3	4	5
41. I tend to avoid sex if I've been drinking	1	2	3	4	5

42. I lose most feelings of sexual interest after I've been drinking	1	2	3	4	5
43. I am clumsier when drinking alcohol	1	2	3	4	5

DEP PART 2: DSREQ

The following items ask you to describe your ability to handle drinking situations. Your answers will be completely confidential so please try to answer as honestly as you can.

The following pages contain a list of situations in which people may find themselves drinking alcohol. Most people find it is easier to resist drinking in some of these situations than others. Please mark the box beside each statement which best describes how much you could resist drinking in each case.

KEY:

I am very sure I could NOT resist drinking	I most likely could NOT resist drinking	I probably could NOT resist drinking	I probably COULD resist drinking	I most likely COULD resist drinking	I am very sure I COULD resist drinking
1	2	3	4	5	6

EXAMPLE:

HOW SURE ARE YOU THAT YOU COULD RESIST DRINKING ALCOHOL:

When your spouse or best friend is drinking?

If you think you could most likely resist drinking too, then tick the box in the column for number 5.

No.	Question	1	2	3	4	5	6
1	When I am out at dinner						
2	When I am playing pool or cards						
3	When I am watching TV						
4	When I see others drinking						
5	When I am uptight						
6	When I am angry						
7	When I am at a party						
8	When someone offers me a drink						
9	When I want to look sophisticated						
10	When I want to feel more confident						

11	When I am bored				
12	When I want to look better				
13	When I am at lunch				
14	When I feel ashamed				
15	When I am waiting for someone				
16	When I feel restless				
17	When I feel frustrated				
18	When I want to feel more accepted by friends				
19	When I am worried				
20	When I feel upset				
21	When I feel down				
22	When I feel nervous				
23	When I am on my way home from work				
24	When I feel sad				
25	When my spouse or partner is drinking				
26	When I am listening to music or reading				
27	When my friends are drinking				
28	When I am by myself				
29	When I have just finished playing sport				
30	When I am at a pub or club				
31	When I first arrive home				

THANK YOU

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APPENDIX 15

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APPENDIX 16

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London SE5 8AF
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Four complete copies of the manuscript must be submitted. Original figures should be supplied at the time of submission. Articles must be typed double-spaced throughout on standard sized paper (preferably A4) allowing wide margins all round. Where unpublished material, e.g. behaviour rating scales, therapy manuals, etc. is referred to in an article, copies should be submitted to facilitate review.

Manuscripts will be sent out for review exactly as submitted. Authors who want a blind review should mark three copies of their article 'review copy' omitting from these copies details of authorship and other identifying information. Submission for blind review is encouraged.

Abbreviations where used must be standard. The Système International (SI) should be used for all units; where metric units are used the SI equivalent must also be given. Probability values and power statistics should be given with statistical values and degrees of freedom. (e.g. $F(1,34)$ - 123.07, $p<.001$), but such information may be included in tables rather than the main text.

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Details of style not specified here may be determined by reference to the *Publication manual of the American Psychological Association* or the style manual of the British Psychological Society. Articles should conform to the following scheme:

(a) *Title page*. The title should phrase concisely the major issues. Author(s) to be given with departmental affiliations and addresses, grouped appropriately. A running head of no more than 40 characters should be indicated.

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BECKER, M. R., & GREEN, L. W. (1975). A family approach to compliance with medical treatment: A selective review of the literature. *International Journal of Health Education*, 18, 173-182.

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ROSKIES, E., & LAZARUS, R. S. (1980). Coping theory and the teaching of coping skills. In P. O. Davidson & S. M. Davidson (Eds), *Behavioural medicine: Changing health lifestyles.* New York: Brunner/Mazel.

(f) *Footnotes.* The first, and preferably only, footnote will appear at the foot of the first page of each article, and subsequently may acknowledge previous unpublished presentation (e.g. dissertation, meeting paper) financial support, scholarly or technical assistance, or a change in affiliation. A concluding (or only) paragraph must be the name and full mailing address of the author to whom reprint requests or other inquiries should be sent.

(g) *Tables.* Tables should be numbered and given explanatory titles.

(h) *Figure captions.* Numbered captions should be typed on a separate page.

(i) *Figures* Original drawings or prints must be submitted for each line or half-tone illustration. Figures should be clearly labelled and be camera-ready wherever possible.

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