Understanding the role of Trauma and Substance Misuse in Male Mentally Disordered Offenders

Nicola Arlette Ann Piek

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Centre for Forensic and Criminological Psychology

School of Psychology

College of Life and Environmental Sciences

University of Birmingham

B15 2TT

“Traumatic events are extraordinary, not because they occur rarely, but rather because they overwhelm the ordinary human adaptations to life.”

Judith Herman, *Trauma and Recovery*

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Abstract

This thesis aims to improve current understanding of the significance of exposure to traumatic stress in the lives of male mentally disordered offenders, who misuse drugs and alcohol. This is achieved by exploring the prevalence of trauma exposure in this population and sources of potentially traumatic events. The thesis then moves on to establish the impact of past trauma on current substance misuse behaviours within a secure forensic mental health setting and considers the implications this has for future treatment.

Chapter One provides an introduction to the field; exploring theories of the development of traumatic stress reactions, examining in more detail what is meant by trauma in the context of a male offender population and the challenges of conducting research in this area. Chapter Two presents a systematic review of the literature regarding the role of trauma in alcohol and substance using male offenders in prison and Forensic Mental Health Settings, seeking to establish the prevalence and nature of traumatic events. Prevalence estimates varied greatly across the ten studies included in the review, ranging from 10% (Gunter et al., 2008) to 85% (Owens et al., 2011). Only one paper attempted to explicitly quantify rates of trauma in male offenders who were regularly using substances at the time assessments of trauma were made, with the Clark et al., (2014) study suggesting a trauma prevalence rate of 15.7% in their sample of 89 offenders. The wide range in prevalence rates is in part accounted for by variation in study methodology, including conceptualisation of trauma and assessment tools used.

The main sources of trauma exposure were identified as witnessing death or serious injury, experiencing a physical or sexual assault as an adult and childhood sexual abuse and neglect. The results suggest that further research is needed into sources of trauma unique to the forensic mental health population with co-morbid substance use disorders, including; the impact of psychosis, offence commission and environmental factors related to the secure hospital or prison setting. Chapter Three presents a psychometric critique of the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES), one of the measures used

in the research described in Chapter Four, to assess recognition of problematic drug and alcohol use.

Chapter Four presents a research project conducted with male mentally disordered offenders detained in a secure hospital, aimed at establishing the prevalence of traumatic experiences and exploring the impact of stressful life events on recognition of drug and alcohol misuse, and motivation and confidence in addressing substance use. Without exception all participants had experienced some form of exposure to traumatic events over their lifetime, established through the use of the Stressful Life Events Screening Questionnaire (SLESQ). Typically participants reported exposure to multiple traumatic events, with figures above that expected in the general population. There was a positive correlation between experiencing multiple stressful life events and lack of recognition of problematic drug use, lower confidence and reduced internal motivation to address this. Trauma arising from sexual assault or from being in a frightening and helpless situation appeared to have the most significant impact on participants' internal motivation to address substance use. Chapter Five offers an overall discussion of the work presented and implications for practice and further research.

Chapter 1

General Introduction

The term trauma is originally derived from the Greek meaning, ‘a wound, a hurt, or a defeat’. It creates the idea not only of a physical injury having taken place but leaves an even more compelling image of an emotional injury in which the self is fundamentally harmed. Within the literature it is difficult to find an absolute, all-encompassing definition of psychological trauma, yet according to Weathers and Keane (as cited in Ford & Courtois, 2007):

> *Achieving a consensus definition of trauma is essential for progress in the field of traumatic stress. However, creating an all-purpose, general definition has proved remarkably difficult. Stressors vary along a number of dimensions, including magnitude (which itself varies on a number of dimensions, e.g., life threat, threat of harm, interpersonal loss…), complexity, frequency, duration, predictability, and controllability. At extremes, i.e., catastrophes versus minor hassles, different stressors may seem discrete and qualitatively distinct, but there is a continuum of stressor severity and there are no crisp boundaries demarcating ordinary stressors from traumatic stressors. Further, perception of an event as stressful depends on subjective appraisal, making it difficult to define stressors objectively, and independent of personal meaning making (p108).*

The complexity of traumatic stress makes it resistant to a concise, comprehensive definition, as it can used to refer to a discrete event or to the cumulative effect of multiple events over a period of time. These traumatic experiences may include interpersonal violence, such as physical or sexual assaults. It also encompasses developmental and childhood traumas and community violence, including abuse, neglect, family separation and war (Van der Kolk, 2005). Trauma may also be experienced by wider groups of people, through acts of genocide, racism and as by product of social inequalities and marginalisation (Blanch, Filson, Penny & Cave, 2012).

What is apparent is that the harms detailed above can arise from multiple sources, through directly experiencing, witnessing or learning about a close friend or family member

experiencing a traumatic event or less directly by being subjected to repeated or extreme exposure to the aversive details of a traumatic event. Most notably it is a highly subjective process whereby the traumatic experience is identified through exposure to actual or threatened death, serious injury or sexual violation (American Psychiatric Association, 2013).

Within the traumatic stress literature it is perhaps the diagnostic label of post-traumatic stress disorder (PTSD), that has received the most attention from researchers and over time this concept has been subject to revision and refinement. In 2013, the American Psychiatric Association revised the PTSD diagnostic criteria in preparation for the fifth edition of its Diagnostic and Statistical Manual of Mental Disorders (DSM-5). This began with the introduction of a pre-school subtype of PTSD and further revisions to include a history of exposure to a traumatic event with symptoms from four clusters; intrusion, avoidance, negative alterations in cognitions and mood, and alterations in arousal and reactivity. It also considered duration of symptoms, an assessment of functioning and clarified those symptoms that could not be attributed to substance use or a co-occurring medical condition. As such current thinking regarding post-traumatic stress and subsequent stress and trauma disorders has moved away focusing solely on the specifics of a traumatic event to an examination of the interaction of a number of factors that impact on how that trauma is experienced (Briere and Spinazzola, 2005).

Prevalence of Traumatic Experiences

Estimates of the prevalence of traumatic events in the general population tend to show great variance, often depending on country of study. In a study by Kessler, Sonnega, Bromet, Hughes and Nelson (1995) looking at a sample from the USA displaying manifest symptoms of PTSD (as cited in Pimlott-Kubiak, 2004) rates of PTSD ranged from approximately 61% in men to 51% in women. This study was unusual in identifying such high overall rates and higher rates for men than women. In contrast in another North American sample, this time involving 1,002 Canadian participants, a far more modest estimate of 2% had been given (Stein, Walker, Hazen & Forde, 1997). Leaning towards the more conservative population estimates it could be said that a diagnosis of PTSD is not typical and that lower population

estimates are more in keeping with prevalence estimates of other mental disorders, such as general population estimates of Schizophrenia, which was estimated at 1.1% in a US sample (National Institute of Mental Health, 2010).

However, moving outside of the diagnostic rigidity of the PTSD diagnosis, exposure to a potentially traumatic event is thought to be far more common, particularly in the USA with community surveys such as those conducted by Norris (1992) suggesting a prevalence of 69%. It is noted however, that this figure was derived by looking at the frequency of ten potentially traumatic events in a sample of 1,000 black and white, male and female adults. The impact of these events was analysed as a continuous variable, perceived stress, with black men appearing to be most vulnerable to effect of events.

Many authors consider trauma histories and diagnoses of full and partial PTSD to be far more common among forensic mental health patients (Spitzer et al. 2001). However even in this respect population estimates of PTSD continue to range widely from 7% to 40% among those with a co-morbid mental illness (specifically Bipolar Disorder) (Thatcher, Marchand, Thatcher, Jacobs and Jensen, 2007). Within prison and correctional settings rates range from 21% in a sample of sentenced prisoners with current PTSD (Powell et al, 1997) in a rural United States sample to 52% (of a sample of 80 homicide offenders, (Pollock, 1999) in a Northern Irish population and it is also of note that the nature of the offence may have influence here. However, all prevalence estimates are to be treated with caution as there has been some debate concerning the reliability, in particular, of self-report measures of trauma exposure. For example, Weathers and Keane (2007) note that potential inconsistencies in reporting may be attributable to a number of factors such as the phrasing of test items, responsivity issues such as fatigue or more broadly it may reflect how comfortable individuals are with the assessment process and the conditions under which the assessment is being made.

At present there is no review data available for prevalence rates of PTSD or complex trauma in substance abusing, male forensic mental health or male prison populations with co-morbid

mental illness, hence the focus of this thesis, in seeking to establish the prevalence of trauma in this population and explore the nature of this relationship in more detail.

Nature of Traumatic Experiences

Within the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), PTSD, as well as the diagnosis of Acute Stress disorder, has been moved from a class of anxiety disorders into a new classification of 'trauma and stressor-related disorders'. Inclusion in this classification requires exposure to a traumatic or stressful event as a diagnostic criterion. Naturally it is not possible to exhaustively specify what these events might be, therefore the criterion encompasses; the homogeneous expression of anxiety or fear-based symptoms, anhedonic and dysphoric symptoms, externalizing anger or aggressive symptoms, or dissociative symptoms (American Psychiatric Association, 2013).

Essentially to qualify as a traumatic experience, the majority of clinicians and researchers agree that the 'trauma' must involve actual or threatened, death, serious injury or sexual violence (American Psychiatric Association, 2013). Exposure to trauma can be from direct involvement in the event, witnessing the experience, or learning about it happening to a loved one (this must be a violent event or accident, death by natural causes it not included here). Those involved in working in the emergency services would also have the potential to be included within these criteria due to repeated extreme exposure to the details of trauma.

Assessment of Trauma

Elhai, Gray, Kashdan and Franklin (2005) conducted a web-based survey of the International Society for Traumatic Stress Studies' members (n = 227) working in clinical and research settings, regarding their choice of instruments to assess trauma exposure and features of posttraumatic stress. The most commonly used assessments were the Posttraumatic Stress Diagnostic Scale, Trauma Symptom Inventory, Life Events Checklist, Clinician-Administered Post-traumatic Stress Disorder (PTSD) Scale, PTSD Checklist, Impact of Event

Scale—Revised, and Trauma Symptom Checklist for Children. This range of assessments is indicative of the multitude available to clinicians, with selection often guided by the focus of research or remit of treatment. Assessments may seek to measure the types of trauma a person has been exposed to, or severity of the traumatic event experienced. It has been argued that it is important to have an awareness of the commonly employed measures of trauma exposure as this provides important information about concepts underpinning the definition of trauma and convention in assessment practice (Elhai et al, 2005).

Consequences of Trauma Exposure

The development of traumatic stress can be viewed as a response to trauma, i.e. a psychologically or physically damaging event or experience. However given the difficulty in generating a definitive definition of traumatic stress, the concept is perhaps best understood by exploring what the experience *does* to the individual. Terr (1990), along with many other researchers, sees trauma as originating from an external event, internalised in the mind. Van der Kolk (1989, p393) moves this concept a stage further, asserting that "Traumatization occurs when both internal and external resources are inadequate to cope with external threat". Crucial to understanding trauma in this way is that it is not an event per se that is damaging but how the individual's mind and body reacts and ultimately copes, that has the most significance.

As a species we are hardwired with a deep rooted primitive physical and mental reaction to threat, known as a 'fight or flight' response. This response is triggered whenever we perceive ourselves to be under threat and over time past experiences of feeling threatened become connected to present adverse experiences. With each triggering of the fight or flight response we form mental connections resulting in increased sensitivity to potential threat, so that in those exposed to multiple adverse experiences and stressful life events, even a minor threat can trigger this sequence of physical, emotional and cognitive responses (Bloom, 1999).

Of course in addition to experiencing increased sensitivity following exposure to cumulative traumas, it is not always possible to fight back or run away from a perceived threat and the

inability to take action can lead to a powerful, crippling experience of helplessness. In particular following on from chronic trauma exposure, or in the face of an experience that is so overwhelming that fundamental coping mechanisms are challenged it can be the case that an individual loses all sense of their ability to have mastery over their situation. At this point a state of *learned helplessness* (Maier & Seligman, 1976) ensues in which the mind and body remain on high alert for the recurrence of a traumatic experience, and at the same time shows a reduced sense of self efficacy and agency in terms of coping. Maier and Seligman (1976) originally hypothesised that when an event is perceived as being uncontrollable the organism learns that behaviour and outcome are independent, which produces the motivational, cognitive and emotional effect of uncontrollability. Although the evidence base particular to this field is limited, it is tempting to apply the concept of learned helplessness to an understanding of trauma response in a substance using population as it is thought be to effective in describing motivational and problem solving deficits in chronically traumatised individuals (Reyes, Elhai & Ford, 2008) and may help explain what can be described as a reliance on maladaptive coping mechanisms often seen in this population.

Trauma has also been found to have an impact at a neurobiological level as dysregulation of the fight or flight response and stress mediating systems is seen to lead to longer term functional impairment. For example, following trauma exposure reduced volume and activity in the hippocampus and increased activity in the amygdala have been identified, leading to altered stress responses and extinction processes and an increase in hyper vigilance and impaired discrimination of threat (Sherin & Nemeroff, 2011). Likewise neurochemical changes have been found to increase arousal, the startle response and encoding of fear based memories (Shin & Liberzon, 2010). All of which suggests the experience of repeated traumatisation and exposure to multiple traumatic events is of prime importance (Van der Kolk & Saporta, 1991). In addition to commonly reported experiences of reliving the trauma, or experiencing ‘flashbacks’ there may also be a bias towards recall of trauma-related material and difficulties in retrieving autobiographical memories of specific incidents, in part dependent on the intensity of the emotion experienced during the traumatic event (Buckley, Blanchard, & Neill, 2000), which affects how information is processed and understood.

It is noted that alcohol is commonly used and abused by individuals who have suffered a trauma (Stewart, 1996). The function of this may be as a means of regulating physiological arousal detailed above, by promoting sleep, blocking painful memories and numbing responsiveness (Keane & Wolfe, 1990) and whilst this might be effective as a short term management strategy, prolonged use can lead to further behavioural dysregulation and eventual comorbid substance misuse difficulties (Knight & Taft, 2004). Numerous studies have also outlined memory impairment following trauma exposure, contributing further to emotional and behavioural dysregulation, including reliance on substances (Halligan et al, 2003).

Psychological Theories related to Trauma Exposure

Emotional Processing Theory

The work of Foa and Riggs (1993) and Foa and Rothbaum (1998) dominates this area and proposes that those individuals with either more rigid positive or rigid negative pre-trauma schemas and world views would be more vulnerable to later developing PTSD, following trauma exposure. This is said to occur as positive views about the self and the world would be contradicted by experiencing the traumatic event and rigid negative views about the self and the world would be confirmed by the traumatic event (Brewin & Holmes, 2003). Foa and Rothbaum (1998) also emphasised the predominance of negative appraisals of responses to traumatic events, within the self and interpreting the intent of others and subsequent development of behaviours which could further contribute to individuals' perceptions of incompetence and the world as a hostile place.

Psychodynamic Model

Horowitz's (1986) psychodynamic model focuses on cycling phases of re-experiencing (reliving the experience or intrusive thoughts about the traumatic event) and the alternating phase of avoidance (through numbing or denial). It is noted that a great deal of anxiety is produced when a traumatic event is experienced. When faced with trauma related information at a later stage the anxiety re-emerges and threatens to overwhelm the individual and impair

functioning. Defensive inhibitions are used to lower anxiety levels and at the same time awareness of trauma increases, inviting the cycle to continue and potentially leaving the individual open to seeking alternative means to manage intolerable emotions.

Ehlers and Clark's Cognitive Model

This model reflects the psychological consequences of a trauma having occurred in the past with a sense of threat carrying into the future. The major mechanism that produces this effect centres on negative appraisals of the traumatic event, trauma sequelae, intense emotion and the nature of the traumatic memory. There is thought to be a reciprocal relationship between the nature of the trauma memory and the appraisals of the trauma and its sequelae, as in those with persistent PTSD, recall of a traumatic event is biased by internal appraisals and information is selectively retrieved to be consistent with these appraisals (Ehlers & Clark, 2000). Such biased appraisals may contribute to an individual's sense of helplessness and victimisation, leading again to the adoption of maladaptive behavioural strategies and faulty cognitive processing styles. Examples of these strategies include; thought suppression or conversely rumination on the trauma and its consequences, avoidance of reminders of the trauma and the use of alcohol or substances to manage symptoms.

Trauma Research with Offenders

The area of traumatic stress research has developed considerably over the last 20 years, to include a broader consideration of sources of interpersonal violence, the range of events that might be seen as traumatising and a better understanding of the biopsychosocial impact of traumatic events (Carlson, 2005). In the past research has tended to concentrate on victims of single violent events, looking at exposure to traumatic specific events such as sexual assault or combat participation and subsequent mental health problems. The focus has been on specific populations such as combat veterans, disaster victims, or more typically female victims of violence or sexual assault Thoresen and Overlien (2009), whilst neglecting a large swathe of the population: Male offenders, which according to current figures number in the region of 81,000 in the UK. Within this figure of 81,000 offenders; male, mentally disordered offenders can be considered to be a key population as psychiatric diagnoses and particularly those with an affective component were found to be a strong indicator of PTSD (Gray et al.,

2003). PTSD in turn is thought to increase the risk of both general and serious recidivism and it is suggested it should be an intervention target to reduce justice-system involvement (Sadeh & McNiel, 2015).

As this thesis focuses on the impact of traumatic experiences of male offenders, particularly those with co-morbid mental disorder, who have misused substances it is necessary to have an understanding of how these concepts are characterised in the literature.

Mentally Disordered Offenders

The definition of Mentally Disordered Offenders (MDOs) used throughout this thesis relates the definition of mental disorder outlined within the 1983 Mental Health Act. It is noted that this definition has since been updated by the 2007 Mental Health (amendment) Act, which defines mental disorder as 'any disorder or disability of the mind' (Mental Health Act 2007, Chapter 12, Part 1). However, the former definition will be used as the 1983 Act is perhaps more reflective of the way in which MDOs are characterised in the latest available trauma and addictions literature. A MDO is an individual who is deemed to be mentally disordered and who has committed a criminal offence and for the purposes of this thesis is detained in a prison or forensic mental health setting.

Under the 1983 Mental Health Act, mental disorder is defined in the following ways;

Mental Disorder means mental illness, arrested or incomplete development of mind, psychopathic disorder and any other disorder or disability of mind.

Severe mental impairment means a state of arrested or incomplete development of mind, which includes severe impairment of intelligence and social functioning

Mental impairment means a state of arrested or incomplete development of mind (not amounting to severe mental impairment) which includes significant impairment of intelligence and social functioning and is associated with abnormally aggressive or seriously irresponsible conduct on the part of the person concerned

Psychopathic disorder means a persistent disorder or disability of mind (whether or not including significant impairment of intelligence) which results in abnormally aggressive or seriously irresponsible conduct on the part of the person concerned.

Substance use

Studies have consistently shown that those seeking PTSD treatment are more likely to meet the criteria for drug abuse or dependence, with a similar relationship for those seeking substance use disorder treatment (Gulliver & Steffen, 2010). The comorbidity of trauma with substance use disorders is a complex issue, with treatment of PTSD in substance abusers requiring particular sensitivity so as not to precipitate relapse (Brady, Killeen, Brewerton & Lucerini, 2000).

As a note on terminology; throughout this thesis the terms problematic drug and alcohol use, substance using, substance misuse or abuse and substance use disorder are used interchangeably. The rationale for this is not to deny the distinct features of the terminology or differing demands of those with abuse and dependence issues, but is reflective of the complex needs and the potential for harm to be caused to mentally disordered offenders who regularly drink alcohol or take illicit substances. The sum of these definitions is perhaps best expressed by the National Institute of Clinical Excellence (2007, p52) who define substance misuse as "intoxication by – or regular excessive consumption of and/or dependence on psychoactive substances, leading to social, psychological, physical or legal problems. It includes problematic use of both legal and illegal drugs (including alcohol when used in combination with other substances)". This thesis makes no distinction between the consumption of legal and illicit substances or the regularity of use, considering instead the role of substance misuse in relation to traumatic experiences.

Theoretical relationship between trauma exposure and substance use

Identifying a causal relationship between trauma exposure and substance use is problematic as the relationship is thought to be bi-directional and cyclical. Breslau and Chilcoat (1998) offer three hypotheses to explain the relationship;

1. The *self-medication hypothesis*, which suggests substances are used to manage symptoms, such as intrusive memories or in an attempt to relieve or numb emotional pain or block out intrusive thoughts.

2. The *high-risk hypothesis,* which states that drug and alcohol use places people who use substances in high-risk situations, which in turn can increase the individual's chance of being exposed to events that lead to trauma.

3. The *susceptibility hypothesis,* which suggests that people who use substances are more susceptible to developing PTSD after exposure to trauma than those who do not (SAMHSA, 2014). This increase in vulnerability may result from a lack of resilience, a failure to develop effective stress management strategies, changes in brain chemistry, or damage to neurophysiological systems due to extensive substance use.

A history of trauma exposure is felt to limit progress in recovery from the use of substances and increase the potential of a relapse, with individuals who have PTSD and a substance use disorder achieving poorer treatment outcomes than those with other co-occurring disorders or who only abuse substances (Brown, Read, & Kahler, 2003). There is also the potential for clients engaging with treatment to hold more negative expectations about their ability to cope without the use of substances, especially in response to negative emotions and testing situations (Traynor, Power, Summers & Hughes, 2012).

Within the treatment setting there is an identified difficulty in clients engaging meaningfully in services, a condition all the more prominent for those in forensic mental health settings who have been mandated to treatment (Ford, Hawke, Alessi, Ledgerwood & Petry, 2007). These difficulties are not solely located with clients, as avoidance symptoms; for example may be misinterpreted as lack of motivation or unwillingness to engage in treatment. In addition to this the treatment itself has the potential to provoke an exaggerated response from a trauma survivor who has profound traumatic experiences of being helpless, feeling trapped and controlled (SAMHSA, 2014). This is particular true for those offenders who have been exposed to trauma, have used substances and are currently incarcerated in services that have not been *trauma-informed.* That is to say developed, grounded in and directed by a complete understanding of how trauma exposure affects service user's neurological, biological, psychological and social development (Paterson, 2014).

Aims of the Thesis

This thesis contributes to the literature as it aims to improve current understanding of the significance of exposure to traumatic stress in the lives of male mentally disordered offenders, who misuse drugs and alcohol.

Specific thesis aims

To review the literature to establish prevalence rates and nature of trauma in substance using and non-substance using offenders.

To explore the prevalence of trauma exposure, in terms of stressful life events, in a sample of male mentally disordered offenders detained in a forensic mental health setting.

To identify sources of potentially traumatic events in this population.

To explore the relationship between stressful life events and recognition of problematic substance use.

To explore the relationship between stressful life events and motivation, both internal and external, to address problematic substance use.

To explore the relationship between stressful life events and confidence in being able to make changes to problematic substance use.

Chapter 2

A Systematic Review Exploring the role of Trauma in Substance Using Male Offenders in Prison and Forensic Mental Health Settings.

Abstract

Background: Research has demonstrated that mentally disordered offenders (MDOs) detained in prison or secure forensic mental health settings, report higher rates of drug and alcohol use, post-traumatic stress disorder (PTSD) and greater trauma exposure than the general population. However, the identification of trauma in this population is problematic due to difficulties in establishing a consistent working definition of the term trauma and issues with the use of self-report and clinical interview measures in identifying potential sources of trauma. This is further complicated by the likelihood that in an offender or forensic mental health population a trauma related response may be masked by substance use, mental illness (such as psychotic dissociation) and by antisocial behaviours.

Aims: Specifically this review aims to examine;

The prevalence rates and nature of trauma in substance using and non-substance using offenders.

The relationship between trauma exposure and substance use in male offenders, in Prison and Forensic Mental Health populations.

Method: Papers were identified from searches of six electronic databases (1995- February 2014) and reference lists of relevant hits. Additionally a hand search of key journals in the field and search using 'open Sigle', to account for the grey literature was conducted. 683 studies were reviewed for inclusion, based on consideration of title and abstract. Papers relating solely to female, adolescent or exclusively veteran populations were excluded from the study, as were those which showed no consideration of the impact of substance misuse. Opinion papers, commentaries, editorials, dissertations, poster presentations and research published prior to 1995 was also excluded.

Results: The quality assessment indicated that ten studies were suitable for inclusion in the review. Nine of the ten studies included in the review offered percentage estimates of trauma experienced in their samples. These estimates varied greatly from 10% in the Gunter, Arndt, Wenman, et al, (2008) study, rising to 94% of the Barrett, Mills and Teeson (2011) sample facing exposure to at least one traumatic event. Similar variation in percentages of study populations endorsing substance use were apparent, ranging from 90% in the Gunter et al, (2008) study to 25% in the Armstrong et al, (2008) study. There were a range of traumatic experiences included across the ten studies reviewed; however they all shared similar themes of witnessing or experiencing direct harm to the person, such as physical or sexual assault.

Conclusions: The findings of the review highlight that there is a significant gap in the literature and that there are many areas for development, particularly in terms of the continued wide variation in prevalence estimates of exposure to traumatic events in a male offender population with concurrent drug or alcohol misuse. Among the papers included the review, estimates of the rates of trauma in male offenders ranged widely, from 10% (Gunter et al., 2008) to 85% (Owens et al., 2011). To some extent this mirrors the degree of variation shown in general population estimates, but notably is in stark contrast to the majority of considerably more conservative estimates of post-traumatic stress disorder in the general population, as for example those by Helzer, Robbins and McEvoy (1987) which suggest rates of just 1%.

The review emphasises how uncommon an area of study this is. It highlights that to some extent the significant differences in the estimates of rates of trauma in the study population can be accounted for by the variation in assessment measures used and the criteria for establishing the presence of exposure to traumatic stressors and historical or problematic drug or alcohol use. Despite these complexities and even at lower end prevalence estimates, the potential for a drug or alcohol using male offender population to have been exposed to multiple sources of potentially traumatic events represents a significant clinical concern.

With regard to the nature of trauma experienced by male offenders there was agreement about the major sources, including; witnessing death or serious injury, experiencing a physical assault or sexual assault as an adult and childhood physical or sexual abuse and neglect. Of particular importance to this population were the roles of victimisation and the impact of being incarcerated as a mechanism for activating trauma responses. Pimlott Kubiak (2004) drew particular attention to potential for male offenders to be become victims of physical and sexual assault within the prison setting and thereby traumatised further within an environment which conversely is thought to be more 'protective' for women.

In terms of the relationship between trauma exposure and substance use in male offenders, the review demonstrated a positive correlation and although not statistically significant there was a clear relationship between the high prevalence of substance misuse among the offender population and higher reports of lifetime exposure to traumatic experiences, in comparison to the general population.

The Barrett, Mills and Teesson (2011) study exemplifies this relationship, with bivariate associations found between violence perpetration and trait aggression, higher levels of alcohol and cannabis use and the experience of more severe PTSD symptoms, particularly in relation to hyper-arousal. Notably, 95.7% of their sample of 102 participants recruited to a RCT of an integrated treatment for comorbid SUD and PTSD became intoxicated and experienced trauma before the commission of a violent crime. Likewise, Zweig, Yahner and Rossman (2012) found in their sample of 674 male offenders, experiencing physical or sexual victimisation positively increased instances of drug use, up to 18 months after the event, even when controlling for participation in substance use programs. However, the only paper that explicitly quantified rates of trauma in male offenders who regularly used substances, was the study by Clark et al., (2014) suggesting a more moderate estimate of trauma exposure at 15.7% in their sample of 89 offenders.

In sum this review focuses on the centrality of trauma and substance use in the lives of male offenders. However, these findings should be viewed conservatively due to the small number of studies eligible for inclusion in the review, methodological variance within papers and the

heterogeneity of the MDO population. Despite these limitations it is reasonable to argue that trauma has a significant role to play in the lives of male offenders, particularly those who use drugs or alcohol and is worthy of further exploration.

Introduction

Psychological Trauma is a complex concept that might best be described as the impact of an extreme stressor or critical incident on a person's biological and psychological functioning (Flannery, 1999). Equally Psychological Trauma can be understood as encompassing multiple traumatic experiences in which a single incident falls along a continuum of trauma. As an extension to this, the notion of Type III Trauma (Solomon & Heide, 1999) or Complex Trauma refers to cumulative, repeated traumas that occur over a longer period of time, rather than a single discrete incident and encompasses attachment related trauma, child and domestic abuse (Courtois, 2008).

Trauma symptomatology, the impact of exposure to traumatic stressors and Post-Traumatic Stress Disorder (PTSD), are beginning to be explored and recognised as significant clinical issues in relation to offender management. A study conducted in the USA found that up to 90% of justice-involved youth had exposure to some type of trauma, typically beginning in early life, in multiple contexts, and persisting over time (DierkhisinG, Ko, Woods-Jaeger, Briggs, Lee & Pynoos, 2013). Indeed the IAPT *Offenders Positive Practice Guide* (2013) states that PTSD and complex trauma are more prevalent among sentenced prisoners compared to the general population, potentially representing a significant unmet service need with far reaching consequences.

In addition to increased exposure to traumatic life events, substance use is highly prevalent in MDOs and general offender populations. Miller (2012) and Kinsler and Saxman (2007) argue strongly that prison itself can be a traumatising environment and that offenders cope with

prior abuse through three common pathways; depression, anger and violence, and substance abuse. Likewise, Najavits (2009) suggests that in an offender population, with limited alternative coping strategies, substance abuse may be used to self-medicate trauma symptoms. Despite the literature demonstrating a strong relationship between substance use and trauma in the general and offender population, with a particular focus on the experiences of women (Zlotnick, Najavits, Rohsenow & Johnson, 2003), little consideration has been given to the role of trauma, substance use and offending behaviours in male MDOs. This review aims to address this deficit in the literature by exploring the role of trauma in substance using male MDOs in prison and Forensic Mental Health settings.

Role of Trauma in Offending

Trauma and Offence Commission/Victimisation

Neller et al (2005) in their review of the trauma literature suggest that there is a causal link between traumatic experiences, such as physical or sexual abuse and future violent behaviour, pointing to being the victim of violent crime as one of the better predictors of future violence perpetration. Moloney, van den Bergh and Moller (2009) note that trauma histories and experiences of victimisation are over represented in prison populations and Kristiansson, Sumelius and Sondergaard (2004) also suggest that occurrences of interpersonal assault increase the risk of PTSD. However, accessing this data in forensic psychiatric settings is notably difficult and highly dependent on the measures being used.

Likewise Welfare and Hollin (2012) see evidence of the potential for perpetration-induced trauma within both adult prison and mental health settings. Kamphuis and Emmelkamp (2005) in a review of the literature found that a high proportion of offenders and MDOs have experienced traumatic events and that in two studies, focusing specifically on homicide found that the majority of these high risk offenders had experienced severe physical or sexual abuse as children.

It is also important to acknowledge that exposure to a traumatic experience is not the sole reserve of the *victim*, as being the perpetrator of violence, or witness to it, could itself be said to play an important role and potentially act as a traumatic event in the lives of many offenders and forensic mental health patients. Warren, Loper and Komarovskaya (2009) in their study of female inmates found that those who had experienced multiple and severe traumas reported that *witnessing* could itself be traumatic and can be associated with full PTSD.

There are a range of distinct features that are pertinent to the examination of trauma in mentally disordered offenders, of which the potential for the commission of a criminal act, such as manslaughter, arson, rape or assault, to be traumatising for the perpetrator is just one example. This idea of the perpetrator of a crime being traumatised can be a difficult concept to express and can meet with resistance in some quarters. If 'criminals' are also considered to be 'victims' there may be concerns that seriousness of the offending behaviour is minimised and the offender is excused punishment. However, to ignore the potential for this process of traumatisation to take place in both victim and perpetrator would be a massive oversight in the practice and development of forensic psychology. If the victim of a crime, often the case in interpersonal violence, is known to the offender then bereavement issues still need to be addressed. The manner in which a crime is committed, relating to the amount of force used, loss of emotional and physical control and witnessing the level of injury to another person can also without doubt be traumatising.

Primarily an exploration of trauma related to killing another person has concentrated on the experiences of combat veterans and although there is a wealth of research into trauma in this population, it is beyond the scope for inclusion in this review. However the principles underpinning the concept are worthy of retention as MacNair (2002) also introduces the concept of 'perpetration-induced traumatic stresses', extending the concept from experiences of veterans to that of anyone causing significant harm to another. More recently attention has turned to specifically investigating trauma related to the perpetration of a violent offence. Kruppa, Hickey and Hubbard (1995) are a prime example of shifting the focus back on to offenders by looking at whether PTSD could be caused by violent offending. Kruppa et al., (1995) found high rates of current and lifetime PTSD in those detained by the Mental Health

Act, under the category of psychopathic disorder, and saw value in devoting their attention to violent offenders within this group, a move echoed by the work of Rogers, Gray, Williams and Kitchiner (2000).

Continuing to focus on violent offenders, Crisford, Dare, and Evangeli (2008) in their work with mentally disordered offenders, have concentrated on measuring the association between offence-related guilt cognitions and offence-related trauma symptomology. This association was explored using variables related to; the severity of the offence, the offender's relationship to the victim, a history of other violent offences, substance use and psychosis at the time of the offence. There is also a theory practice link being made here, emphasising the importance of keeping the role of trauma in mind as PTSD is considered to be "an additional intrapsychic stressor that hinders the treatment of psychiatric conditions such as paranoid schizophrenia" (Crisford et al, 2008, p105).

Crisford, Dare and Evangeli (2008) highlight a particular role for offence-related guilt cognitions in increasing the potential for trauma symptomatology to emerge, once again directing a more measured consideration of the relationship between offender and victim. This is of particular significance to forensic mental health settings; if the offence is committed in the context of symptoms of an active mental illness such as psychosis, which, once managed through medication may result in the removal of the *protection* of a delusional system and could leave the way open for experiences of guilt and shame. Memories of the offence and specific details of the individuals' actions may emerge long after the offence commission and sentencing has been made and these memories may take on the form of traumatic, intrusive thoughts, Gray, Carman, Rogers, MacCulloch, Hayward and Snowden (2003).

Byrne (2003) moves from guilt related cognitions and looks more to the initial breakdown and deterioration of an offender following commission of a crime, and explains how an uncontrolled, unplanned act or one resulting in a significant loss (e.g. death of another) may violate the offender's schematic model of themselves (e.g. as someone who would not kill another person), in such a way as to cause lasting trauma. Again the nature of the violent act

appears to be of importance here as Collins and Bailey (1990) found that offenders who used reactive or expressive rather than instrumental violence were at greater risk of developing PTSD and add further weight to the type of the offence being of importance. Similarly using a small case study design, Combaluzier (2009) suggests that post-traumatic difficulties in perpetrators of violence are an under explored clinical problem and it has been suggested that PTSD can impact on an individual's mental stability and ability to stand trial (Aprile, 2008), potentially affecting the pathway through the forensic mental health services or criminal justice.

To date limited consideration has been given to cultural differences in experiences of exposure to violence. For example in countries where there is civil war and unrest exposure to extreme violence may become a daily occurrence. Kluttig, Odenwald and Hartmann (2009) go some way to address this by making a special case for refugees and migrants who have been caught in a 'cycle of violence' in their country of origin, moving from being the victim of violence and experiencing traumatisation to becoming the offender. They argue that in the case of Germany, where refugee mentally disordered offenders may face deportation co-operation with treatment is crucial in relation to leave to remain in the country. However, if this group were subjected to traumatic experiences in the past by state authorities, this co-operation could be hampered, further complicating and limiting access to treatment.

Despite this burgeoning research the question of who becomes traumatised following exposure to stressful life events remains impossible to answer definitively and the overall clinical picture has a tendency to blur. A study by Payne, Watt, Rogers and McMurran (2008) suggests that prisoners with no previous traumas are at most risk of developing offence related PTSD, showing just how significant this one experience can be and that lower levels of prior trauma exposure can in fact be protective against the development of PTSD, further complicating the picture. However, with limited literature in the area there is the potential to overstate the impact of offences involving lethal violence on subsequent trauma, as Payne et al. (2008) found that PTSD symptoms were common, reaching rates of 31% in life sentenced prisoners; however, they found no significant difference between those who had and had not committed a homicide offence.

Trauma and Imprisonment

DeLisi et al. (2010) provide a framework for understanding the consequences of trauma in the prison population, suggesting those with significant traumatisation histories have worse substance abuse histories, show increased experiences of anger, depression or anxiety and are more likely to contemplate suicide. The concept of victimisation at an early developmental stage also has an important role here, outlined by Driessen et al. (2006) demonstrating the high prevalence of childhood trauma in their prison sample. They also found that the severity of childhood trauma was related to the presence of Axis I and Axis II disorders, again demonstrating the complex interplay between conditions.

Other issues of trauma and imprisonment strongly reflect the physical and systemic environment and relate to potentially re-evoking past traumas and former abuses. This may take the form of offenders reliving negative interactions with authority figures (such as health care or prison staff), issues related to deprivation of liberty and physical restraint. It is clear that these factors also have a parallel in secure forensic mental health settings. Prisons per se are considered to be a source of unavoidable trauma triggers (Ardino, 2012) and prisoners with abuse histories may also be more vulnerable to being exploited in relationships with peers and staff as a consequence of power imbalances inherent in the system. In addition the volatility and hostility of the prison environment should be noted, as Toch (1998) cited in Pimlott-Kubiak (2004, p425) highlights the “threat of violence within the male prisons for physical and sexual assault”, making the ‘secure’ environment far removed from a place of safety and a more commonplace notion of security.

In this respect even the care setting, which might be housed within a prison medical wing or secure forensic mental health setting, can be a continued source of exposure to traumatic stressors, becoming the physical embodiment of the site of trauma stimulus, which the person cannot avoid. The work of Hammer, Springer, Beck, Menditto and Coleman (2011) reinforces the potential for healthcare settings to be re-traumatising as their research points to a link between childhood physical and sexual abuse and those inpatients experiencing higher rates of seclusion of restraint. Given the unique contributions of offence commission, victimisation, imprisonment to traumatic experiences in an offender population it is

reasonable to expect that incidences of trauma exposure and a lifetime diagnosis of PTSD is likely to be higher in an offender population. This may be especially true for those with co-morbid mental disorder, who potentially lack the resilience to cope in extremely stressful situations.

Role of Trauma in Substance Use

The misuse of substances, including the use of alcohol, so-called legal highs and illicit drugs is well documented among offender populations. Carlson, Shafer and Duffee (2010, p504) in their prison sample of over 2,000 inmates in North America, state "self-reported prevalence rates for substance abuse problems range 79-81%", showing the use of substances is a common occurrence. With regard to a wider clinical population, Souza and Spates (2007) suggest that up to 50% of inpatient substance misuse clients would also meet the criteria for PTSD. Back (2010, p11), also using a North American sample, echoes this with her estimate that "up to 43% of civilians with PTSD meet criteria for lifetime substance use disorders". Gulliver and Steffen (2010, p1) concur, stating "epidemiological studies have consistently shown that individuals seeking PTSD treatment are more likely to meet the criteria for drug abuse or dependence". In making sense of these statistics it has long been suggested that a functional relationship between the two conditions of traumatic stress disorders and substance use disorders exists, particularly in respect of presenting difficulties with emotion regulation and the management of anxiety and arousal.

Unlike other aspects of trauma research this link between trauma exposure and substance use is not necessarily so heavily influenced by gender (Swogger, Conner, Walsh & Maisto, 2011) point to a strong association between experiences of childhood abuse and the subsequent development of a drug use disorder in offenders, irrespective of their gender. Kmett Danielson et al. (2009) echo this, stating that lifetime exposure to traumatic events increases the risk for developing substance use disorders in men as well as women. Likewise a study by Green, Miranda, Daroowalla and Siddique (2005) showed repeated findings for high levels of

trauma exposure and substance use problems among substance using women. Dansky, Roitzsch, Brady and Saladin (1997) further show that among the general population, individuals with substance use disorders are at greater risk of trauma exposure and subsequent development of PTSD. In terms of the direction of the relationship between substance use and trauma; not only does the risk of trauma exposure increase following the use of substances, conversely it may also be the case exposure to traumatic experiences, particularly early in life is linked to later substance use disorders and comorbid PTSD (Khoury et al, 2010). Likewise process is not confined solely to the use of illicit substances as the literature suggests that those exposed to trauma are at a significantly increased risk for the development of alcohol use problems (Stewart, 1996).

Notably, when the concept of trauma is viewed less rigidly in diagnostic terms, i.e., not limited to PTSD or it includes figures illustrating exposure to one or more traumatic event, estimates of trauma among a substance using population can again be seen to rise. For example, in a study in the United States by Farley (2004) which explored the trauma histories of 959 patients at an outpatient chemical dependency clinic, 89% endorsed experiencing at least one traumatic lifetime event. The nature of these traumatic events included serious accidents, robbery, witnessing someone being killed or seriously injured and partner violence. Some authors would also argue that it is not necessarily that trauma be derived from an exceptional, life threatening event. Shora, Stone and Fletcher (2009) found significant 'life events', such as bereavement or divorce were as traumatising as occurrences that might be thought of as more traditional traumatic events such as abuse or a violent assault. The essential element here appears not to reside with the event itself but with how it is experienced and adds credence to the idea that a range of stressful life events can be seen to contribute to the use of alcohol and substances to ameliorate the psychological impact.

The potential for further commonality between substance misuse and PTSD or trauma reactions, in terms of activation of neural pathways is outlined by Dass-Brailsford and Myrick (2010), highlighting the effects of substances on neurotransmitters in increasing or decreasing the body's arousal level, impacting on hyper-arousal and hyper-vigilance. In contrast to the literature outlined earlier, Johnson, Heffner, Blom and Anthenelli (2010) seek to further refine the relationship between substance use and trauma, by suggesting there may

be gender differences with a higher proportion of women reporting childhood trauma and therefore being at increased risk of developing an alcohol or substance use disorder. It should be stressed that in this respect gender differences are applied to the reporting of trauma and not in consideration of its potential for development. However studies focusing on the experiences of women have a tendency to dominate the literature. For example, in respect of women, Najavits (2009, p290) agrees stating "when substance abuse develops, it typically follows after the onset of PTSD, a pattern that may reflect self-medication of trauma symptoms". This is not to say that the sequence of events differs for men as studies by Deykin and Buka (1997) and Perkonigg, Kessler, Storz and Wittchen (2000) have the development of substance use and abuse disorders, following trauma exposure or onset of PTSD in mixed teenage populations.

Comorbidity

The literature suggests that offenders with substance use problems are more likely to develop a mental illness and that offenders with co-occurring substance use and mental illness are more likely to have poor treatment outcomes (Grella et al., 2008; McNeil et al., 2005). It is possible to see that this implies a significant relationship between offenders' use of substances and their experiences within the prison system, specifically in relation to their ability and willingness to access and benefit from any offending behaviour programs offered to them.

In their prison sample Carlson, Shafer and Duffee (2010) found that both self-reported drug and alcohol abuse are associated with lifetime experiences of victimisation. This was echoed by the Garieballa, et al. (2006) study of forensic patients, which found that the experiences of multiple traumatic events, often beginning in early development, were commonplace.

Trauma and Psychosis

In addition to a demonstrable relationship between trauma and substance use, we can also see co-morbidity of traumatic stress related symptoms and the experience of psychosis. Individuals with a diagnosis of schizophrenia are thought to report higher rates of trauma exposure and are considered to be at greater risk of victimization than the general population (Mueser, Rosenberg and Rosenberg, 2009). This is confirmed by Mueser et al., (1998) cited in (Morrison et al., 2003) who found that 43% of patients with severe mental illness also met the criteria for a diagnosis of PTSD (DSM-IV; American Psychiatric Association, 1994). Newman, Turnbull, Berman, Rodrigues and Serper (2010) are also clear that individuals with schizophrenia or schizoaffective disorder experience more violent victimisation and more non-interpersonal traumas than the general population. The way in which these two conditions emerge is worthy of further exploration as the relationship is by no means straightforward.

Kilcommons and Morrison (2005, p352) find support for the idea that psychosis can be 'trauma-induced', as psychological defences break down in response to extreme stress. Conversely there also appears to be value in considering the psychotic breakdown (whether substance misuse induced or otherwise) itself to be a traumatic event in its own right. Strictly speaking to warrant a diagnosis of PTSD a traumatic event must have taken place that poses the threat of death or serious injury to the individual's own life, personal integrity or that of a loved one. However as Morrison, Frame and Larkin (2003, p33) remind us, the crucial element here is "that 'threat' can be a subjectively as well as objectively experienced", therefore in the case of an episode of paranoid psychosis for example, the content of the psychotic experience can be such that the individual truly believes their life to be in peril and is consequently traumatised, re-experiences memories of the psychotic episode and continues to display aspects of hyper-arousal or experience intrusive memories, even when this primary diagnosis has been controlled through medication or managed through therapy.

Childhood trauma is also seen to be a significant risk factor for the development of psychosis and there is a tendency for there to be high levels of trauma histories related to this in psychotic samples. Sexual trauma is seen as particularly significant in this process, as

demonstrated in the Bechdolf et al. (2010) study which used this type of abuse history to predict the onset of psychotic disorders in a 'high-risk' population. Clavert, Larkin and Jellicoe-Jones (2008) also suggest there is a substantial body of literature that links trauma and psychosis, particularly drawing on cognitive models of psychosis to explore how the two conditions relate. For example processes of numbing and detachment post trauma have been compared to the negative symptoms of psychosis and intrusions and flashbacks compared to hallucinations and delusions in psychosis. There is the potential here for expressions of traumatic stress to be masked by psychosis and potentially under reported in this population.

The Relationship between Trauma, Substance Misuse and Offending

As stated previously much of the research in this area has focused on women, typified by the work of Messina, Grella, Burdon and Prendergast (2007) who describe a well-documented link between a history of trauma in female offenders and increased evidence of difficulties in adulthood, including chronic substance abuse. As previously discussed, among offenders, current and lifetime rates of trauma have been found to be higher than in the general population (Gibson et al., 1999; Spitzer et al., 2001). Male offenders with substance use disorders and PTSD are likely to have higher recidivism rates (Pimlott-Kubiak, 2004) and are at greater risk of becoming entrenched in the criminal justice system (Ouimette et al., 1999) as comorbidity is felt to complicate treatment and has been linked to a poorer prognosis overall.

There is a wealth of literature exploring the use of substances in offender populations and potential links between substance use and co-morbid trauma. Large scale studies (Breslau et al., 1991; Jacobsen, Southwick & Kotsen, 2001; Kessler et al., 1995) have established links between PTSD and alcohol abuse/dependence (28-52%) and substance abuse/dependence (21-35%). Identifying trauma in relation to the cumulative impact of life events, rather than one discrete, highly unusual traumatic episode, is important as it is this process that may be seen to relate to poorer coping mechanisms and problem solving strategies amongst both offender populations and those with chemical (substance) dependency.

Granted the mechanisms underlying this relationship are not fully understood, although a role for the self-medication hypothesis is indicated here. In essence the self-medication hypothesis describes the use of substances to manage trauma symptoms, a hypothesis which might be considered to be more robust way to view the relationship with the recognition that according to some researchers, "trauma exposure usually precedes the development of an SUD" [substance use disorder] Kubiak (2004, p425). Wu, Schairer, Dellor and Grella (2010) and Khoury et al. (2010) add support for this hypothesis in their studies showing that adverse childhood experiences lead to subsequent substance use and poor mental health outcomes, particularly PTSD. Likewise Reed, Anthony and Breslau, (2007) in their study of nine hundred and eighty-eight, 19-24 year olds in the USA found that the association between PTSD and later drug use disorder remained even after statistical adjustment for early life experiences and predispositions reported as carrying elevated risk for both disorders.

The Self-Medication Hypothesis

In the self-medication hypothesis substance use has a primary function in alleviating trauma symptoms (Khantzian, 1997). Individuals are thought to use, abuse, and become dependent upon substances to relieve distress, with a psychopharmacologic specificity noted in an individual's drug of choice (Khantzian, 2003). A number of survey based studies have demonstrated endorsement of self-medication among those with co-occurring psychological problems and substance use (Leeise, Pagura, Sareen & Bolton, 2010). The psychological symptoms that an individual attempts to manage may be related to hyper-arousal and avoidance (Saladin, Brady, Dansky, & Kilpatrick, 1995) or substance use may be used to suppress personalised trauma cues (Coffey et al., 2002).

It is noted that the direction of the functional relationship between exposure to trauma and development of a substance use disorder can vary between individuals. However, there is support for this being a temporal relationship in which the development of PTSD precedes the development of the substance use disorder (Jacobsen, Southwick, & Kosten, 2001; McCauley, Killeen, Gros, Brady & Back, 2012; Stewart & Conrod, 2003).

Irrespective of the theory applied to explain a functional relationship between trauma and substance use, there is a significant dearth in the literature in relation to a clear assessment of prevalence rates and the nature of trauma in substance using, male MDOs in secure forensic mental health or prison settings.

Aims

To date, despite a rich literature concerning trauma and substance use and offending and substance use, and to a lesser extent offending and trauma, minimal consideration has been given to the interplay between these subject areas. Therefore, this review aims to systematically explore the prevalence rates of trauma, types of traumatic experiences and relationship between trauma and substance use in male offenders in prison and forensic mental health settings.

Specifically this review aims to examine;

The rates and nature of trauma in substance using and non-substance using offenders.

The relationship between trauma exposure and substance use in male offenders, in Prison and Forensic Mental Health populations.

Method

Current Literature

An initial scoping exercise identified that there were no systematic reviews exploring the relationship between trauma exposure and substance abuse in male offender populations available, however there was felt to be sufficient literature relating to the themes of trauma exposure and substance or alcohol use in an offender population to proceed with the review.

The extant trauma literature emphasises that a current response to traumatic stressors is mediated by exposure to previous adverse events (Ozer et al., 2003) and that this effect is particularly powerful if the past and current trauma are similar in nature. In addition, Briere, suggests the amount of posttraumatic symptomatology that an individual experiences is related to variables specific to the victim, characteristics of the stressor, subjective response to the stressor and the degree of support offered the victim (2004). Therefore, whilst it is not suggested that a single review can hope to account for all of these factors, any exploration of current literature needs to be sensitive to these complexities.

Scoping Exercise

An initial scoping search was conducted on the 20th of June 2011 and repeated on the 12th of March 2014, using the Cochrane Library. This included examination of the Cochrane Database of Systematic Reviews and the Database of Abstracts of Reviews of Effectiveness, to assess whether reviews exploring the relationship between trauma exposure and substance abuse in male offender populations in prison or forensic mental health settings were already in existence and to establish the likely volume of papers available to meet the review aims.

The following key terms were applied: Traum*, Trauma-Informed, Emotional Traum*, PTSD*, post-traumatic stress*, prevalence, offen*, crimin*, inmate, prison*, forensic*, substance,* and drug. Full details of the syntax used in the scoping exercise and the results yielded are presented in Appendix A.

The Cochrane Database yielded one result scoped on the 20th of June 2011, which offered up a review of interventions for drug-using offenders with co-occurring mental illness and although it did not specifically address the stated aims of the thesis review, it usefully noted that with the exception of a study by Prendergast (2003), little consideration was given to the range of diagnoses offenders may present with. Thus the impact of trauma on current functioning may be under recognised and more detailed information regarding mental health diagnoses is needed to ensure transferability of information to clinical practice (Perry, Neilson, Martyn-St James, Glanville, McCool, Duffy, Godfrey & Hewitt, 2014).

This consideration of clinical implications was encouraging so although the scoping exercise identified that a review exploring the relationship between trauma exposure and substance abuse in male offender populations in prison or forensic mental health setting had not previously been undertaken, it was felt there was sufficient research from the trauma and addiction fields available to explore this phenomenon.

Search Strategy

A database search was conducted in March 2014, with a set date limit of 1995 to 2014 to ensure the review reflected current research in the field. This date range was sensitive to the introduction of posttraumatic stress disorder in the International Classification of Mental and Behavioural Disorders (ICD-10), effective since 1992 and more recent changes to diagnostic descriptions following the inclusion of a new chapter focusing on Trauma and Stressor-related disorders in the DSM-5. Trauma literature prior to this date range focuses more on the experience of veteran populations and as such may it lack the necessary sensitivity and transferability in relation to the experiences of cumulative traumas and the particular experiences of offender populations.

Sources

The following electronic databases were searched on the 20th of March 2014;

OVID: PsycINFO
OVID: EMBASE
ERIC
Applied Social Sciences Index and Abstracts (ASSIA)
PILOTS *(a trauma specific database)*
SWETSWISE

Hand searching

The Journal of Traumatic Stress (1995- February 2014) was identified as a key journal and hand searched (title and abstract) for relevant studies. As the Journal of Traumatic Stress was

included in the electronic database search this technique of hand searching was also an effective way of ensuring that the search the terms that were applied to the electronic databases were robust enough and adequately reflected the available literature. A search of SIGLE was also made to take into account the grey literature, although no data were forthcoming from this.

Search terms

Keywords relating to the experience of trauma in substance using male offenders with and without co-morbid mental disorder were used in the search strategy. The population search terms were extended to include the broader range of forensic settings ('inmate, correct*, prison*, forensic) and included 'alcohol' as separate search term under the umbrella of substance misuse, as initial forays into the literature identified that this was often studied in the absence of other substances. The full search syntax for the literature review applied to electronic database search and the respective results yielded are presented in Appendix A.

In sum the following search terms were applied to all databases (with the only difference between databases being truncation):

Traum* OR "Trauma-Informed" OR Emotional Traum* OR PTSD OR post-traumatic stress*

AND
Prevalence

AND
Offen* OR crimin* OR inmate* OR convict* OR patient* OR incarcerat* OR detaine*

AND
Forensic* OR prison* OR correct*

AND

Substance*, drug*, alcohol*

Study Selection

Inclusion/Exclusion criteria and PICO

Papers were selected on the basis of their relevance to the review aims. Goff, Rose, Rose and Purves (2007) undertook a similar review which explored whether PTSD occurs in sentenced prisoners and excluded papers that referred to lifetime prevalence of PTSD as they were focusing on treatment need and so required clear evidence that PTSD had been manifest during imprisonment. A similar argument might have been made for this review had the focus been on exploring treatment needs in male offenders in prison and forensic mental health settings who use substances. However, as this review aims to be an initial exploration of the relationship between trauma exposure and substance use in male offenders and specifically seeks to identify prevalence rates and the nature of trauma in substance and non-substance using male offenders, a broad definition of trauma seems to be more acceptable.

To establish which of the citations were to be retained for data extraction and analysis, the identified papers underwent a review of inclusion and exclusion criteria as outlined in Table 1. The titles and abstracts identified through the initial searches were reviewed. Any duplications were removed at this stage.

Table 1. Inclusion/exclusion (PICO) criteria.

	Inclusion	Exclusion
Population	Male Adult (over the age of legal majority for criminal conviction in the respective jurisdiction from which an individual paper was taken). Substance users (drugs or alcohol) Convicted of a criminal offence or remanded to custody awaiting trial or sentencing. Includes secure forensic mental health and correctional settings	Female Veterans Adolescent, Child (under the age of legal majority for criminal conviction in the respective jurisdiction from which an individual paper was taken) Non-forensic / community population
Intervention	No specific psychometric assessment of trauma required; may include lifetime assessment of trauma, description of traumatic exposure, diagnosis of PTSD or complex trauma. Engagement with substance misuse treatment, whether pharmacological, or psychological will be noted.	Population meets partial criteria, e.g. trauma impact but no substance misuse consideration
Comparator	Offenders without a history of substance use (drugs or alcohol)	
Outcome	Details of rates and nature of traumatic experiences in substance and non-substance abusing offenders. Evidence of relationship between trauma exposure and use of substances in offenders.	
Study Design	Any published empirical study Includes cohort studies, case control, Cross-sectional and case studies.	Opinion papers / Commentaries Editorials
Other	English Language only	Papers published prior to 1995 Dissertations Poster presentations

To be included in the review studies needed to make mention of the functional impact of past trauma and substance use in male offenders. There was no upper age limit to the study population, however female samples were excluded in order to maintain gender homogeneity in the sample and to provide an alternative perspective on what may be described as the predominance of Feminist or gendered pathways theories, which suggest that female criminality and drug use, whilst being attributed to a range of experiences, notably typically includes early trauma (Jones, Brown, Wanamaker & Greiner, 2014).

Search Strategy Results

The results of the search strategy and study selection process are outlined in Figure 1. The search strategy yielded a total of 1,899 hits. 1,893 hits were from the online database search and 6 from the hand search of journals. Duplicates (n = 29) were removed at an early stage, leaving 1,870 papers that were eligible for review, according to the PICO criteria. A total of 1,174 papers failed to meet the inclusion criteria and were removed

Regarding the citations that breached the exclusion criteria or otherwise failed to meet the inclusion criteria; 389 papers considered a juvenile or exclusively female population, 149 papers were concerned exclusively with a veteran or non-offender population and 156 papers made no mention of the use of substances. Other reasons for exclusion were that papers did not specifically consider the impact of trauma on their study population (n = 187) or simply offered far too general a review or commentary on the literature (n = 15). Any articles that could not be obtained were also excluded at this stage (n= 1).

The full text articles of the remaining papers (n = 683) were then reviewed. A further 671 papers were excluded in line with the criteria outlined above, relating to the absence of trauma or substance misuse. The remaining 12 papers were subject to the quality assessment process. Two examples of significant exclusions following a full-text review included; Crisford et al. (2008) who focused on offence-related PTSD and guilt in mentally disordered violent and sexual offenders but did not assess the potential impact of drug or alcohol use on

mediating the presence or absence of these symptoms. Similarly, the work of Gray et al, (2003) on offence-related PTSD in mentally disordered offenders considered the impact of offence type, closeness to victim and co-morbid mental illness, but not substance use. These papers may be regarded as providing much needed to the literature relating to trauma following offence commission but had to be excluded as they did not consider the impact of substance use.

Quality Assessment

Following application of the inclusion/exclusion criteria to each article, the studies were quality assessed using the appraisal forms adapted from the Public Health Resource Unit, England (2006) (Appendix C). The maximum possible score for a cohort study was 42 from 21 questions, the maximum possible score for a qualitative study was 58, from 29 questions and the maximum possible score for a case control study was 56, from 28 questions. This application of a structured appraisal system enabled consideration of the appropriateness of the research design, including; sampling procedures, data collection, potential research bias, ethics, data analysis and overall contribution of the research. Each paper was awarded a Quality Assessment Score based on the following system.

A score of 0 points was given for a ‘no’ answer in which it was clear the criteria had not been met. 1 point was awarded if the criteria was felt to have been partially met and 2 points were awarded for a ‘yes’ answer, if it was felt the criteria had been fully met. A grade of ‘U’ for unknown, equating to a score of ‘0’ could be awarded if there was insufficient information to establish the extent to which criteria had been met.

Assessment scores were summed to produce a maximum total quality score of 42 for Cohort Studies, 58 for Qualitative Studies and 56 for Case Control Studies. A small selection (30%) of included papers (n=3) were quality assessed by a second reviewer, a forensic psychology colleague of the author, to ensure inter-rater reliability. Where discrepancies were evident between reviewers (a total of four points on one paper and five on another), they were minor and did not impact on the overall percentage banding, indicating high, moderate or low quality.

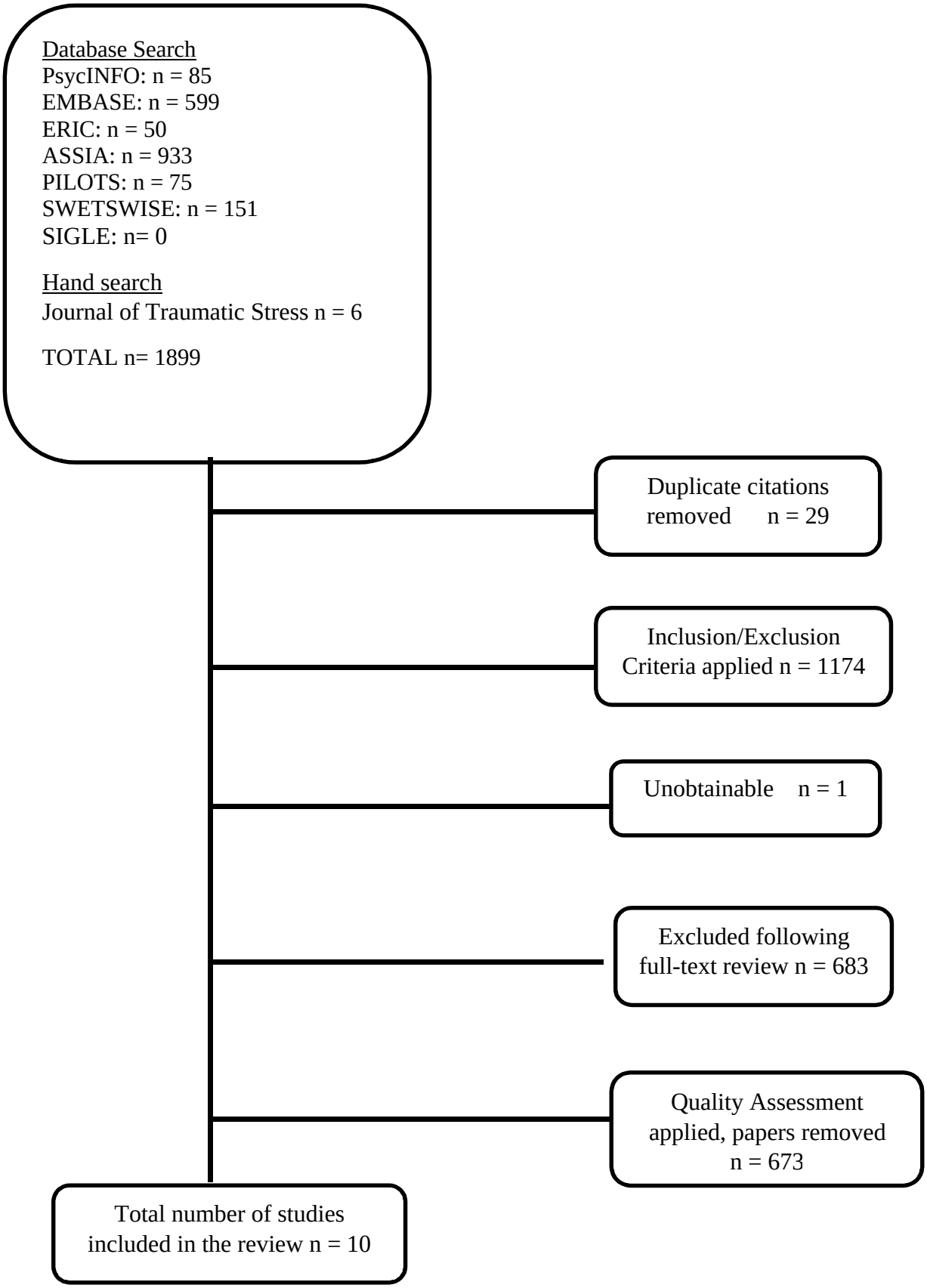
Studies which received a final score of over 70% of the total possible score were to be marked as ‘high quality’, although none of those reviewed managed to achieve this. Studies which scored between 40-69% of the total possible score were marked as being of ‘moderate quality’ and those that obtained less than 40% of the total possible score were considered to be ‘low quality’. It is noted that whilst these cut-offs are somewhat arbitrary, however they were derived from the Verhagen et al., (1998) study, which attempted to gain expert consensus using the Delphi method, for reviews of quality assessment in randomised clinical trials. Any study that achieved a quality score of moderate or above was immediately deemed suitable for inclusion in the review.

Initially it was decided that studies that had met the outlined inclusion and exclusion criteria but rated poorly in the quality assessment, in terms of a high number of ‘no’ ratings, were to be excluded from the review. However, given the limited number of available papers, the single citation with a low score on the basis or ‘unknown’ items was retained. It is recognised that this may have resulted in selection bias but it was the intention of the author to be as inclusive as possible in the review, given the paucity of available papers.

Data Extraction

Data were extracted from the remaining studies using the pro forma (Appendix B) and synthesised into summary tables of the findings. A brief description of each study was outlined, including; population details, assessment methods, key findings, strengths and weaknesses of each paper. A meta-analysis was not deemed to be appropriate given the non-experimental nature of the papers reviewed and the wide ranging variability within the assessment tools used and data sets provided.

Figure 1: Screening Flowchart



Results

Following the outlined search procedure and quality assessment process ten papers were identified for inclusion in the review. A summary of these papers based on the data extraction process, highlighting; study population, methodology and findings of the papers, including strengths and weakness in relation to the purpose of this review, is presented in Table 2.

Detail of the rates of traumatic experiences, nature of traumatic experiences and the relationship between substance use and trauma in offenders is presented in Table 3.

Table 2. Overview of studies exploring the role of trauma and substance use in male offenders included in quality score)

Author(s) Year of Publication	Participants	Methodology	Assessment Tools Used	S (
Armstrong, G. J., & Kelley, S. D. (2008).	111 offenders referred by attorneys for pre-trial evaluation. 76% male. Age range 18 to 66.	**Aim**: to explore whether antecedents of adult antisocial behaviour and adult psychopathology are linked to childhood trauma and maltreatment. Descriptive statistics computed for quantitative items. Content analysis of open-ended items conducted in NUDIST software.	Descriptive research design using the following instruments; a) Self-report of trauma or maltreatment developed for the study. b) bio-psychosocial assessment c) arrest history d) MCMI-III	S 1 e p f f a V 1 n 2 P (
Barrett, E.L., Mills, K.L. & Teesson, M. (2011)	102 participants recruited to a RCT of an integrated treatment for comorbid SUD and PTSD. 37.3% male participants, median age of first	**Aim**: to assess whether the co-occurrence of post-traumatic stress disorder increases the risk for violence. To determine prevalence of violence perpetration and examine factors related to violence among individuals with comorbid SUD and PTSD.	Interview data collected which included; demographics, perpetration of violent crime, mental health, and substance use, PTSD, depression, anxiety and borderline personality disorder.	S 1 s s

	trauma exposure 8yrs.		Aggression measured using the Aggression Questionnaire (Buss & Perry, 1992) Composite International Diagnostic Interview (CIDI) (Kessler & Ustun, 2004) to determine whether participants met DSM-IV criteria for dependence. Trauma history was measured by a modified version of the CIDI PTSD severity measured by the Clinician-Administered PTSD scale. Beck Depression Inventory and State-Trait Anxiety Interview also used. Screening for personality disorder conducted with the International Personality Disorder Examination Questionnaire.	
Carlson, B.E., Shafer, M.S. & Duffee, D.E (2010)	Sample of 838 incarcerated fathers and 1,441 mothers – all inmates in Arizona prison service. Participation was	**Six hypotheses and research questions:** **Hypothesis 1:** Mothers will be more likely than fathers to report drug addiction, whereas fathers will be more likely to report alcohol addiction. **Hypothesis 2:** Interpersonal victimization will be associated with self-reported addiction.	Administered two anonymous questionnaires one asking about criminal history and substance use the other 15 traumatic and stressful events.	

	voluntary.	Research question 1: Are self-reported service needs related to ethnicity? **Hypothesis 3:** Mothers will have different self-reported service needs than fathers. **Hypothesis 4:** Interpersonal victimization will be positively associated with inmate-perceived service needs among mothers. **Hypothesis 5:** Substance abusers will have different and greater service needs than inmates who do not self-report an alcohol or drug problem		
Clark, C.B., Reiland, S., Thorne, C. & Cropsey, K.L. (2014)	615 individuals in a substance abuse treatment program for individuals under criminal justice supervision.	**Aim:** to test hypothesis that there will be greater aggression among those with a history of substance abuse and trauma compared with those without such a history.	(MINI) Mini-International Neuropsychiatric Interview used to assess for Axis I disorders. Data collected using face to face interviews and self-report measures. Univariate and multivariate analyses used to /assess relationships among substance use, trauma and aggression**.**	

Gibson, L.E., Holt, J.C., Fondacaro, K.M., Tang, T.S, Powell, T.A. & Turbitt, E.L. (1999)	213 randomly selected male inmates from US Prison. Average age of participants was 32 years, 81% described as European- American.	**Aims:** a) To determine what traumatic events are reported by prisoners who meet criteria for PTSD. b) To determine what psychiatric disorders are comorbid with PTSD in this population. Chi-square analyses were conducted to determine diagnostic differences between inmates who met criteria for PTSD and those who did not.	DIS-III-R, structured interview to assess for presence or absence of 30 psychiatric diagnoses.	

Gunter, T. D., Arndt, S., Wenman, G., Allen, J., Loveless, P., Sieleni, B., & Black, D. W. (2008).	320 randomly selected male and female prisoners newly committed to the Iowa prison system. Male n= 264 Female n = 56 Average age of participants was 31 years 71% of sample Caucasian 11 % African American Sample excluded violent offenders and those requiring, segregation, seclusion or maximum security.	**Aim**: to provide information about the prevalence of current and lifetime mental and addictive disorders in Iowa prison population. **Hypotheses:** 1. Women would have higher rates of internalising disorders 2. Men would have higher rates of externalising disorders Fitting multiple logistic regression models by gender, age, ethnicity and ASPD, obtained adjusted odds ratios for gender and each MINI-plus disorder (treating men as the reference group)	The Mini-International Neuropsychiatric Interview-Plus; to assess frequency of mental and addictive disorders, including trauma.	
Messina, N., Grella, C., Burdon, W. & Prendergast, M. (2007)	Study focuses on inmates from a California prison population; 316 women (171 were participates in the Substance Abuse Program and 145 women from general inmate population) and 425 male inmates (280 were	Aim: to explore prevalence of childhood adverse events (CAEs) and relationship to current traumatic distress in male and female drug-dependent prisoners. Hypotheses: 1. Drug-dependent women offenders will report more abuse prior to the age of 16, compared with drug-dependent men offenders. 2. Greater exposure to CAEs will be associated	Interview data collected. Nine indicators of CAEs were analysed (emotional abused and neglect, physical neglect, physical abuse, sexual abuse, family violence, parental separation/divorce, incarceration of family member, out of home placement, parental substance abuse) based on the Life	

	participates in the Substance Abuse Program and 145 women from general inmate population). All participants volunteered to be interviewed for the study.	with greater histories of mental health treatment, use of psychotropic medication, and earlier criminal and drug-using behaviours, regardless of gender 3. Greater exposure to CAEs, combined with the pre-existing substance abuse and criminal histories among this sample, will increase the likelihood of adult mental health disorders, regardless of gender. Bi-variate analyses were conducted to assess prevalence of CAEs between men and women. One-way ANOVA used to determine whether there was an association between number and duration of CAEs and current traumatic distress. Linear regression analyses conducted to assess whether exposure to CAEs significantly related to adult mental health disorders.	Stressor Checklist-Revised. Trauma Symptom Checklist-40 added to baseline data.	
Owens, G. P., Rogers, S. M., & Whitesell, A. A. (2011).	Sample of individuals on probation or parole n=100. 52% male, mean age 35 years.	Exploratory study of mental-health treatment seeking and barriers to accessing care for individuals on probation and parole. Logistic regression performed to determine which factors were significantly related to treatment seeking.	a) Trauma History Screen (13 item measure, assessing 11 possible traumatic events) b) PTSD *Checklist-S* (17 item self-report inventory to assess PTSD symptom severity) c) *Centre for Epidemiologic Scales-Depression* CES-D d) Stigma Scale for Receiving	

			Psychological Help (SSRPH) e) Drug Abuse Screening Test (DAST) f) *Short Michigan Alcoholism Screening Test* (SMAST)	s 3 a t 4 h c 5 P 6 t P (
Pimlott Kubiak, S. (2004).	Sample of US prison inmates receiving substance abuse treatment as part of a voluntary residential program. Males n = 139, females n = 60	Exploratory study comparing those with and without co-occurring PTSD in a prison based sample receiving treatment for substance abuse. Examined treatment adherence, drug relapse and criminal recidivism.	1. Substance Abuse Subtle Screening Inventory. 2. Traumatic events assessed using the Life Events subscale from the National Comorbidity Survey which incorporates a modified version of the Composite International Diagnostic Interview.	S 1 t i n W 1 a s 2 c

Zweig, J.M., Yahner, J. & Rossman, S.B (2012)	674 men and 284 women drawn from the *Multisite Drug Court Evaluation (MADCE)* included in analyses	**Aim**: to apply General Strain Theory (G as a model for explaining the role of victimization in the development and/or persistence of mental health and substance use issues for such offender populations. **Research Questions:** 1. Does adult victimization increase the likelihood of using substances, even after controlling for other known predictors of substance use, and, if so, is this path mediated by depression as predicted by GST? 2. Do the path models defining the relationship between victimization and substance use differ between male and female offenders?	Interviews conducted at baseline, 6 month and 18 month intervals, using a computer-assisted personal interviewing system. Questions asked in relation to days of drug use and emotional state. Main independent variables of interest were physical and sexual victimization.	

Study Population

The total sample size for all studies combined comprised 4,440 participants. Sample sizes varied greatly across the papers, ranging from just 100 (Owens, Rogers & Whitesell, 2011) and 199 (Pimlott-Kubiak, 2004) to 2,279 (Carlson et al., 2010), with studies generally having fewer than 500 participants. Power calculations were not reported in the identified studies and it is unclear from the methodologies presented whether these had been conducted. Given that ideally findings from this review would be generalisable to reflect the needs of a wider offender population, the variance in sample sizes is of concern and limits this potential.

Notably all of the studies were conducted in the United States and therefore the review undoubtedly has a North American bias. Likewise with regard to the ethnicity of the sample there was predominance of white European-American participants, therefore it is not possible to comment on what the influence of a higher representation of refugee, or non-white immigrant or non-native English speakers within the sample would have been. This level of homogeneity amongst the sample may influence the degree of psychological resilience within the participants studied and perceived experience of trauma in relation to exposure to potentially traumatic events. There was some variation however, as from the data reported the average age of participants was 35 years with the Armstrong and Kelley (2008) study showing the greatest age range from 18 to 66 years.

There is a similar lack of variation in terms of recruitment as the samples were all derived from prison or from ‘secure rehabilitation facility’ populations, which did not include secure hospitals or forensic mental health settings. Recruiting from samples engaged in treatment to address substance misuse difficulties (Pimlott-Kubiak, 2004; Simpson et al., 2007; Messina et al., 2007) may have also have influenced the direction of the review as there was no opportunity to control for a potentially higher co-morbid pathology in a treatment seeking population or to have explored the traumatic experiences of those in a potentially ‘hidden’ treatment resistant sample. Spinazzola, Blaustein and Van der Kolk (2005) echo this in their PTSD treatment outcome research, noting that individuals who declined to participate in treatment were generally less symptomatic of PTSD or disorders of extreme stress not otherwise specified (DESNOS) and had higher global functioning. Generally the studies made it clear that participation was voluntary and would have no bearing on prisoner’s

progress through the system or within their treatment program (Pimlott-Kubiak, 2004; Messina et al., 2007; Simpson et al., 2007; Zweig et al., 2012), yet only the Carlson (2010) study offered the opportunity for participants to complete anonymous questionnaires.

Volunteers recruited to study participation were typically those serving shorter sentences or those who had remaining sentences of less than 2 years, which again may have influenced participants' abilities to reflect on their life choices and willingness to consider the impact of traumatic life events on future rehabilitation. In reference to the literature discussed earlier a briefer stay in prison may also have reduced the likelihood of experiencing the environment as re-traumatising and bolstered more negative appraisals of past experiences. Conversely volunteering for a treatment programme might suggest a degree of psychological mindedness and self-awareness that could impact on the individual's reporting of symptoms and psychological difficulties, thereby artificially inflating estimates of trauma and substance use difficulties and limiting the potential to extend this review to a wider offender population. The overall quality of papers reviewed would have been considerably boosted had more consideration of self-selection bias and the nature of the sample populations been made.

The majority of studies reported basic demographics such as age, level of educational attainment, income and employment status, the impact of these factors acting as mediators for using substances or in experiencing adverse life events as traumatic in the absence of greater resilience and coping strategies or external supports, was not fully explored. Although the review did not seek to address this directly, comment on the relatedness of socio-economic factors and coping abilities would have been valuable in studies exploring the relationship between exposure to traumatic stressors and drug use as, as maladaptive coping strategies and low resilience could have impacted on the prevalence rates of trauma reported in the studies.

The greatest variation in the studies, relates to the recording of offence histories and the sampling procedure used. The study samples were typically highly selected, adding a further layer of bias. In some studies violent or sexual offences are excluded (Simpson et al., 2007) and admission to drug treatment programmes, from which samples were generally derived was dependent on a period of non-violent, stable behaviour being exhibited. This brings into question how well findings from these studies can be related to a forensic mental health setting, where violent and sexual offences are commonplace and treatment can be mandated,

rather than being informed solely by current behaviour. Of equal concern by deselecting potentially more challenging offenders in this way, researchers may have also unintentionally deselected those with the most problematic substance use or significant or prolonged trauma histories. Carlson et al. (2010) are a slight exception to the selection bias demonstrated in other studies as they sought to maximise numbers across offence types and employed a potentially more robust system of convenience sampling of 25,000 male inmates to match invited participation from one correctional facility housing 2,455 female inmates, with the final sample, at the time of publication representing 4.5% of the total inmate population of the Arizona Department of Corrections.

Assessment Measures

A variety of trauma related measures were used across the studies, typically delivered as part of structured and semi-structured interviews, including; an assessment of PTSD using the Life Events Subscale of the National Comorbidity Survey and the Trauma Scale in Composite International Diagnostic Interview, for a validation sample (Pimlott-Kubiak, 2004), the Trauma History screen and PTSD Checklist-S (Owens et al., 2011), the Clinician Administered PTSD Scale, (Barrett, Mills and Teesson 2011), the Life Stressor Checklist-Revised and the Trauma Symptom Checklist-40 (Messina et al., 2007), the PTSD Checklist-Civilian version (Simpson et al., 2007), a specifically developed interview schedule (Zweig et al., 2008) and two study specific questionnaires designed to assess exposure to traumatic and stressful events (Carlson et al., 2010).

It is noted that in both the addiction and trauma research fields there is an overwhelming array of assessment measures at the clinicians' disposal. It is not possible to comment conclusively on the utility of selecting one assessment tool over another as details of reliability and validity of the measures and rationale for selection are not typically reported in the papers reviewed, an issue which is particularly pertinent to the Carlson et al., (2010) paper in which questionnaires were developed specifically for the study by the researchers.

Of those papers which did make use of standardised measures consideration of reliability and

validity can be made. The Armstrong and Kelley (2008) study utilised the MCMI-III (Millon, Davis & Millon, 1997) and this has been shown by Dyer (1997) to have good content validity against the DSM-IV. Perry, Mills and Teesson (2011) used a variety of measures including; Buss and Perry's Aggression Questionnaire (Buss & Perry, 1992) which is considered by Samani (2008) to have appropriate validity and reliability for research and clinical use. They also employed the Composite International Diagnostic Interview (CIDI) (Kessler & Ustun, 2004) which was reviewed by Wittchen (1994) who found good test-retest and inter-rater reliability for the measure. The Clark et al. (2014) and Gunter et al. (2008) both used the (MINI) Mini-International Neuropsychiatric Interview and it was found to have acceptable validity and reliability in a study by its authors, Sheehan, Lecrubier, Harnett Sheehan et al. (1997) which took place with populations in France and the USA.

In relation to selection of trauma specific instruments, Messina, Grella, Burdon and Prendergast (2007) use the Trauma Symptom Checklist 40, which when reviewed by its authors Briere and Runtz (1989) found it to be a relatively reliable measure with subscale alphas typically ranging from .66 to .77 and alphas for the full scale averaging between .89 and .91. The Owens, Rogers and Whitesell (2011) study makes use of the Trauma History Screen, which according to a review by the authors Carlson, Smith, Palmieri et al. (2011) has psychometric properties that appear to be comparable or better than longer and more complex measures of trauma exposure. The same study also uses the PTSD Checklist (Weathers, Litz, Keane, Palmieri, Marx & Schnurr 2013), which is considered by Conybeare, Behar, Solomon, Newman and Borkovec (2012) to be to be a valid and reliable measure of PTSD symptoms, even among nonclinical samples, and may even superior to some alternative measures of PTSD.

There was just as much variation across studies in the assessment of problematic drug or alcohol use. Some studies used structured interview and self-report measures, which on average were lengthy and lasted ninety minutes (Messina et al., 2007, Carlson et al., 2010), suggesting that they would not have been well tolerated by participants with impaired cognition or active symptoms of mental disorder. Others used structured screening measures such as the Substance Abuse Subtle Screening Inventory, which is used to assess substance dependency (SASSI Institute, 2016) or the Composite International Diagnostic Interview(Kessler & Ustun, 2004) to determine whether participants met DSM-IV criteria for

dependence (Barrett et al., 2011). Only the Simpson et al. (2007) study selected measures to assess the quantity and frequency of alcohol use, utilising the Daily Drinking Questionnaire (Collins, Parks, & Marlatt, 1985) and the Short Inventory of Problems (Blanchard, Morgenstern, Morgan, Labouvie & Bux, 2003), which is a fifteen item measure adapted from the Drinker Inventory of Consequences (Miller, Tonigan & Longabaugh, 1995). The same study also limited the assessment of drug taking behaviour to a period of 90 days, prior to participation in the study, through the use of the Daily Drug-Taking Questionnaire (Parks, 2001). In forensic terms this this a relatively brief timeframe and reflects how earlier into a prison stay the sample population was derived from.

Other studies, including the work of Clark, Reiland, Thorne and Cropsey (2014) took a far more global approach to assessment and utilised a broader spectrum assessment measure, in addition to gathering demographic and social history information, such as the Mini-International Neuropsychiatric Interview (MINI) (Sheehan et al. 1997), to assess Axis I mental health disorders. It is beyond the scope of this chapter to suggest definitively which approach might have been best in identifying problematic drug and alcohol use. However, whilst a broad spectrum assessment measure might give a sound overview of the study population such measures potentially lack the sensitivity to fully explore the complexities of substance use and trauma in an offender population.

Table 3. Overview of studies exploring the role of trauma and substance use in male offenders included in

Author(s) **Year of Publication**	**Prevalence of Traumatic Experiences**	**Nature of Traumatic Experiences**	**The relationship be use in male offende populations.**
Armstrong, G. J., & Kelley, S. D. (2008).	61% of males (n=87) in the sample reported a history of multiple childhood traumas	10 themes of childhood trauma; Abandonment, substance misuse, physical abuse, sexual abuse, neglect, emotional or verbal abuse, witnessing violence in the family, mental illness in the family, geographic instability and removal from home by state agency.	25% of the overall s 17 first time offende abandonment and pa 74% of participants substance abuse, aba violence. 12 male individuals multiple incidents of witnessing family vi 74% of the 46 male were charged with o battery, forgery, assa probation referral. T physical, and psycho family; and major m

Barrett, E.L., Mills, K.L. & Teesson, M. (2011)	Sample selected from PTSD/SUD treatment group, n=102. 83% of sample experienced first trauma before age 16yrs. Being threatened with a weapon and witnessing serious injury/death most commonly experienced – 94%.	Sources of trauma included; combat, life threatening accident, natural disaster, witnessing serious injury or death, rape, sexual molestation, physical assault, threat with a weapon, torture and great shock.	Bivariate associatior and trait aggression, and experiencing mo relation to hyper-aro 95.7% of the sample trauma before the co Similar trauma histo violent offenders.
Carlson, B.E., Shafer, M.S. & Duffee, D.E (2010)	69.9% of sample experienced a form of lifetime family abuse.	Study included; physical child abuse, child sexual abuse, domestic violence and adult sexual assault.	For male offenders i (58.5%) and drug ab with more forms of family member.
Clark, C.B., Reiland, S., Thorne, C. & Cropsey, K.L. (2014)	15.7% (n=89) of the overall sample of 615 participants endorsed trauma and regular substance abuse. 18.1% (n=103) endorsed trauma history without regular substance use.	Type of traumas unspecified, assessed by answering yes to the first PTSD screening question from the MINI, "Have you ever experienced or witnessed or had to deal with an extremely traumatic event?"	Participants with a h reported highest rate and person offenses.
Gibson, L.E., Holt, J.C., Fondacaro, K.M., Tang, T.S, Powell, T.A. &	Sixty-nine participants (33%) met lifetime DSM-III-R criteria for PTSD, and 45 (21%) met current criteria.	Study included; Seeing someone hurt or killed, rape, physical assault, sudden injury or accident, news of sudden death or injury, military combat, threat, narrow escape from a traumatic event,	1.85.5% of sample v 2. 69.6% of sample Rates of substance a

Turbitt, E.L. (1999)		natural disaster	inmates who did and In the no PTSD sam abuse/dependence a abuse/dependence, v for alcohol abuse/de abuse/dependence.
Gunter, T. D., Arndt, S., Wenman, G., Allen, J., Loveless, P., Sieleni, B., & Black, D. W. (2008).	10.2% (n=254) of the sample met the criteria for PTSD.	Type of traumas unspecified, assessed by answering yes to the first PTSD screening question from the MINI-PLUS	1.90% of the sample Alcohol disorders si 2.10% of males in th stress. 3. High frequency o independent of race,
Messina, N., Grella, C., Burdon, W. & Prendergast, M. (2007)	Prevalence determined by number of adverse childhood events experienced; 0 11.5% 1 17.6% 2 23.4% 3 21.3% 4 12.9% 5 plus 13.3%	Focus on Childhood Adverse Events, including; emotional abusive and neglect, physical neglect, physical abuse, sexual abuse, family violence, parental separation or divorce, incarceration of a family member, out-of-home placement and parental substance abuse.	1. Men cited the inc 2. Significant increa health treatment in r 3. Men with 5 or mo serious involvement 4. Greater exposure substance abuse and of adult mental healt

Owens, G. P., Rogers, S. M., & Whitesell, A. A. (2011).	85% of sample reported experiencing at least one traumatic event in their lifetime.	Most commonly reported events included; sudden death family member/friend (72%), witnessing death or severe injury (40%), RTA (42%), attacked with weapon (31%), adult physical abuse (30%), childhood sexual abuse (21%), childhood physical abuse (18%).	1.76% of respondent indicating problema 2. 47% of responder indicating problema 3. Trauma and subst incarceration.
Pimlott Kubiak, S. (2004).	53% of the men in the sample n=139 met lifetime criteria for PTSD	Study included; life-threatening accident, natural disaster; witness of severe injury or death; death of loved one as a result of homicide, suicide, or accident; rape; molestation; serious attack; threatened with weapon or held captive; direct combat;	1. Men with PTSD v aftercare (51.2% of t 2. Post release legal PTSD sample as17% 6% (n= 2) on the no problem post prison 3. Men were more li during incarceration of women who has b
Zweig, J.M., Yahner, J. & Rossman, S.B. (2012)	N=958, 31% physically victimized, 9% sexually victimized.	Study included; sexual and physical victimisation.	Multilevel Structura estimate direct and i use in offender popu 1. Physical and sexu baseline interview p even controlling for

			With both physical v having statistically s at the p< .05 and p< 2. These effects hold drug-involved offen

Prevalence of Traumatic Experiences

Of the twelve papers included in the review, ten offered percentage estimates of trauma experienced by their sample. The variation among studies was great with Gunter, Arndt, Wenman, et al., (2008) noting that just 10% of their sample of 254 offenders met the criteria for PTSD. This estimate is considerably lower than the levels of traumatisation suggested elsewhere by the review and likely reflects the rigidity of the researcher's method in applying the PTSD criteria to the assessment, rather than assessing traumatic experiences, using a broader screening tool. As when applying similar assessment criteria in their study of 213 US prison inmates, Gibson, Holt, Fondacaro, Tang, Powell, and Turbitt (1999) offer a slightly more generous estimate of the prevalence of trauma, suggesting that 33% of sample met lifetime criteria for PTSD, with a further 35% of the sample reporting that they experienced a traumatic event with reactions falling below the criteria for PTSD.

The study by Clark et al. (2014) stood out as the only paper to directly compare the impact of regular as oppose to infrequent substance use and a trauma history on subsequent aggressive behaviour in their sample of 615 offenders, who were recruited from a substance abuse treatment program for individuals under criminal justice supervision. It was interesting to note that 16% (n=89) of sample endorsed trauma and regular substance abuse and 18% (n=103) endorsed a trauma history without regular substance use. Whilst this review did not seek to differentiate between regular and occasional substance use, it is interesting to note that there was little difference in terms of prevalence of trauma histories between the two groups. Based on the available data further comment on whether substance use has a mediating as well as causal role in relation experiences of trauma in the lives of offenders, would be pure speculation..

Messina et al., (2007) were equally cautious in their estimates of trauma exposure in an offender population and refine their estimates with a narrowed focus on exposure to specific traumatic experiences, namely childhood adverse events, including; emotional abuse and neglect, physical neglect, physical abuse, sexual abuse, household dysfunction, family violence, parental separation or divorce, having an incarcerated family member, being subject to an 'out-of-home placement' and parental substance abuse. They found that 21% of 425

male inmates in their study sample had been exposed to at least three of these traumatic events. Indeed, it was more typical to find mid-range assessments of traumatisation, when focusing on specific experiences, such as those offered by Zweig, Yahner and Rossman (2012), suggesting the 31% of their sample of 958 offenders had been subjected to physical victimisation. The Pimlott-Kubiak (2004) study of 199 male and female inmates receiving substance abuse treatment increases the estimate of lifetime PTSD, raising it to 55%. However, in this instance it may be important to note that the sample is drawn entirely from an incarcerated population receiving substance abuse treatment, as oppose to a more general offender sample. Therefore even though this review does not seek to directly explore the potential for substance use to have a mediating impact on traumatic experiences it may have influenced the trauma prevalence rates presented.

At the higher end of the scale, the Carlson, Shafer and Duffee (2010) study states that 70% of their sample of 838 incarcerated fathers experienced a form of lifetime family abuse, which they considered to be traumatising. Likewise the Armstrong and Kelly (2008) study continues to offer a more generous estimate of the prevalence of trauma in an offender population, suggesting 70% of their sample reported a history of multiple childhood traumas, as does the Owens et al., (2011) study, which suggests 85% of their parole and probation sample experienced at least one traumatic event in their lifetime.

How the *trauma* is assessed and the range of experiences that are included becomes a crucial factor here. This is perhaps best typified by the work of Barrett, Mills and Teesson (2011) who give the highest estimates of all the papers in terms of exposure to a traumatic experience noting that 94% of their sample of 102 participants recruited to a RCT of an integrated treatment for comorbid SUD and PTSD had been threatened with a weapon or had been witness to serious injury or death. Given how the sample was selected it does not particularly inform the overall question of trauma prevalence rates in the male offender population but it is retained as it adds value to our understanding of most commonly experienced types of trauma. Likewise, although the remaining two papers in the review (Kinsler & Saxman, 2007; Miller, & Najavits, 2012**)** did not offer specific prevalence rates for traumatic experiences they were retained as they added value to the other areas under

examination, namely the nature of traumas experienced and the relationship between substance use and trauma in offenders.

Nature of Traumatic Experiences

There were a multitude of traumatic experiences included across the twelve studies reviewed. However, all shared similar themes of direct harm to an individual's personal safety such as physical and sexual assault (Zweig, 2012). This concentration is not surprising as according to Gibson et al., (1999) childhood sexual abuse and adult physical assault appear to be more common antecedents to PTSD among inmates than in the general population.

Certainly childhood traumas appeared to be of particular significance as the Armstrong and Kelley (2008) and Messina et al., (2007) studies focused exclusively on childhood traumas or 'early adverse experiences'. In doing so they attempted to account for the impact of early traumas on later substance use behaviours. Uniquely these papers included the role of abandonment by a caregiver, mental illness in the family, parental substance abuse, incarceration of a family member, geographic instability and removal from home by a state agency. This reflects significant changes to an individual's world at an early developmental stage that might not otherwise be accounted for in more traditional assessments of trauma exposure.

Witnessing significant harm coming to another person, resulting in serious injury or death was another major area of traumatic stress included in a number of studies (Barrett, 2011; Gibson, 1999; Miller, 2012, Owens, 2011). Given the emerging research on evidence of perpetration-induced trauma within both adult prison and mental health settings (Gray et al., 2003; Combaluzier, 2009; Welfare & Hollin, 2012) it is perhaps surprising that no reference as to whom the perpetrators of these violent acts were or comment on the relationships between the victims and the offender as witness were made. When exploring trauma in an offender sample this seems to be a significant oversight, yet it may also reflect an overall acceptance that violence in all its forms will be commonplace in the lives of male offenders.

Of course it may be that the role of violence is over stated in understanding trauma over the life span. Barrett (2011) saw no distinction in trauma histories between violent and non-violent offenders which was unlike other studies and instead chose to include elements which may have traditionally been applied to veteran rather than offender populations, such as the impact of combat participation and torture

As previously discussed one of the biggest issues in determining the nature of traumatic experiences in this population rests with the variation in assessment measures used. This is perhaps best typified by the Clark et al., (2014) and Gunter et al., (2008) studies which simply asked participants whether they had "ever experienced or witnessed or had to deal with an extremely traumatic event?" and did not seek to qualify examination of traumatic experiences by type. Whilst it is recognised that the experience of trauma is highly subjective, such an open ended question potentially lacks refinement in aiding our understanding of the subject.

Substance use in male offenders

Although the review did not directly seek to address the prevalence or type of substance use in this population it is important to note the emergent themes relating to substance use as these add value to an exploration of the role of trauma in substance using male, mentally disordered offenders; once again reinforcing the complexity and heterogeneity of the population under consideration in this thesis.

Prevalence of Substance Use in Offenders

In a study of the Iowa prison population, Gunter, et al. (2008) suggests that 90% of the sample met the criteria for substance use disorders. Looking at a smaller parole and probation sample, Owens et al. (2011) begin to lower the prevalence estimates, suggesting 76% of respondents met the criteria for problematic substance use and 47% of respondents met the criteria for problematic alcohol use. Gibson et al. (1999) offer similar figures for alcohol abuse in offenders, suggesting 85.5% of their sample with PTSD and 81.7% of their sample without PTSD met the criteria for alcohol abuse. The figures they give for drug use are

significantly lower, at 69.6% of their sample with PTSD and 68.5% of their sample without PTSD met the criteria for drug abuse. However, the most striking suggestion from the Gibson et al. (1999) study is that there is little difference in drug and alcohol use between offenders with and without a diagnosis of PTSD. This could imply that the use of drugs and alcohol is a common feature of an offender population, making the motivation for use worthy of further exploration.

The lowest estimate of substance use from all papers is in the Armstrong et al. (2008) study at just 25%. It is difficult to comment on where the source of this variation lays, except that it may relate to the choice of assessment tool used and distinctions made in the studies between current usage, a history of problematic substance use and current dependency.

Patterns of Substance Use in Offenders

The majority of studies in the review made no distinction between the range of substances used by participants, in terms of their depressant or stimulant qualities and it may be argued that this lack of refinement resulted in a failure to fully explore the intricacies in the relationship between trauma and substance misuse in offenders and underlying mechanisms which might explain the correlation. An exception to this is presented in the Messina et al., (2007) study which notes that the study population is primarily stimulant users, including methamphetamine and crack cocaine. It would have been interesting to see this observation being extended into a consideration of how the choice of substance relates to mediating the past experience of trauma, for example in managing mood and activity.

Johnson, Cottler, O'Leary and Abdallah's (2010) study into the associations between PTSD and substance use profiles in women, demonstrated a relationship between alcohol dependency and severity of PTSD symptoms and a relationship between alcohol use with cocaine dependency and personal experiences of physical and sexual violence, such as being mugged, raped or assaulted. The Carlson et al., study (2010, p496) shows a partial consideration of this, although still only in relation to female offenders, citing (Brown, Miller and Maguin,1999) in noting that "female drug offending is more highly associated with a history of abuse, childhood and/or adult, physical, sexual or both, compared to male offending".

It may be however, that gender differences are overstated as the Messina et al., (2007) study shows that both men and women with greater exposure to traumas through the experience of childhood adverse events are more likely to enter the criminal justice system and initiate substance use at an earlier age and those without such a history of cumulative trauma. Likewise in the Carlson et al., (2010) sample of offenders in Arizona, there were no significant differences between genders for reporting of drug problems.

The Relationship between Trauma, Substance Misuse and Offending

The Gunter (2008) study demonstrated a high prevalence of substance use in the offenders they sampled with 90% of their participants (n=254) meeting criteria for substance use disorders. The relationship between substance use and trauma in their study was far weaker with only 23 of the male participants who reported substance use also experiencing post-traumatic stress. The Carlson (2011) study stated that in their sample of male offenders both self-reported alcohol (58.5%) and drug abuse (78.9%) or addiction was associated with more forms of lifetime victimisation by a family member. Unfortunately there was no mention of the age at which this victimisation commenced.

The Gibson et al., (1999) study stood apart from others in the review with its findings that rates of substance abuse did not differ between offenders who did and did not meet the criteria for PTSD. One explanation for the lack of difference in trauma prevalence rates in substance abuse is that there may be a ceiling effect at work due to the unusually high rates of substance abuse across the entire prison population. In addition the issues quantifying and exploring substance use in this population are likely to have an impact on deciphering the relationship between trauma, substance use and offending.

The review did suggest the potential for further exploration of the relationship between offence type, substance use and the development of traumatic stress symptoms. As Barrett (2011) demonstrated, even with similar histories of trauma exposure, those who had committed a violent crime in the month before commencing the study reported significantly greater overall PTSD symptoms severity. Bivariate associations were found between violence perpetration and trait aggression, higher levels of alcohol and cannabis use and individuals

experiencing more severe PTSD symptoms, particularly in relation to hyper-arousal. It was also noted by Pimlott Kubiak (2004) that men with PTSD were more likely to enter community aftercare and recidivate than those without PTSD.

Despite a small sample size, (n=89) the Clark et al., (2014) study focuses attention on offenders with a trauma history, who regularly use substances. In comparison to the trauma only offender group and substance use only offender groups included in the study, this population reported the highest rate of homicidal ideation, problem behaviours, and offences against the person. The Trauma endorsing Regular Substance Use group reported a greater desire than the other groups to receive help managing their stress and tension, dealing with problems in close relationships and learning to express their feelings in healthier ways, suggesting significant treatment and criminogenic needs.

Discussion

The primary aim of this review was to investigate the prevalence rates of trauma experienced by male offenders, to explore the nature of the traumatic experiences endorsed by this population and comment on the relationship between trauma exposure and substance use in male offenders. This was done by reviewing existing literature that commented on the impact of these conditions for offenders, with and without the presence of co-morbid mental illness. Utilising a systematic literature review method a total of 1,899 citations was yielded. Following the application of PICO inclusion and exclusion criteria and quality assessment, twelve studies were retained for a detailed review.

The twelve papers included in this review shared a number of common themes. Firstly in relation to exploring the relationship between trauma exposure and substance use in male offenders, both in prison and forensic mental health settings and secondly in exploring the prevalence rates and nature of trauma presentation in substance and non-substance abusing offenders.

Prevalence of Trauma in Offenders

Of the ten studies included in the review, none included a UK sample and there was significant variation in the rates of trauma reported within offender samples, therefore based on this review it is not possible to suggest a conclusive estimate of trauma prevalence for male offenders in the UK. As an illustration of this wide variation we see that in focusing on a specific incident, Barrett et al., (2011) found 94% of their sample of 102 offenders in a PTSD/Substance Use Disorder treatment group had the traumatic experience of either being threatened with a weapon or witnessing serious injury or death. In assessing prevalence rates more broadly, Armstrong and Kelley (2008), Carlson (2010) and Owens et al. offered equally high end estimates at 70%, 69% and 85% respectively.

These figures are extremely high, particularly in comparison to general population estimates and there has been some suggestion in the literature that trauma prevalence estimates suffer from over reporting; for example memories of childhood sexual abuse or neglect may be exaggerated to help explain a current level of emotional disturbance or faulty thinking patterns. However this idea of there being a 'secondary gain' to inflating a trauma history has been refuted by other clinicians, as a study by Robbins (1985) cited in Carlson, (1997) found there was agreement between psychiatric patients and their non-patient siblings regarding abuse suffered, even though it could be argued that only one of the parties might have been thought to be motivated exaggerate experiences to explain their psychological problems. Although it was beyond the scope of this systematic review to consider motivators for disclosing or withholding a trauma history it is noted that the processes underlying this are likely to have impacted on the trauma prevalence rates reported in the studies.

Pimlott-Kubiak et al. (2004) offered a more modest estimate of PTSD prevalence at 53%, as did Zweig (2012) stating 31% of their sample had been sexually victimised and Gibson et al. (1999) demonstrated that 35% of their sample had experienced a traumatic event over their lifetime with 33% of the sample meeting the criteria for PTSD. In contrast Gunter et al. (2008) were at the low end of estimates, suggesting just 10% of their sample of 264 male prisoners in the USA met the criteria for post-traumatic stress, a figure which stands out in comparison to the other offender samples, as it is far lower than other special populations, for

example veterans but is more in keeping with the general population estimates. It is not possible to account for the differences in relation to the samples used across these studies, as all were derived from prison populations. In the Pimlott-Kubiak et al. (2004) study participants were also selected on the basis of having a substance use disorder, so this may have impacted on the higher estimate. Similarly there were no notable communalities between the assessment measures used in the studies with higher end estimates.

It is difficult to say what the ultimate measure of traumatic stress would comprise as they vary greatly in terms of length and complexity. There is a risk of under reporting when an individual is not specifically asked about a traumatic occurrence or over reporting because of lack of clarity in the question design. Aside from concerns about over or under reporting the vast discrepancy between the studies may well be a reflection of the type of assessment used as self-report measures; focusing on exposure to potentially traumatic events, similar to those used in the Armstrong and Kelly (2008) study are likely to produce higher prevalence figures than studies focusing solely on a formal diagnosis of PTSD. Carlson (1997) suggests that self-report measures are a useful first step in the assessment process and have the potential to yield better client disclosures than face to face interviews, although no methods is totally free of subjectivity. However, irrespective of the criteria applied to warrant recognition of a trauma history, ranging from exposure to a specific adverse event in childhood, to a diagnosis of PTSD and individual differences in response to exposure to stressors, the review makes it clear that the experience of exposure to a traumatic stressor is a common feature in both the male and female offender population.

The Clark et al., (2014) study stands alone in the unique contribution it makes to the review as the only paper to offer a prevalence rate (15.7%) of endorsement traumatic stress symptoms in male offenders who regularly use substances, rather than focusing on those with a problematic drug or alcohol use history. It may be that access to this figure was made possible through the open assessment of trauma used, utilising the PTSD screening question from the Mini-International Neuropsychiatric Interview. This paper also opens up a consideration of what the behavioural impact of regularly using substances in offenders with a trauma history might be, in terms of higher rates of homicidal ideation, increased risk of

committing offences against the person and externalising challenging and problematic behaviours

Nature of Traumatic Experiences

Sources of trauma

In a review of studies focusing on male prisoners by Miller and Najavits (2012) the most commonly reported sources of trauma were found to be; witnessing death or serious injury, followed by experiencing a physical assault and childhood sexual abuse. The Owens et al. (2011) study highlights similar themes, including [witnessing] the sudden death of a family member or friend, life threatening road traffic accidents, physical assault and abuse (both sexual and physical) in childhood.

The Armstrong and Kelly (2008) and Messina et al. (2207) studies focus more on the impact of early traumas, acting as antecedents to later difficulties and psychiatric co-morbidities, citing additional traumatic experiences such as; abandonment, parental substance abuse or mental illness, neglect, geographic instability, family violence, incarceration of a family member and removal from the family home by a state agency (fostering or adoption). It seems that developmental level at the time of the trauma first occurring may be an important factor here (Carlson, 1997) as the younger the individual is when the trauma occurs, the more severe it is thought their trauma symptoms will be.

Whilst a focus on early experiences is undoubtedly important, in the reviews by Armstrong and Kelly (2008) and Messina et al. (2207) experiencing trauma as a result of being the commissioner of violence, for example committing a homicide or serious physical assault was neglected. Barrett et al. (2011) begin to address this and note that 95.7% of their sample of 102 participants recruited to a randomised controlled trial of an integrated treatment for comorbid SUD and PTSD, developed a substance use disorder and experienced their first trauma, prior to committing a violent crime and subsequently experienced significantly more and severe hyper-arousal symptoms post offence.

Victimisation

Zweig, Yahner and Rossman (2012) concentrate particularly on role of physical and sexual victimisation throughout the life course as a major source of trauma in the offender population, irrespective of gender and view it as a powerful motivator in continuing substance use. They locate the relationship between trauma and substance use and offending within General Strain Theory (Agnew, 1992) suggesting that the *strain* of the unjust experience of being victimized, either sexually or physically in adulthood leads to individuals trying to alleviate negative feelings through internalised means such as substance use and externalised means in the form of criminal behaviours. Whilst this shows a clear relationship between trauma, substance use and offending behaviours it perhaps lacks the subtlety of including a consideration of the impact of cumulative traumas on the offender population and neglects the impact of early traumatisation on the development of subsequent coping strategies.

Incarceration

It will no surprise that the process of being detained under the Mental Health Act or by the Criminal Justice System can have a profound effect on psychological well-being, irrespective of inherent psychological resilience or prior exposure to traumatic events. It is important to recognise that prison can in and of itself be a source or trauma, or may trigger memories of past traumas (Pimlott-Kubiak, 2004) and it has been suggested that male prisoners are more likely to be exposed to traumatic events during incarceration than their female counterparts (Pimlott- Kubiak, 2004).

Miller and Najavits (2012, p1) describe the prison environment as being ‘full of unavoidable triggers’ and sources of re-traumatisation, such as strip searches, the institutions rules and regulations, discipline, the presence of hostile authority figures and restricted movement. Likewise, Kinsler and Saxman (2007) outline the myriad of ways in which the prison environment can be traumatising, including; the relationship between guards and prisoners,

the harsh physical environment, prison hierarchy, threats from other inmates and the de-humanising aspect of incarceration.

Aside from the physical restrictions it imposes, prison can be a focus point for violence and victimisation, which offenders may not have the physical or psychological resources to cope with. Several of the studies included in this review focused on samples derived from offender treatment groups, such as offenders on parole, who were remanded for program participation or housed on low security prison wings. It is possible that in these relatively less restrictive environments, i.e. in comparison to high secure prison or hospital settings, that treatment outcome would be more favourable and trauma related to incarceration under-reported. Komarovskaya (2009) cited in (Miller & Najavits 2012, p2) also notes that "higher rates of trauma and earlier age of trauma onset is associated with increased violence and victimization in prison" again pointing to a cyclical relationship between past traumas, current victimisation and coping.

The potential for prison to be a hostile and threatening environment cannot be underestimated, as Miller and Najavits (2012) report, men are rarely safer behind bars, than prior to their incarceration, particularly as the risk of sexual assault is thought to increase exponentially. Wolff and Shi (2009) note that in a study of 6,964 male inmates, 35% experienced physical victimisation, for example being threatened or harmed with a knife, hit or kicked whilst in prison. Male prisoners are also thought to face a significantly increased threat of lethal violence, that may understandably trigger externalising trauma responses and high levels or arousal, Freedman and Hemenway (2005) cited in (Miller & Najavits 2012, p3).

The Relationship between Trauma, Substance Misuse and Offending

Despite there being limited research in this area this review does demonstrate a significant relationship between the high prevalence of substance misuse among the offender population

and higher reports of lifetime exposure to traumatic experiences, in comparison to the general population, with the Clark et al. (2014) study suggesting a rate of 15.7% for the two conditions in their sample of 89 offenders. More broadly, Messina et al. (2007) describe an environment where it has been commonplace for both men and women, and in particular those with substance misuse difficulties and those who are in contact with the Criminal Justice System to report trauma rich histories in which childhood abuse typically features.

The Gibson et al. (1999) study is consistent with previous research in noting that there is a high occurrence of alcohol and drug abuse in general population samples with PTSD. However they differ from other researchers in the review by suggesting that there was no significant difference in rates of substance abuse, between those inmates who did and did not meet the criteria for PTSD, in their sample of 213 male inmates. There are several possible explanations for this unusual finding; firstly the assessment tool, the DSM-III-R, selected by Gibson et al. (1999) may not have been sensitive enough to detect true differences between the PTSD and non-PTSD group. The study was also not particularly sensitive to a history of trauma exposure and in selecting only the rigid diagnosis of PTSD for examination, the relationship between substance use and trauma exposure may not have been fully explored.

Miller (2012) and Kinsler and Saxman (2007) argue strongly from the position that US jails are incarcerating a generation of abuse survivors, rather than offering them treatment and that being in the prison environment increases the risk of sexual assault and lethal violence for men and may trigger more externalising responses and high levels of arousal. Similarities can be seen in the work of Najavits (2009) who suggests that substance abuse may be used to self-medicate trauma symptoms within secure settings and the Kinsler and Saxman review of Vermont prisons (2007, p84), states that incarcerated individuals “cope with their own prior abuse through three common pathways; depression, anger and violence, and substance abuse.” Clark et al. (2014) echo this by highlighting an expectation that those with a trauma history, who regularly use substances, are more likely to externalise problem behaviours such as homicidal ideation and offences against the person because of characteristics related to trauma exposure and drug use. These findings could be seen to add support to the idea of offering trauma-informed correctional care. In this respect trauma-informed approaches to treatment delivery and correctional care explicitly acknowledge the prevalence and impact of trauma in the mentally disordered offender population and seek to create a safe therapeutic environment for all programme participants, irrespective of whether they have formally

acquired a trauma related diagnosis. Individuals who have experienced trauma may cycle in and out of mental health, drugs and criminal justice services. If trauma is not addressed they may be seen as ‘treatment resistant’ or ‘difficult’ clients. Trauma-informed interventions aim to help participants understand how past experiences are shaping current responses and behaviours, reduce perceived threats, avoid re-traumatisation and support the development of more effective coping strategies**.**

In sum this review focuses on the centrality of trauma and substance use in the lives of male offenders. It highlights the need for integrated programming for offenders with substance use and co-occurring disorders and introduces the principles behind trauma-informed correctional care.

Chapter 3

A Critique of the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES)

Introduction

The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) (W.R. Miller et al. 1990; W.R. Miller and Tonigan 1996) is one the measures used in the research presented in the next chapter to aid exploration of the role of trauma in substance using, male mentally disordered offenders. Donovan (1995) describes it as a measure which assists clinicians in determining readiness to change and considers that it has direct implications for the development of interventions intended to enhance client engagement and treatment compliance. Carey, Purnine, Maisto and Carey (1999) conducted a review of measures of readiness to change and found that despite communalities in theoretical background, popularity with clinicians and accessibility to clients, there will be psychometric limitations.

Psychometric tests are designed to measure the intrinsic mental characteristics of a person (Hammond, 2006); constructs which by their very nature and in comparison to physical measurements of health status, or observed performance on set tasks, are naturally far less tangible and more difficult to access. This illustrates a quandary between a willingness to apply scientific rigour to research and clinical practice and the Psychologist's need to accept that the underlying aspects of an individual's psychological functioning cannot be directly measured.

Critics from the field of natural science would argue that the application of psychometric theory to an understanding of mental characteristics is essentially flawed, as it is not possible to absolutely define and quantify such features. It is readily acknowledged that the design of measures raise unique issues worthy of consideration. With self-report measures in particular, which may for example seek to uncover and interpret inherent attitudes and intrinsic

motivations, there will always be a degree of measurement error. Adopting such a subjective approach to assessment makes this potential for error unavoidable (Podsakoff, MacKenzie, Lee and Podsakoff, 2003). This is not to say that psychometrics offer little more than structured guess work, on the contrary they allow for consistent data collection, continued exploration of mental constructs, and revision of the test's structure. In turn this gives the opportunity for assessments to be developed and refined over time in response to treatment needs.

An area of treatment that continues to pose difficulties in forensic mental health services relates to the assessment and management of drug and alcohol use. Rates of illicit substance misuse in forensic settings is known to be high. Indeed, Carlson, Shafer and Duffee (2010, p504) in their prison sample of over 2,000 inmates, state "self-reported prevalence rates for substance abuse problems range from 79-81%". Similarly, DiClemente, Nidecker and Bellack (2008) suggest 50% of all persons with severe mental illness meet the criteria for substance use disorder. Hence, the implications of continued drug and alcohol use for re-offending, the revocation of conditions of release, engagement with offending behaviour programmes and additionally, in the case of forensic mental health, relapse in mental state are clear (Easton, Swan & Sinha, 2000).

Therefore, it follows that change in substance use behaviour is an appropriate treatment target and an assessment of the individual's stage of change in respect of this is a key measurement in forensic settings. Particularly given that only a small percentage of individuals who have alcohol related problems seek help, it is important to understand the processes underlying change. Also as McMurran, Tyler, Hogue, Cooper, Dunseath and McDaid (1998) illustrate, assessing motivation to change in offender populations, by establishing their stage of change, has a significant role to play for selection into treatment programmes and for assessing therapeutic progress. This speaks to a wider desire to allocate limited resources as effectively as possible, establish whether intervention is impacting behaviour, and most crucially determine whether change has been internally or externally driven.

This critique examines a psychometric tool developed by Miller and Tonigan (1996), which attempts in part to address these issues, namely the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES). Miller et al. (1996) describe it as an experimental measure, which was originally designed to assess readiness for change in alcohol abusers presenting for specialist outpatient treatment. The measure will be examined in terms of its psychometric properties, looking specifically at questions of reliability and validity. This critique will also explore the measures relationship with existing literature regarding models of behavioural change and the measure's application to forensic mental health settings in assessing motivation and readiness to change substance misuse behaviours.

Search Strategy

A database search was conducted in December 2013, with a set date limit of 1996 to 2014 to reflect the time frame of the systematic review included in this thesis and to although an adequate period of research to be accumulated post development of the tool. Papers were included in the critique they provided an overview of the development of the measure, examined the psychometrics properties of the tool or provided a critique of the principles underpinning the design of the assessment. The search terms; *Stages of Change Readiness and Treatment Eagerness Scale, SOCRATES, psychometric properties and critique* were applied to the following databases;

OVID: PsycINFO

OVID: EMBASE

ERIC

Applied Social Sciences Index and Abstracts (ASSIA)

SWETSWISE

The Stages of Change Readiness and Treatment Eagerness Scale

The most current version of the measure, Version 8, is a reduced 19-item scale based on factor analyses with prior versions and is an extension of the original tool to become a two

part measure. It now incorporates the SOCRATES 8A (for alcohol use) and 8D (for drug use) to enable assessment of readiness for change in both alcohol and drug users. The tool is in the public domain (see Appendices H and I); it does not require special training to administer or permission for use and although accompanied by scoring guidance and a brief overview of the tool a separate administration manual is not available.

Purpose of Creating the Tool

The development of the SOCRATES could be seen to be a response to the emerging evidence, especially from the addictions field, building on the concept of Stage Theory. Stage Theory proposes that behavioural change occurs as an individual moves through discrete stages and can be marked by distinct shifts in attitudes and behaviours. In particular, the Trans-Theoretical Model (TTM) of behaviour change (Prochaska and Velicer, 1997) popularised this way of conceptualising behaviour change. Initially it focused on change in nicotine smokers and then transferred the theoretical concepts to a wider addiction field to include drugs and alcohol.

Readiness to change can be defined as the extent to which a person is cognitively inclined to accept or adopt a plan to purposefully alter their situation (Rafferty, Jimmieson and Armenakis, 2012). Motivation to change is seen by Golay (2008) as encompassing internal and external factors that influence the level of motivation. Readiness to change and motivation to alter behaviour finds support in the literature as a mediator and potential predictor of change (Demmel, Beck, Richter and Reker, 2004) and generate interest for clinicians' working with a variety of populations. Ward, Day, Howells, and Birgden, (2004) emphasise the importance of having a sound understanding of'readiness' in offender rehabilitation programmes, suggesting this understanding allows for fuller engagement in treatment and increases the probability of good treatment outcomes.

Theoretical Model

The Trans-Theoretical Model of behaviour change (TTM) or Stages of Change Model (illustrated in figure 2), on which the development of the SOCRATES is said to be based, has

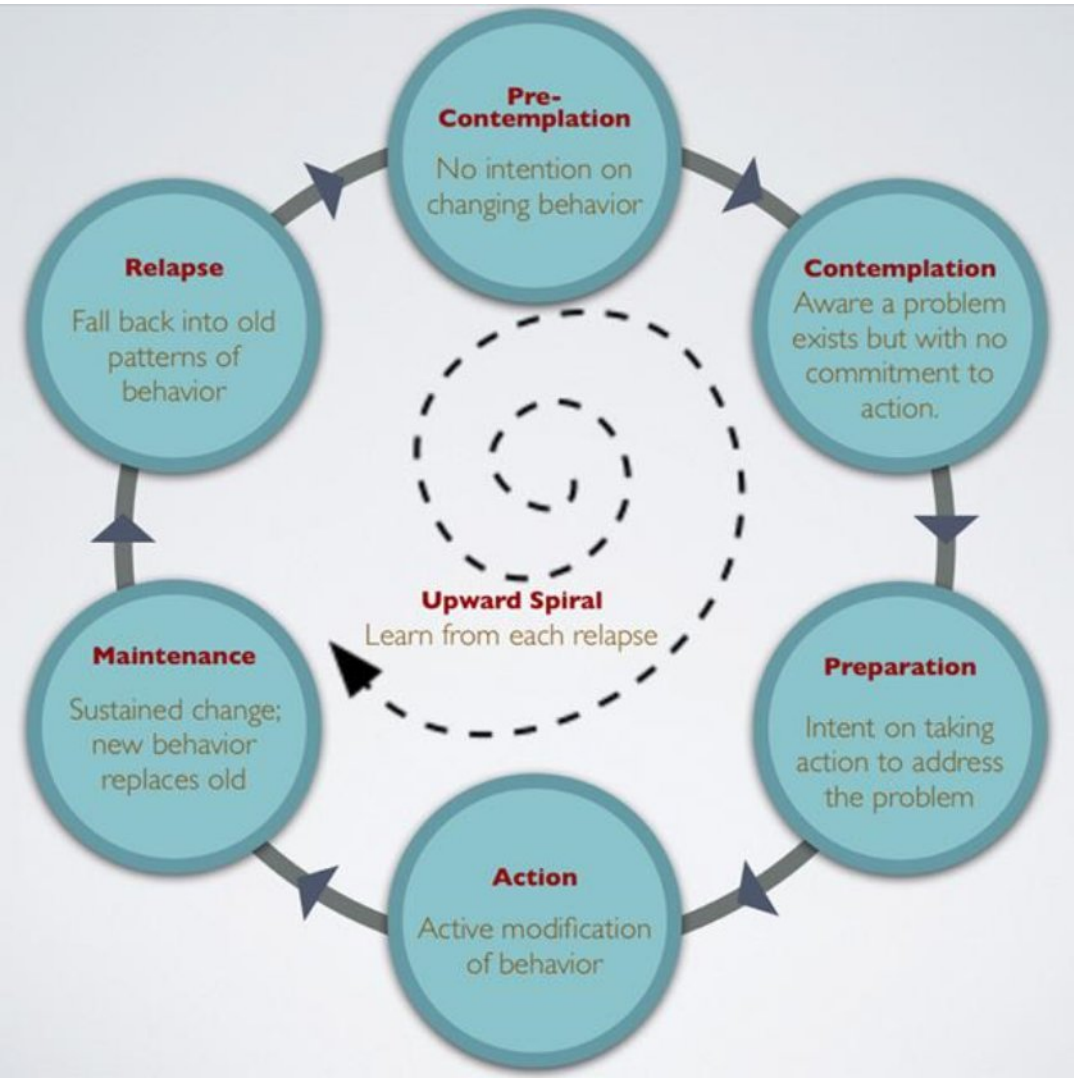
been shown to have a significant role to play in tailoring treatment to meet individual need and in predicting treatment outcome. An assumption underlying this model is that at each stage of change there are a number of different change processes and supporting attitudes present; indicators that the SOCRATES appears to be attempting to access.

An examination of the literature suggests that the terms motivation to change, stage of change and readiness to change are often used interchangeably when exploring substance abuse behaviour. In sum, a broad definition of 'readiness to change' can be seen to encompass attitudinal shifts, dissatisfaction with a current behaviour, openness to discussing problematic aspects of the behaviour, modifications and ongoing change efforts (Carey, Purnine, Maisto & Carey, 1999). This suggests that in assessing readiness to change, in just 19 items, the SOCRATES purports to tap into a wide range of attitudinal and behavioural features, and potentially calls into question the accuracy with which all these features can be translated into three scales.

More recently the TTM has been subject to criticism in the literature (West, 2005), with concern that the supposedly distinct stages outlined by the model lack absolute definition and that there is no clear specification of the variables which influence the individual's transition from one stage of change to the next. Similarly, it has been argued that it has been difficult to assess how effectively the TTM can be applied to substance use behaviour as the literature does not make a clear distinction between the theoretical model and measures designed to capture it (Migneault et al., 2005).

This criticism goes to the very heart of concern with the design of psychometric tools. If the underlying evidence base and model on which the tool is built can be said to be flawed, so can the resultant assessment tool and as Ward, Polaschek and Beech (2005) state, the true evaluation of how 'good' a theory is, lies in its effectiveness in practice.

Figure 2: Stages of Change Model



Development of the Tool and Evidence Base

The assessment tool was originally developed by Miller in 1987, with scale items agreed following discussion with a number of colleagues in the addiction field. Initially it contained four, 8 item scales, intended to map on to the phases of pre-contemplation, contemplation, determination and action. As it was intended for use with clients first presenting for treatment, the Maintenance stage was originally excluded and later re-introduced to reflect the structure of the TTM as a whole.

The tool was normed on a large sample (n= 1,726) of male and female outpatients receiving treatment for alcohol use and was originally a 40-item measure. As previously discussed in its original development it was intended to represent the Stages of Change, however a stage like structure to the tool was not confirmed by factor analysis (Carey et al., 1999) and so further revision was required.

After failing to produce an assessment tool that clearly mapped onto a stages of change model, Miller and Tonigan (1996) instead claimed to have created a model which reflected the "continuously distributed motivational processes that may underlie stages of change" (p84). Although it sounds highly appealing unfortunately this idea of a motivational continuum is not supported by profile or cluster analysis. It may be that to an extent the principles guiding the development of tool are not born out in the process of its use. As Migneault, Adams and Read (2005) suggest a lack of agreement in how scale scores are to be interpreted in relation to the Stages of Change model, makes the application of this construct to problematic substance use even more difficult to evaluate.

Overview of the Tool

Miller et al., (1996) describe the tool as a self-report measure, requiring respondents to indicate how they 'might or might not feel' about statements related to their substance use behaviour, on a five point Likert scale, over 19 items. Indicating how one might or might not feel (even within the confines of a Likert scale) is clearly open to wide interpretation and even though the test instructions encourage respondents to reply in terms of how they feel 'right now', in practice there is the potential for respondents to put their own interpretation on the suggested timeframe. Restricting responses in this way could be seen to add an artificial element to the assessment process and may lead to the assumption that readiness to change is a constant, not subject to variation over time, quite the opposite to Miller's intent.

According to the authors of the tool, the measure yields three factorially-derived scale scores, across what are described as distinct domains of: Problem Recognition, Ambivalence and Taking Steps. In terms of Recognition there is a clear distinction made between high and low

scorers. High scorers on this measure are said to be able to acknowledge substance use or alcohol problems, recognise the harm of continuing the behaviour and express a wish to change. In contrast, low Recognition scorers show a tendency to deny problems and reject diagnostic labels (such as drug addict or alcoholic). Implicit in this definition is the notion that the recognition of problematic drug or alcohol use equates to a readiness to change the behaviour, an assumption not necessarily born out in the literature. The relationship may be far more subtle as studies exploring the impact of appraisals of alcohol-related symptoms on the interpretation of drinking-related problems and willingness to address this demonstrate (Mulia, Schmidt, Bond, Jacobs & Korcha, 2008). Likewise even if an individual recognises there are negative consequences to behaviour, if for example, they are rationalised as part of a normative drinking experience, the recognition of negative consequences may not be enough of a motivator to translate into taking steps to change drinking patterns (Vik, Culbertson & Sellers 2000).

High scorers on the Taking Steps scale report to be actively doing things to make positive changes and want help to prevent themselves from 'sliding back into old behaviour patterns', whereas low scorers on the Taking Steps scale are not currently or have not recently done anything to change their behaviour. Indicating strong agreement with items on the assessment such as; "I'm not just thinking about changing my drinking, I'm already doing something about it" are also assumed to denote readiness to change. However, it is not clear what 'doing something' entails and just how active in planning for a behavioural change and internally motivated a person has to be to demonstrate true readiness to make changes.

Finally, on the Ambivalence scale a high score is seen to reflect uncertainty, with the individual questioning whether they are in control of their behaviour and the extent of harm it might be causing. In terms of the relationship between ambivalence and readiness for change, motivational interviewing techniques (Miller & Rollnick, 2002) typically attempt to generate discrepancies and utilise self-questioning to help an individual move through the continuum of the Stages of Change. It is important to note however, that a low score on this scale may be because an individual knows that their drinking or drug taking is causing problems (high recognition) or because they know they do not have substance or alcohol use problems (low recognition). Therefore, a low Ambivalence score must be interpreted in relation to the

Recognition score (Miller & Tonigan, 1996) in order to contribute meaningfully to an overall assessment.

Information from the scoring form is translated into total scores for each scale and transferred to a Profile Sheet (shown in Table 1) to determine the decile range; it is noted that there is a wide score range available as a person can move from very low to very high scores. Ideally if used as an outcome measure there should be a significant shift from low to high scores on the Recognition and Taking Steps scales, indicating that someone now realises they have a problem with their drug or alcohol use and that they are actively taking steps to address this and from high to low scores on the Ambivalence scale, demonstrating an increased openness to reflection, as might be expected of someone in the contemplation stage of change.

Table 4

Profile Sheet

Psychometric properties – Test Retest Reliability of the SOCRATES

DECILE SCORES	**Recognition**	**Ambivalence**	**Taking Steps**
90 (Very High)		19-20	39-40
80		18	37-38
70 (High)	35	17	36
60	34	16	34-35
50 (Medium)	32-33	15	33
40	31	14	31-32

30 (Low)	29-30	12-13	30
20	27-28	9-11	26-29
10 (Very Low)	7-26	4-8	8-25
RAW SCORES (from Scoring Sheet)	Re=	Am=	Ts=

Characteristics of the Assessment

Self-report Measures

It is difficult to separate the concept of motivation to change from a broader understanding of readiness to change as readiness is such a broad construct, for example including; confidence in ability to enact change, confidence in the treatment being offered, practical considerations, such as ability to attend sessions, whereas motivation to change is perhaps better described as a component of readiness. In line with other psychological constructs, motivation itself is not something that we typically observe, but is inferred by observing behaviour (Gay, Mills & Airasian, 2005). Therefore, it can be problematic to use self-report measures of readiness to change as a clear indication that the behavioural change will actually be enacted.

Self-report measures also assume that respondents will be motivated to complete the assessment in an open, honest and accurate fashion. In describing the development of the SOCRATES, Miller and Tonigan (1996) give no indication of the steps taken to validate the self-reported responses with other potentially more accurate measures, for example using urine drug screens or breathalysers to confirm that steps taken to achieve abstinence have been maintained. This could be seen as an important oversight as Magura and Kang (1996) in

a meta-analysis of self-reported substance use with a biological criterion of validity found that drug taking was significantly under-reported and suggest this could significantly bias treatment outcome studies. It is entirely probable that under-reporting also occurs when the SCORATES tool is administered in forensic mental health settings, resulting in a significant response bias, as there is much to be gained by appearing to be complaint with treatment and willing to undertake behavioural change.

Outcome Measurement

Although it was not specifically designed as an outcome measure the SOCRATES may be amenable for use as a pre and post intervention assessment to assess whether an increased willingness to change health related behaviour is evident, certainly intuitively it makes sense that the tool could be used this way. However, under more critical examination it is worth noting the accompanying SOCRATES administration instructions do not provide guidelines as to how the tool might be best employed in this way. Nor is there a sense of what would represent a significant and meaningful change in scale scores, therefore the SOCRATES should be used as an outcome measure with caution.

Reliability

Internal Reliability

Version 8 of the SOCRATES manual reports the psychometric characteristics of the 19 item measure, as shared in Table 5. This demonstrates that overall the tool has good internal consistency. Of the three scales the Recognition and Taking Steps scales appear to be the most reliable and stable, whereas support for the Ambivalence scale is more mixed. The sample was North American, included men and women and was derived from a multi-site clinical sample (n=1,672) of clients in outpatient treatment programs (five sites) and clients seen for aftercare following residential treatment (five sites). The ethnicity of the sample was described as white (n=1,344), black (n=164), Hispanic (n=135) and other (n=29).

Table 5

Psychometric properties – Internal Reliability

	Cronbach's Alpha
Ambivalence	.60-.88
Recognition	.85-.95
Taking Steps	.83-.96

Concern about the ambivalence scale is borne out by Isenhart (1994) who conducted a validation study of the SOCRATES with male in-patient veterans n=165 and found a similar factor structure to the original SOCRATES. Insenhart (1994) also conducted a cluster analysis on the scale scores and determined there were three potential clusters; Dertermination, Action and Contemplation, which were felt to relate better to the TTM. The correlations between the three derived subscales were: Determination and Action, r = .35, p < .00l: Determination and Contemplation, r = -. 17, n.s.; and Action and Contemplation, r = -.03, n.s. This perhaps suggests more of dichotomy between those changing and not changing behaviour and does not necessarily reflect the idea that changes occurs along a continuum of small steps.

Test Retest Reliability

The manual also reports the figures for test-retest reliability, as shown in Table 6, which are known to be an essential feature of sound test construction (Kline, 1985). Kline (1985) also suggests that a minimum a level of 0.7 needs to be reached using correlational analysis (Pearson's *r*) and as can be seen below in this respect the overall reliability in this respect appears good.

Table 6

Psychometric properties – Test Retest Reliability

	Intraclass	Pearson
Ambivalence	.82	.83
Recognition	.88	.94
Taking Steps	.91	.93

Based on these assessments of internal reliability and test retest reliability the SOCRATES appears to be a relatively robust measure. However, it is important to note that the psychometric properties of the drug taking version of this tool have not been reported separately. Additionally Carey et al. (1999) state in analyses of the SOCRATES measure, temporal stability has received little attention, although they did explore this in their study, re-administering the measure two to seven days after initial use. All of the intraclass correlation coefficients (ICCs) ranged from .73 to .90. Therefore, over the short reassessment interval participants gave consistent responses to all of the measures, Carey et al. (1999).

Validity

Content Validity

Haynes, Richard and Kubany (p238, 1995) define content validity as "the degree to which elements of an assessment instrument are relevant to and representative of the targeted construct for a particular assessment purpose".

In the case of the SOCRATES content validity can be assumed if items on the measure adequately represent the constructs underpinning the TTM and readiness and motivation. Whilst the SOCRATES purports to assess readiness for change, it does not map directly on to

the five stages of change which make up the Prochaska and DiClemente model and so in this respect, if a rigid interpretation of the processes underlying change is applied then the content validity of the tool may be compromised (Norcross, Krebs & Prochaska, 2011).

Face Validity

On initial examination the SOCRATES appears to have good face validity, in that the test items appear to be tapping into questions of contemplating on the impact of substance misuse, making plans to change the behaviour and maintaining a drug free lifestyle.

However, in order to ensure face validity is actually inherent in the test it is important to consider the influence of the individual questions forming the test items, accompanying instructions and the response format. For example, if the individual completing the self-assessment measure finds the tool difficult to comprehend, face validity will be impaired and inaccuracies in responses may occur.

In responding on the SOCRATES, a five point Likert scale is used; as respondents endorse items on a scale ranging from strongly disagree to strongly agree, with a mid-point of undecided or unsure. Use of this response method assumes all those completing the tool will be familiar with nuances between, for example agreeing strongly as opposed to just agreeing and that this way of responding will have a degree of consistency across respondents. Lee, Jones, Mineyama and Zhang (2002) highlight strong culturally bound differences in responding on a Likert scale when there is an emotionally loaded element to the questions, given the nature of the questions this could apply equally to the SOCRATES and mask a culturally dependent response bias.

Over the 19 test items there is an element of repetition as multiple questions relate to the endorsement of one scale. For example, in relation to the Recognition scale the statements “Sometimes I wonder if I am an alcoholic” and “I am an alcoholic” are posed within a few questions of each other. Although no research has been conducted into the specific impact of this, it is important to consider how frustrating the respondent might find this type of test

construction. Likewise, the impact of using loaded terminology such as ‘alcoholic’ or ‘drug addict’, could lead to a rejection of the label, motivate the respondent to answer in a way which makes them are problem free and may impact on the acceptance of the test items and produce an unrealistically low score on the Recognition scale.

In a similar vein there may be difficulties in interpreting the Taking Steps scale, as a low score here could be from an individual who fully recognises substance misuse problems but feel they have addressed them simply by beginning treatment or by having taken part in an assessment. In this respect the measure does not distinguish phases of treatment, and ambiguously phrased statements regarding how much additional effort someone needs to take to change a behaviour can blur an assessment of readiness to do this. The question of ‘Taking Steps’ is also problematic in a forensic setting, as sanctions and restrictions are put in place to limit access to illicit substances and alcohol and so a confused picture of whether it is the ‘system’ or the individual who is taking the ‘step to change’ arises. Overall the tool lacks consideration of the role of personal responsibility in initiating change.

Despite these concerns, broadly speaking the concepts of problem recognition, ambivalence and taking steps, which underpin the SOCRATES can be applied to the Prochaska and DiClemente model, as being related to the concepts of pre-contemplation, contemplation, preparation, action and maintenance, and so without fully examining the constructs, face validity appears to be present.

Criterion Validity

Concurrent Validity

Concurrent validity provides a measure of how well a particular test correlates with a previously validated tool, measuring the same or similar construct. Miller and Tonigan (1996) report that the 19-item scale scores are highly related to the longer (39 item) scale, on which the original SOCRATES was based in the following ways; for Recognition (r= .96), Taking Steps (r=.94), and Ambivalence (r=.88). Of course as an overall measure of validity, concurrent validity should not be taken on its own and can be seen as a relatively weak

measure. It is also worth noting that there is the potential that if there are inaccuracies in the original test development and a new test correlates well with it, rather than being a positive sign this may be an indication that the new test shares the same flaws as the old.

Bertholet, Dukes, Horton, Palfai, Pedley, and Saitz (2009) used Alpha Factor Analysis (AFA) and Principal Component Analysis to establish the factor structure and concurrent validity of the SOCRATES among medical inpatients (n= 337) with what they described as unhealthy alcohol use, who were not actively seeking help for specialised alcohol treatment. They did not find support for the Miller et al. (1996) three factor solution and instead support the work of Maisto et al. (1996) showing that a two factor solution provides a better fit for the model. Bertholet et al. (2009) consider the two 'readiness constructs' within the SOCRATES to be 'Perception of Problems' and 'Taking Action'. The same authors also sought to establish further concurrent validity by correlating cluster-based SOCRATES scores with the Alcohol Use Disorder Identification Test (AUDIT) and demonstrated a clear correlation between alcohol consumption levels, alcohol-related problems and alcohol dependence. This perhaps suggests that the structural validity is strongest for the Recognition scale of the SOCRATES, with robust recognition of problematic use.

Whilst this suggests within an alcohol population the SOCRATES can be a sound measure, less encouragingly Bertholet et al. (2009) found that neither component of the two factor model, perception of problems (component one) and taking action (component two) was significantly correlated with drug use with marijuana use resulting correlation coefficients of -0.02 and -0.06 for components one and two respectively. This suggests that further work is needed to improve validation of the drug use version of the measure (SOCRATES 8D). The Burrow-Sanchez and Lindberg (2007) study (n= 338 adults in substance abuse treatment) also advocate for the adoption of a two factor model as the best fit for the SOCRATES. DiClemente, Schlundt and Gemmell (2004) suggest one way of meeting the challenge of assessing stages of change and motivational readiness is to use the subscale scores of the SOCRATES and the University of Rhode Island Change Assessment scale (URICA) in combination.

Predictive Validity

The better a measure is at being able to predict criteria or a criterion, the higher its predictive validity is considered to be (Kline, 1986). This will of course be impacted by the strength of the model on which the tool is built, as prediction will be based on the ability to accurately assign an individual to a stage of change and comment on their readiness to alter a behaviour.

In exploring measures of readiness to change substance abuse, Carey et al. (1999) suggest stages of change should be related to willingness to engage in treatment and treatment retention and drawing on the Isenhart (1997) study that shows that the Recognition score of the SOCRATES predicted affiliation with Alcoholics Anonymous groups. The Recognition score was broken down into elements of Action, Determination and Contemplation and Isenhart (1997) found that as pre-treatment Action scores increased, the likelihood of being abstinent a year after entering treatment also increased. Likewise as pre-treatment Determination scores increased, the chances of being part of an AA group at the year follow up also increased and as pre-treatment Contemplation decreased, the chances of accessing a sponsor at one follow up also significantly increased. Overall though the tool does not appear to have great predictive validity when judged under the same criteria as the Ambivalence and Taking Steps scales of the SOCRATES do not appear to add any predictive validity to the tool.

Construct Validity

Structural Validity

As the SOCRATES is described as a stage of change measure it is reasonable to expect, as Carey et al. (1999) propose, that a factor analysis of the scales should show response clusters related to the five areas of pre-contemplation, contemplation, preparation, action and maintenance. However, as previously illustrated, the SOCRATES factors do not correspond directly to the predicted stages of change. This is in contrast to other stage of change measures, such as the Readiness to Change Questionnaire (RTCQ) (Heather & Rollnick,

1993) and the Texas Christian University (TCU) Motivational Assessment (TCU Institute of Behavioral Research, 2002) that do relate directly to the proposed stages of change.

In contrast to Miller and Tonigan's (1996) three factor model, Maisto et al. (1996) propose a two factor model (which retains 15 of the original questionnaire items) and combines the Ambivalence and Recognition scales to form a new scale (AMREC), using 9 of the original Ambivalence and Recognition items and retains 6 of the items from the Taking Steps scale, as they suggest this equals a better fit of the data. The Cronbach's alpha was computed for AMREC to assess internal consistency and showed a value of .91.Six month follow up data showed that AMREC continued to alcohol consumption. Maisto et al. (1996) suggest that a possible explanation for this alternative factor structure is that in its current format it is not possible to distinguish between ambivalence and recognition, as although these concepts may appear to be easily identified there is inadequate differentiation in the questionnaire items.

Maisto et al. (1996) are not the only authors to suggest a reworking of the SOCRATES, drawing on an alternative factor structure. For example, Mitchell, Francis and Tafrate (2005) used a sample of active military duty personnel to test the factor structure of the SOCRATES, suggesting his group showed many similarities to the sample on which the tool was originally normed and following Principle Components Analysis found support for a 14 item, three factor solution, retaining the labels Recognition, Ambivalence and Taking Steps.

Further issues with the wording of the questions have been highlighted, as Bertholet et al. (2009) explain, item 19 "I have made changes in my drinking and I want some help to keep from going back to the way I used to drink", which according to Miller et al. (1996) loads on the Taking Steps scale, is actually a composite question. With this item in particular it could be argued that the question is addressing changes that have already been made and a wish to get help in making these changes. When items are constructed in such a way that they have the potential to become blurred in the respondents mind and do not load definitively on a single factor, room for error emerges. When this occurs it could be argued that the overall structure of the tool is compromised.

Norms and Interpretation

The SOCRATES scoring guide states that the interpretive ranges given are based on a sample of 1,726 adult men and women presenting for treatment of alcohol problems through project MATCH, an initiative from the United States, supported by the National Institute on Alcohol Abuse and Alcoholism, which began in 1989 and lasted eight years, investigating optimal treatment for alcoholism in community settings. The SOCRATES is now being widely used across a range of in-patient and outpatient settings, with mental health populations and to assess readiness for change in a range of substance use disorders, however without population specific norms, to support application to other populations, interpretation cannot be applied with absolute confidence.

The SOCRATES guide also states that individual scores on each of the scales should be ranked as being low, medium or high, however it is worth noting that these cut-offs are relative to individuals already presenting for alcohol treatment. Therefore, it may not be appropriate to apply the same criteria to a forensic population, who we might expect would be less likely to recognise difficulties and more unwilling to freely present for treatment.

In terms of potential for cross-cultural application of the SOCRATES, small scale studies are emerging which suggest the factor structure of the measure has been demonstrated the be stable when translated from the original English version. For example, a Persian version (Parvizifardi, Ahmad, Baba & Sulaiman, 2012) showed that alpha coefficients for all subscales of the translated instrument at pre-test ranged from .69 to .81 and the alphas at post-test ranged from .66 to .79. The Pearson correlation test indicated a high correlation coefficient of .86 between test and retest, suggesting the translated instrument has very high content validity and high reliability. Similarly, Figlie, Dunn and Laranjeira (2005) have developed a Portuguese version of the SOCRATES alcohol measure and have identified a two factor structure, by removing some of the items from the weaker Ambivalence scale, which supports the use of this tool.

Use for Assessment and Research Purposes

Use of the Tool in Forensic Mental Health Settings

To date there are no specific studies exploring the use of the SOCRATES with offender or forensic mental health populations and only a small scale study which applies it to the area of substance use and domestic violence (Easton et al., 2000). This represents a significant gap in the literature. Therefore the application of this measure with these populations is based entirely on the limited efficacy demonstrated in the addiction field.

However, in the context of exploring substance use in offending and forensic mental health populations, the SOCRATES could be seen to have a clear advantage over other stage of change measures, such as the University of Rhode Island Change Assessment scale (URICA) as it specifically focuses on drug and alcohol use, rather than assessing a 'problem' and a 'change' in a broader context.

Conclusion

In many respects an assessment of readiness to change as opposed to judging clients motivation to change is a more positive approach to managing drug and alcohol misuse with forensic clients. This is because it relates well to a recovery approach and represents the potential to transfer learning from one evidence base (the addictions field) to our understanding of need in forensic mental health.

However, as readiness to change comprises both attitudinal as well as behavioural features the SOCRATES should perhaps be used with caution and is potentially better directed to assessing the recognition of alcohol or substance use difficulties, than as an overall readiness to change. Further caution should be exercised as it is noted that the robustness of the factor

structure of the SOCRATES may be dependent upon the population where it is applied and the therapeutic setting in which the tool is administered (Bertholet, 2009). It is of note that without fully exploring the factor structure of the SOCRATES it would be possible to continue to use the tool with clients, labouring under the assumption that all three factors within the model were equally valid and reliable. Whereas, perhaps the most ethical application of the tool would be in the use of the 'recognition' scale only, as of the three this appears to be the most structurally sound and most applicable to a novel population, such as a forensic mental health setting.

Further validation of this tool for different clinical areas, such as offending and forensic mental health populations and across cultures would be highly beneficial. It can be particularly challenging to use this measure in a forensic mental health setting as the *recognition* of a problem may be driven by the clinical team, rather than being located in the individual. Similarly the concept of *taking steps* to enact change is bound up with a sense of locus of control. In a forensic setting there are obvious issues of control and imbalances of power (Mann, Matias & Allen, 2014).This may mean the system rather than the individual is the driver of the change, muddying the identification of whom takes the step to change.

With regard to future allocation of resources and finding a fit between offenders and treatment programmes, a reliable assessment of readiness to change is vital. It will also assist clinicians in further understanding the change process and strategies for boosting readiness to change. Ultimately the effective application of the SOCRATES as a way of exploring readiness to change could improve the effectiveness of offender rehabilitation (Burrowes & Needs, 2009) and encourage clinicians to focus on a question of what works, where and for whom (McGuire, 1995). In this respect perhaps a forensic specific version of the SOCRATES could incorporate consideration of the context, potentially distinguishing between internally motivated actions and externally imposed conditions on the 'taking steps scale', as well as accounting for the processes involved in readiness to change.

Chapter 4

A Study Exploring the role of Trauma in Drug and Alcohol using, Mentally Disordered Male Offenders.

Abstract

The literature tells us that a history of chronic trauma is common in the offender population and that the majority of adult offenders in psychiatric care settings have significant trauma histories. Trauma in this respect does not relate solely to a formal diagnosis of PTSD but is used to describe a highly subjective process that reflects a history of exposure to stressful life events and the cumulative impact of a range of multiple traumatic experiences including; violations to the person such as physical and sexual abuse, threat, victimisation, disrupted attachments and exposure to violence as a witness, victim or perpetrator. The use of illicit drugs and alcohol by mentally disordered offenders adds a further layer of complexity to understanding the role of trauma in this population.

The aims of the study were to identify rates of trauma prevalence in the study population; a sample of 82 male mentally disordered offenders, with histories of problematic drug or alcohol use, detained in conditions of medium and low security and to illustrate which types of trauma were most commonly experienced. Following this the aim of the study was to test whether there was a significant relationship between the number of traumatic events experienced over the life course, i.e. the frequency of trauma experienced and an individual's recognition of problematic substance use, their motivation to address current substance use and their confidence in their ability to address current substance use. Finally the study sought to identify whether particular types of traumatic experience had a greater impact on the participants recognition, motivation and confidence in managing substance use.

Analysis of the data found that exposure to multiple different types of traumatic events was common amongst study participants, with 46% reporting exposure to 4 – 6 different traumatic

events their lifetime, a higher rate than might be expected in a general population sample. In terms of specific experiences; physical abuse in childhood, being threatened with a weapon, being present during the death, physical or sexual assault of another person and the death of an immediate family member, partner or very close friend through an accident, suicide or homicide were especially prevalent in the sample.

There was a significant positive correlation between the number of traumatic events participants experienced over their lifetime and recognition of a drug use problem, suggesting that participants who had experienced more 'traumas' or stressful life events as defined by the SLESQ (Stressful Life Events Screening Questionnaire), showed a greater recognition of problematic drug use than participants who reported experiencing fewer lifetime traumas. Bereavement appeared to be the strongest factor influencing recognition of problematic drug use. There was no equivalent finding in relation to alcohol use. Analysis of the data also revealed that whilst there was no relationship between trauma and external motivation, individuals' with a greater number of lifetime traumas had lower levels of internal motivation to address their problematic substance misuse and lower levels of confidence in their ability to change problematic behaviours.

Within the sample, participants who had survived a life threatening accident were slightly more likely than those endorsing exposure to other types of traumatic experience to have confidence in their ability to address their substance use. In contrast, participants who had been forced into sexual intercourse or otherwise experienced a frightening situation, in which they felt helpless, were far more likely to lack confidence in being able to address their substance use and less internally motivated to do so. Again there were no equivalent findings in relation to alcohol use.

The implications of these findings for future research and practice are discussed.

Introduction

The research and clinical evidence base relevant to working with individuals who have experienced trauma is constantly evolving. A history of chronic trauma is thought to be common in the offender population and the majority of adult offenders in psychiatric care are known to have significant trauma histories, typically having experienced severe traumatic events at some stage in their lives (Timmerman & Emmelkamp, 2001). Trauma for the purposes of this study includes the formal diagnosis PTSD and other disorders of traumatic stress. It includes consideration of a range of sources of traumatic stressors, leading to a history of stressful life events, such as; physical or sexual abuse, violence, witnessing serious harm coming to another, situations in which fear and helplessness are experienced and attachment difficulties or abandonment by caregivers.

Solomon and Heide (1999) have described these features of multiple traumatic experiences as *Type III Trauma*, or complex Trauma, when an individual experiences multiple, pervasive, violent events, which characteristically begin at a young age and continue over the life course. The literature demonstrates the presence of complex trauma symptoms in samples of adult survivors of sexual abuse (Mclean & Gallup, 2003), male offenders (Spitzer, Chevalier, Gillner, Freyberger, & Barnow, 2006), refugees (de Jong, Komproe, Spinazzola, van der Kolk, & van Ommeren, 2005), and those exposed to interpersonal violence (Ford, Stockton, Kaltman, & Green, 2000). This way of conceptualising trauma, as a broad spectrum of adverse events fits well with an exploration of the needs of male offenders, who are unique from other populations which are typically subjected to examination in the literature; such as war veterans or female victims of sexual assault and prevents narrowing of the research focus by not concentrating solely on one type of event exposure.

Specific to the mentally disordered offender population, traumatic experiences can also relate to being diagnosed with a psychotic illness. Kilcommons and Morrison (2005, p352) find support for the idea that psychosis can be ‘trauma-induced’, as psychological defences are thought to break down in response to extreme stressors. In this context trauma may also relate to the experience of mental illness, such as aspects of hyper-vigilance and paranoid ideation

and in the case of mentally disordered offenders, arise from the experience of detention in a secure hospital setting. Conversely there also appears to be value in considering whether the psychotic breakdown (whether substance misuse induced or otherwise) itself to be a traumatic event in its own right. Key to understanding how this process may come about is the concept of 'threat' within trauma and the notion of threat is a significant component in determining whether the illness experience might be described as traumatising. However this process is by no means clear cut, as Morrison, Frame and Larkin (2003, p33) remind us, the crucial element here is "that 'threat' can be a subjectively as well as objectively experienced", therefore in the case of an episode of paranoid psychosis for example, the content of the psychotic experience can be such that the individual truly believes their life to be in peril as part of a targeted conspiracy and is consequently traumatised. They may later re-experience memories of the psychotic episode and continue to display aspects of hyper-arousal even when the primary diagnosis has been controlled though medication.

Within a psychiatric context trauma can also relate to features of the secure hospital environment, such as the experience of being detained against the individual's wishes, medicated, and secluded and the use of control and restraint techniques evoking past traumas and trauma symptoms related to commission of the index offence (Kruppa et al., 1995 & Gray, 2003). Even if it is accepted that traumatisation might be a common occurrence in a forensic mental health setting, how that trauma might manifest on a forensic ward is by no means clear. This is in part because trauma can also be seen to be simultaneously a source of hyper-arousal and emotional constriction, resulting in a disorder of control, being out of control and trying to be in control (Carruth & Burke, 2008). This suggests a disorganised, chaotic presentation as the individual fights against a system intended to support them and may turn to alternative methods to help them cope with distress.

There is also emerging research regarding the relationship between offence types (particularly violent offences) and the presence of trauma symptoms (Collins & Bailey, 1990) and recognition of offence related trauma (Payne et al., 2008; Pollock, 1999). The literature supports the necessity of examining lifetime exposure to a range of traumatic events and reinforces the idea that experiencing exposure to multiple traumatic events, which have a cumulative and lasting effect, is a common feature of the majority of offenders' lives,

(Thoresen & Overlien, 2009). As an example of this a study by Garieballa et al., (2006) found that 55% of their small forensic patient sample (n=30) met the criteria for lifetime PTSD and that forensic patients experienced multiple traumatic events, beginning in early development. Despite little evidence for the assertion, they also suggested that these traumatic experiences and violent offending in later life might be connected in a vicious circle.

Despite this growing evidence base, there is a startling lack of research into the impact of trauma on offenders, irrespective of when over the life course the traumatic experiences occur and this is especially true for male, mentally disordered offenders. This lack of recognition of trauma as a significant issue also means that it is not an area typically targeted for treatment and trauma-informed services and normally the reserve of female clients. There is recognition that a high proportion of offenders come from disadvantaged backgrounds, which may include being placed in care, excluded from school, experiencing poor parenting, however it can be unhelpful to conflate these disadvantages with the experience of multiple traumas and the unique contribution of these experiences. As this potential for a trauma history is not generally recognised by services and made subject to treatment, it is likely that offenders and particularly those grappling with co-morbid mental disorder, may seek alternative coping strategies, of which drug and alcohol use is a prime example.

The addictions literature is peppered with depictions of commonalities in substance use disorder and trauma development pathways, including but not limited to dysregulation of the stress response as a consequence of early traumatisation contributing to later drug and alcohol misuse and theories of using alcohol and illicit substances to ‘self-medicate’ (Fisher, Gunnar, Chamberlain & Reid, 2000; Dass-Brailsford & Myrick, 2010) or suggesting that trauma precedes the substance use with individuals using drugs or alcohol to ‘self-medicate’ and reduce trauma–related distress (Chilcoat & Breslau, 1998). It has long been accepted that substances can have a powerful impact as they may be used to elevate or calm mood, stimulate feelings or suppress painful and intrusive trauma related memories. In clinical samples and depending on the definition of trauma applied, up to 60% of individuals who sought treatment for a substance use disorder, also met the criteria for PTSD (Brady, Dansky, Foa & Carroll, 2001), suggesting the relationship between the two conditions is strong.

Indeed there appears to be a well-established link between substance use and trauma, with population based surveys suggesting substance users are at a significantly increased risk of lifetime exposure to traumatic events than non-substance users (Kilpatrick et al., 2000). As Carruth and Burke (2006, p3) state "while psychological trauma is characterized by disruptions in a person's sense of control, addiction can also be viewed as a disorder of control, or more accurately, an inability to control." Trauma survivors may use substances to self-medicate, using stimulants to maintain alertness, other psychoactive substances to block intrusive thoughts and traumatic memories and using substances to mediate social isolation and reconnect with others (Dass-Brailsford & Myrick, 2010). This brief review of the evidence base would suggest that the offender population and particularly those with psychiatric co-morbidity and substance use disorders, detained in secure settings represent a group of individuals with the potential for high trauma exposure and complex needs. Yet to date the literature has given little consideration to prevalence, nature and impact of these experiences.

Self-medication also plays a role in the management of psychosis, which as alluded to earlier can in itself be described as a trauma inducing experience. Childhood trauma is also seen to be a significant risk factor for the development of psychosis (Barrigón et al., 2015) and there is a tendency for there to be high levels of trauma histories in psychotic samples (Morrison, Frame & Larkin, 2003). Similarly, sexual trauma is seen as particularly significant in this process as, demonstrated in the Bechdolf et al., (2010) study which used this type of abuse history to predict the onset of psychotic disorders in a 'high-risk' population. As with substance use the direction of the relationship between trauma and psychosis is unclear. Some authors suggest experiencing trauma increases the risk of developing psychosis by creating a biological vulnerability, as adverse life events shape neurodevelopmental abnormalities that underlie the sensitivity to stressors and further the development of psychotic symptoms (Read et al., 2001; Bentall et al., 2001; Garety et al., 2001). Furthermore, it has been suggested that the experience of trauma might create a psychological vulnerability to the development of serious mental illness.

Other theories proposed to explain the relationship between trauma and substance abuse include the idea that individuals who abuse drugs are more likely to engage in other risky

behaviours that increase their vulnerability to experiencing potentially traumatic events (Cottler et al., 1992). From a clinical perspective it is easy to relate to the idea that substance using offenders are likely to find themselves in high risk situations, and that in turn these situations increase the risk of trauma exposure. Kilpatrick, Acierno, Resnick, Saunder and Best (1997) echo this in proposing a bidirectional relationship whereby substance use is associated with an increased risk of victimisation and a history of victimisation leads to an escalation in substance use.

Given the complex pathways between; trauma and psychosis, trauma and substance use and trauma in offenders it reasonably follows that mentally a disordered offender with a history of problematic substance use and exposure to traumatic stressors may struggle to identify that they are employing maladaptive coping strategies, recognise their difficulties and achieve or maintain sobriety. Engaging in high levels of avoidant coping, for example by using substances is thought to be a consistent predictor of post-trauma distress (Littleton, Axsom & Grills-Taquechel, 2011) and may in part explain this process. In turn this may impact significantly on their progress through secure hospital settings and future risk of recidivism. The lack of specific research exploring the role of trauma in substance using male offenders represents a significant gap in the literature and the study seeks to in part remedy this by exploring the prevalence of exposure to traumatic stressors in this population and the impact in relation to substance misuse behaviours**.** Developing an understanding of the relationships between trauma exposure and substance use in male mentally disordered offenders, detained in forensic mental settings may beneficial in terms of improving understanding of treatment needs, thereby reducing recidivism and improving clinical outcomes for this population.

Aims and Objectives of the Current Study

This study aims to address the paucity of specific literature about the nature of trauma in male mentally disordered offenders, by exploring the prevalence and nature (types) of trauma experienced by the sample of mentally disordered male offenders detained in a forensic mental health setting. This will be done through the application of the Stressful Life Events Screening Questionnaire (SLESQ) (Goodman, Corcoran, Turner, Yuan, & Green, 1998).

Particular consideration of the impact of past traumatic experiences, including frequency and type, on the recognition of drug and alcohol use difficulties and current motivation and confidence in addressing problematic substance use is given.

Measures

Assessing traumatic event exposure across the lifespan poses many challenges and the development of a myriad of assessment tools and measures reflects changes in the trauma research field. Over time assessments have been developed specifically to examine PTSD, to focus on traumatic experiences within particular populations, to offer general screening or as stand-alone measures for the exploration of discrete traumatic events (Goodman, Corcoran, Turner & Green, 1998). Recent developments in the field have demonstrated that it is more common to experience multiple rather than single traumatic events, that the impact of these is likely to be cumulative (Follette, Polusny, Bechtle & Naugle, 1996) and studies that focus on individual types of victimisation fail to obtain complete victimisation profiles (Finkelhor, Ormrod, & Turner, 2007). Hence in designing this study a decision to use a measure of lifetime exposure to screen for exposure to a range of potentially traumatic events was made; namely the Stressful Life Events Screening Questionnaire (SLESQ; Goodman et al., 1998).

The assessments relating to substance use included in this study were the Stages of Change Readiness and Treatment Eagerness (SOCRATES) by Miller and Tonigan, (1996) and the Treatment Motivation Questionnaire (TMQ) by Ryan, Plant and O'Malley (1995).

Stressful Life Events Screening Questionnaire (SLESQ; Goodman et al. 1998)

This is a 13-item questionnaire that consists of behaviourally formulated items, with a strong focus on interpersonal trauma (Appendix J). It has been researched for its psychometric properties (Norris & Hamblen, 2004) demonstrating that individual-item kappas for test-retest reliability of the questionnaire administered two weeks apart ranged from .31 to 1.00 and a median kappa of .73 and cross-cultural validity (Green, Chung, Daroowalla, Kaltman, & DeBenedictis, 2006) when applied to African American women recruited from multiple sites, including primary care and social service settings in Maryland and the

District of Columbia. In comparison to other trauma screening instruments, the SLESQ places less emphasis than many other screening measures on trauma following natural disasters, and excludes combat experiences such as being a prisoner of war or torture as a political prisoner, concentrating more on interpersonal trauma and is designed to show sensitivity to Criterion A events typically associated with PTSD, whilst minimising the reporting of sub-threshold events. Goodman et al. (1998) describe the SLESQ as an efficient screening measure with excellent specificity, test-retest reliability and good concurrent and convergent validity with the SLESQ showing an overall correlation of.89 between the number of events reported at time 1versus time 2 screening. Goodman et al. (1998) also found that the SLESQ demonstrated good convergent reliability, with a correlation of .77.

The Stage of Change and Treatment Eagerness Scale (SOCRATES) Version 8

The SOCRATES (Miller et al., 1996) is a 19 item, self-report questionnaire designed to assess readiness to change substance using behaviour (Appendices H & I). Respondents are required to rate their agreement with a series of statements such as “my drinking has caused a lot of harm” and “sometimes I wonder if I am in control of my drug use”, using a five point Likert scale ranging from 1 ‘strongly disagree’ to 5 ‘strongly agree’. The measure comprises three relatively orthogonal sub-scales, Recognition (SOC-R), Ambivalence (SOC-A) and Taking Steps (SOC-T). The sub-scales have moderate to high levels of internal reliability (Cronbachs α = 0.85, 0.6 and 0.83 respectively) and excellent test-retest reliability (r = 0.83, 0.99 and 0.93 respectively) (Miller and Tonigan, 1996). The measure has been validated in patients with a dual diagnosis (substance use disorder and mental illness) using a sample of 1600 outpatients to establish factor structure, identifying three subscales of Recognition, Taking Steps, and Ambivalence. The scales showed moderate reliability (alpha coefficients ranging from .60 to .85) (Carey, Maisto, Carey and Purnine, 2001). Using a smaller outpatient sample of eighty-two participants, Miller and Tonigan (1996) reported high internal consistencies (alphas = .87 to .96), and good temporal stability (two-day intraclass correlations ranging from .82 to .94). For the purposes of this study it was administered in its two formats, one for alcohol use and the other for drug use.

To date there have been no studies exploring the use of the SOCRATES with offender or forensic mental health populations and only a small scale study which applies it an exploration of substance use and domestic violence (Easton et al., 2000). Despite this and drawing and literature from the addictions field it was still considered to be a robust measure and suitable for inclusion. Also given that it was part of the standard assessment package at the site where the study was administered, for all those with a history of problematic drug or alcohol use, its inclusion avoided subjecting participants to increased stress in asking them to complete multiple additional assessments, simply for research purposes. The psychometric properties of the tool and a full critique of this measure are presented in the previous chapter.

The Treatment Motivation Questionnaire (TMQ)

The TMQ (Ryan, Plant & O'Malley, 1995) is a 24 item, self-report questionnaire (see Appendix G) in which respondents rate their agreement with a series of statements such as, "I came for treatment at the clinic because: It is important to me personally to solve my problems", using a seven point Likert scale ranging from, 1 'not at all true' to 7 'very true'. The measure is designed to assess four factors; internal motivation, external motivation, confidence and help seeking. No overall score is calculated for the TMQ; instead scores are calculated for each of the subscales with four items pertaining to external motivation, eleven items relating to internal motivation, six items relating to help seeking and the final five items relating to confidence.

In terms of the relationship between the factors Ryan et al. (1995, p289) explain "In line with the a priori meaning of the TMQ factors, internalized motivation is significantly negatively related to external motivation and positively related to interpersonal help seeking and confidence in treatment. External motivation is negatively related to help seeking and confidence. TMQ help seeking is positively related to confidence in treatment". It is of note that although the assessment tool was originally normed on a community alcohol use sample, it has since been widely used for both in-patient and community samples and applied to drug as well as alcohol use. Research on the TMQ by Ryan et al. (1995) provides limited evidence

of the reliability and validity of the measure. Assessment of internal reliability found Cronbach's alphas ranging from .70 to .98.

In using the TMQ as a measure of motivation it is possible to differentiate between internal and external motivation. This is crucial in a forensic setting as treatment is typically mandated and so failure to distinguish between internal and external motivation could artificially inflate findings. Also as DiClemente, Bellino and Neavins, (1999, p88) explain in taking the implications of this study forward, internal motivation appears to be more effective for long term success; whereas external motivation seems to promote short-term abstinence from alcohol and other drugs. Separating internal and external motivational makes a clear distinction between treatment choices made by the individual and those selected by and 'enforced' upon them by a treating team.

Disclosures

It has been noted that one important cause of measurement error in the area of trauma research may be the underreporting of abuse, (Hardt and Rutter 2004), with an individual's willingness to make disclosures about sexual assaults and abuse in particular, depending heavily on the way in which questions are phrased. In contrast to this reticence it seems that questions relating to violence are relatively well tolerated and adverse reactions to general questions about victimisation are less common than might first be imagined (Newman & Kaloupek, 2004). This is not to minimise the sensitive nature of the study area and it was important to be mindful of the impact of the assessment on participants and to ensure that they had adequate ward based support from their Multi-Disciplinary Team post assessment and that they were fully debriefed on completion of the study.

The potential for the researcher to experience vicarious trauma in administering the SLESQ and hearing about the traumatic experiences of study participants was also noted. Vicarious trauma has been described as resulting from cumulative and empathic engagement with another's traumatic experiences (Pearlman & Saakvitne, 1995). A way of guarding against

this is through the use of professional supervision and reflective practice, to monitor one's conduct and trauma responses (Pearlman & Caringi, 2009) and the researcher was fortunate enough to have access to weekly clinical supervision to support this.

These following hypotheses will be explored;

Hypothesis 1: There will be a significant relationship between the number of traumatic events experienced over the life course as indicated by the SLESQ and an individual's recognition of problematic substance use (including drugs and alcohol) as indicated by the Recognition scale of the SOCRATES 8A and 8D. No assumption is made about the direction of this relationship.

Hypothesis 2: There will be a significant relationship between the number of traumatic events experienced over the life course as indicated by the SLESQ and an individual's motivation to address current substance use as indicated by the TMQ. An assumption is made that those who experience more traumatic events over the life course will lack motivation to address substance use.

Hypothesis 3: There will be a significant relationship between the number of traumatic events experienced over the life course and an individual's confidence in their ability to address current substance use. An assumption is made that those who experience more traumatic events over the life course will lack confidence in their ability to address substance use.

Hypothesis 4: Of all the stressful life events accounted for in the Stressful Life Events Screening Questionnaire (SLESQ), Violence, including; witnessing violence, being the victim of violence and perpetrating violence will be the type of stressful life event that will have the most significant impact on an individual's motivation to address current substance use

Planned Analysis

Statistical Analysis

All data analyses were performed using the Statistical Package for Social Sciences (SPSS, version 20). In order to test the study's hypotheses, bivariate relationships were investigated using Pearson correlation coefficients and binary logistic regression analyses were conducted in order to more fully explore the role of specific traumatic experiences on the present degree of motivation and confidence shown by male mentally disordered offenders, detained in a forensic mental health setting, to address their substance use difficulties.

Specifically the following correlations were planned between;

Frequency of traumatic events (items on the SLESQ) and Recognition subscale of the SOCRATES (both alcohol and drug versions)

Specific traumatic events (items on the SLESQ) and Recognition subscale of the SOCRATES (both alcohol and drug versions)

Frequency of traumatic events (items on the SLESQ) and the Internal Motivation subscale of the TMQ.

Frequency of traumatic events (items on the SLESQ) and the External Motivation subscale of the TMQ.

Frequency of traumatic events (items on the SLESQ) and the Confidence subscale of the TMQ.

A logistic regression was planned between specific traumatic events (items on the SLESQ) and the Confidence subscale of the TMQ.

Finally a correlation between items pertaining to violence on the SLESQ and the Internal Motivation subscale of the TMQ was planned.

The explanatory variables were taken from the items in the SLESQ and included the following; experiencing a life threatening illness or accident, physical abuse as a child or adult, sexual abuse, emotional abuse, the sudden death of a significant other, being robbed,

threatened with a weapon such as a knife or gun, witnessing significant harm coming to another person, living in a war zone and an unspecified situation in which the individual felt extreme fear and helplessness.

Method

Ethics

Ethical approval was granted by the London Stanmore REC, and the North Central London Research Consortium (NoCLoR) (Appendix K) which ensures research is conducted in accordance with the research governance framework for health and social care to which the Trust where the study was conducted, subscribes.

After receiving information about the study all participants signed a consent form (Appendix F), agreeing to take part in the study. The consent form and participant information sheet (Appendix E), were developed in consultation with the resident Speech and Language Therapist at the study site to ensure 'plain English' principles were adhered to and the material would be accessible to potential participants. It was made clear to participants that responses to questionnaires would remain confidential unless disclosures were made concerning a risk to self or others, in which case ward staff would be informed and information recorded in clinical notes. Data storage and retention arrangements were also made clear. It was important to be as transparent as possible in the process, of publicising and recruiting to the study, for as Draucker (1999) notes participation in psychological research may be affected by the power differentials in the researcher-participant relationship and this is considered to be especially true when it is a treatment provider who is soliciting participation. It is necessary to show particular sensitivity to this in forensic settings that have an inherent power imbalance to avoid coercion and undue influence being exerted in soliciting participation.

In the past concerns have been raised that individuals who have had traumatic experiences will be less able to decline research participation and will be upset by participation in research that requires recall of past traumas and stressful life events. On the contrary, Griffin,

Resick, Waldrop and Mechanic (2003, p222) refute this by stating that existing empirical data indicates research participation does not overwhelm or re-traumatize individuals as just 5% of their sample of 170 assault survivors stated they did not think they would be willing to participate in a similar trauma assessment in the future. 98% of their domestic violence sample of 260 participants sated they would be willing to participate in a trauma assessment again in the future and indicated a high level of interest and a low level of distress.

Design

The research follows a correlational study design as data is collected without making any changes to the interventions or treatment offered to the participants. This approach was selected for its strength in providing information about the population under study and in exploring correlations. The study involved a one-off interaction with participants and was therefore a cross-sectional in nature.

Recruitment

All participants were recruited through convenience sampling from five medium secure and four low secure, male wards at an NHS secure hospital in [redacted] The Responsible Clinician (RC) for each ward with potential participants was approached for permission to recruit participants from their ward and suitable participants were identified on the basis of the study inclusion and exclusion criteria. Included in the study were males only over the age of 18 years, without a learning disability, with a mental disorder, referred for drug and alcohol work. Female patients and those diagnosed with a learning disability were excluded.

Allowing for admissions and discharges over the study period and fluctuation in the mental state of potential participants, the researcher had a pool of 132 inpatients to recruit the sample from. The researcher met with suitable participants on an individual basis to outline the

purpose of the study in detail, explain the measures that would be used and to answer any questions they might have. If the patient approached agreed to take part in the study they were given an information sheet (Appendix E) to read at their leisure and an appointment to complete the assessments (for details of the assessments see Appendices G-J) was scheduled for the following week**,** allowing potential participants time to digest the information and if needed discuss the study with their treating team.

It was made explicit that participation in the study was entirely voluntary and not a necessary condition for attending the service Drug and Alcohol treatment group. It was also made clear to potential participants that should they decline to take part in the study it would in no way have a detrimental impact upon their treatment plan and progress through conditions of medium or low security. Potential participants were also reassured that the information they provided would be fully anonymised when entered into a data set for later analysis.

The only exception to anonymity during the assessment process applied to any disclosures made that that the possibility to compromise the safety or security of the individual or the wider unit. It was explained that should a disclosure of this nature be made then the researcher would be duty bound to feedback to the patient's clinical team.

The questionnaires were allocated a number should participants have wished to identify and withdraw their data. Participants were informed that they could withdraw their participation from the research up to one month before submission of the project, without incurring any negative consequences, although no one chose to have their data removed. Participants were made aware of the sensitive nature of some of the questionnaires and directed to sources of support should they find the process upsetting. Finally it was emphasised that with the exception of the SLESQ, completion of the assessments intended for use in this study were part of treatment as usual and would be administered as part of their standard treatment package.

Sample size

An a priori power analysis was conducted to consider how many participants would be required in order to achieve adequate statistical power. Power analysis for a logistic regression was conducted using the guidelines established in Lipsey and Wilson, (2001) and G*Power 3.1.7 (Faul, Erdfelder, Buchner & Lang, 2013) to determine a sufficient sample size using an alpha of 0.05, and a power of 0.80, with a large effect size (odds ratio = 2.4) and two-tailed test. Based on the aforementioned assumptions, the desired sample size was 75. The total sample size achieved was 82.

Procedure

Data was collected from three assessment measures, routinely given to patients referred for an in-service drug and alcohol treatment program; the (SOCRATES) (Miller et al. 1996), Drug and Alcohol versions and the Treatment Motivation Questionnaire (TMQ) (Ryan, Plant & O'Malley, 1995). The SLESQ (Goodman et al. 1998) was included as an additional measure for the purposes of this study to explore the impact of traumatic events. Tests were conducted on the participants' wards, within private interview rooms, by the principle investigator. The assessments were read out to participants for whom issues with literacy had been identified by their clinical team.

Scores from the assessment measures were anonymised and entered into a database. Basic demographic data and relevant information from each individual's history relating to diagnosis, Mental Health Act section and offence type was collected from a file review. Of the participants recruited to the study no one chose to withdraw their data, however fourteen data sets could not be used as the assessments were incomplete and participants had declined to continue with the process.

Results

Sample

A total of 82 participants took part in the study, recruited from five medium and low secure wards. Poly-substance use was common to the entire sample with 86% of sample using cannabis or synthetic cannabinoids, 73% using alcohol and 44% using cocaine or crack-cocaine, prior to incarceration. Average age for onset of misuse was 14 years 3 months and the average length of stay in the service was 2 years 8 months.

Table 7a *Participant Demographics*

	N	***Percentage of Total***
Primary Diagnosis		
Paranoid Schizophrenia	31	37.8
Schizoaffective Disorder	14	16.9
Schizophrenia (no subtype specified)	9	11.5
Other Psychotic Disorder	13	15.9
Bipolar Affective Disorder	6	6.9
Personality Disorder	9	11.0
Mental Health Act Status		
Section 37/41	44	53.7
Section 37	18	22.0
Section 47/49	4	4.9
Section 48/49	8	9.8
Section 38	4	4.7
Section 3	4	4.9
Ethnicity		
Black African, Black Caribbean or Black British	36	43.9
White	25	30.5
Asian or Asian British	9	11.0
Mixed	7	8.5
Other	5	6.1
Age - Onset of Substance Use		
Child	11	13.8
Adolescent	61	74.6
Adult	10	11.6
Age – First Traumatic Event		
Child	54	65.8
Adolescent	19	23.6
Adult	9	10.6
TOTAL	n=82	

Table 7b *Participant Demographics continued*

	n	***Percentage of Total***
Education		
No formal qualifications	23	28
GCSE / NVQ to level 2	49	60
A Level / NVQ to level 4	7	8.5
Postgraduate study	3	3.5
Marital Status		
Single	37	45
Partner	21	26
Married	15	18
Divorced	9	11
Offence Type		
Non-lethal violent offence	42	51
Lethal violent offence	12	15
Sexual offence	14	17
Acquisitive offence	8	10
Property offence	6	7
Age - Onset of Substance Use		
18-24	6	7
25-34	31	38
35-44	19	23.5
45-54	14	17
55-64	9	11
65+	3	3.5
Mean Age 31 years 2 months		
TOTAL	n=82	

Trauma Prevalence Rates

Without exception, every one of the 82 study participants endorsed past exposure to a traumatic life event. The percentage of participants endorsing 'yes' to each type of stressful life event occurring in their lifetime as outlined in the SLESQ is displayed in Table 8, along with percentages for participants reporting exposure to multiple traumatic events. It is noted that in establishing prevalence rates the measure can lack sensitivity in consistently accounting for recurrent exposure to each type of victimisation (e.g., being the victim of a robbery or mugging on more than one occasion), focusing instead on repeated physical and sexual victimisation across a number of discrete events and so based solely on data derived from the SLESQ it is not possible to make assumptions about the broader impact of cumulative traumas. However, it seems reasonable to assume that the ranges of events

outlined in the SLESQ are unlikely to have been experienced as completely separate and discrete events, for example an individual may have been given cause to fear for their life if a weapon were used against them in the commission of a sexual assault.

There may be limited value in trying to distinguish between those who have experienced an acute trauma from those who have experienced chronic trauma in an offender sample, for as McMakin, Leisen, Sattler, Krinsley and Riggs (2002) in their study of offenders state it is commonplace for male juvenile offenders to have experienced both acute and chronic trauma and as previously discussed it appears to be commonplace for offenders to have experienced multiple traumatic events. It is possible to see an illustration of this in the table below.

Table 8 *Lifetime Exposure to Traumatic Events for total sample (n=82) as defined by the SLESQ*

Type of Trauma	n (%)
Physical Assault	
In Childhood	65.9
In Adulthood	29.3
Weapon (Used or threat made)	51.2
Physical force used in robbery or mugging	26.8
Sexual Victimisation	
Sexual Assault	8.5
*Forced Intercourse	26.8
Repeated denigrated by parent/partner/family	29.3
Life threatening illness	3.7
Life threatening accident	18.3
Death of immediate family / partner / close friend through accident, suicide homicide	47.6
Situation with serious danger (combat/war zone)	20.7
Frightening situation in which individual felt helpless	22.0
Present when another person killed, physically or sexually assaulted	37.8
Stressful Life Events	
Exposure to 1-3 Traumatic Events	46.3
Exposure to 4-6 Traumatic Events	45.1
Exposure to 7+ Traumatic Events	8.6

*The term forced intercourse is not defined by the measure and so with this population was taken to include instances of anal rape.

Of note the table illustrates high levels of abuse in childhood, as experienced by nearly two thirds of the sample, relatively commonplace exposure to being threatened with a weapon (51.2%) and a high percentage of the sample (53.7%) experiencing four or more traumatic events over their lifetime. This echoes previous research stating that there are substantially higher rates of trauma in male inmates than would be expected among men in a general population sample (Gibson, Holt, Fondacaro, Tang, Powell & Turbitt, 1999). The prevalence rates presented here are similar to those found in a study of thirty-four predominantly male, secure forensic mental health inpatients, by Calvert, Larkin and Jellicoe-Jones (2008), who found that all participants in their sample experienced at least one traumatic event in their lifetime with the mean number of traumas experienced recorded as four. Likewise in their study of thirty-one German and Sudanese, male forensic patients, Garieballa, Schauer, Neuner et al. (2006) found that subjects experienced an average of five traumatic events over their lifetime with the first occurring in early childhood.

In comparing the results presented in Table 8 to figures from the National Comorbidity study conducted in the USA it is possible to see variation in the types of trauma most commonly experienced, Kessler (2000) found that witnessing someone being badly injured or killed was the most commonly experienced trauma, endorsed by 36% of men and 15% of women in the sample. This was followed by trauma resulting from a natural disaster (e.g. fire, flood) and was endorsed by 19% of men and 15% of women, with the third most common traumatic experience being involved in a life-threatening accident or assault, which was endorsed by 25% of men and 14% of women.

Whilst these trauma prevalence rates may seem high they potentially represent just the tip of the iceberg. If the sample had been drawn from a more selected group of participants, such as offenders with an established trauma diagnosis who were engaged in combined PTSD and substance use disorder treatment, it is likely that the number of different types of trauma experienced across the lifespan could have increased. As participants in the Barrett, Mills and

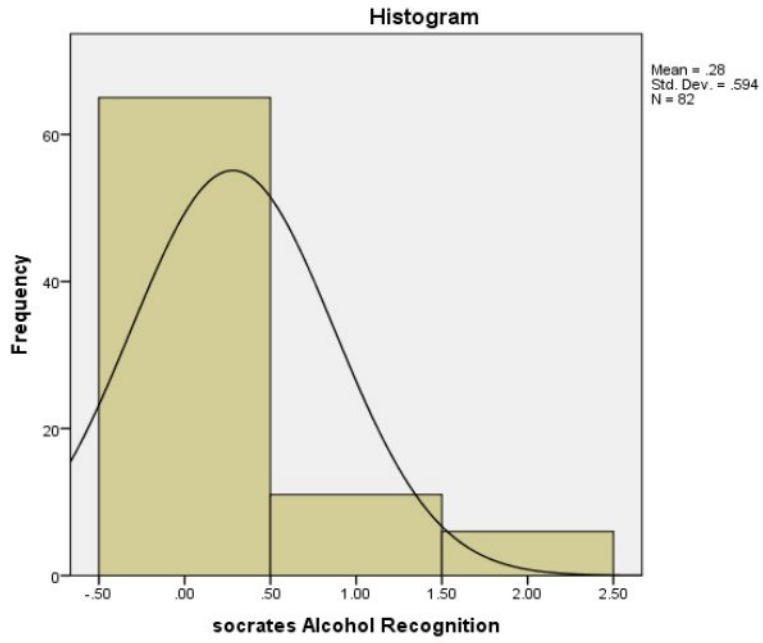
Teesson (2011) study, who were recruited from a PTSD/Substance use disorder service experienced an average of 6.0 (*SD* = 1.7) different types of trauma in their lifetime.

A number of correlations were performed to explore relationships between descriptions of the traumatic events outlined by the SLESQ and the participants' recognition of problematic drug and alcohol use (identified with the use of the SOCRATES), and their internal and external motivation and confidence (identified with the use of the TMQ) in addressing these issues. A logistic regression was also performed to assess which of the stressful life events had the most impact on participants' motivation and confidence in addressing substance use.

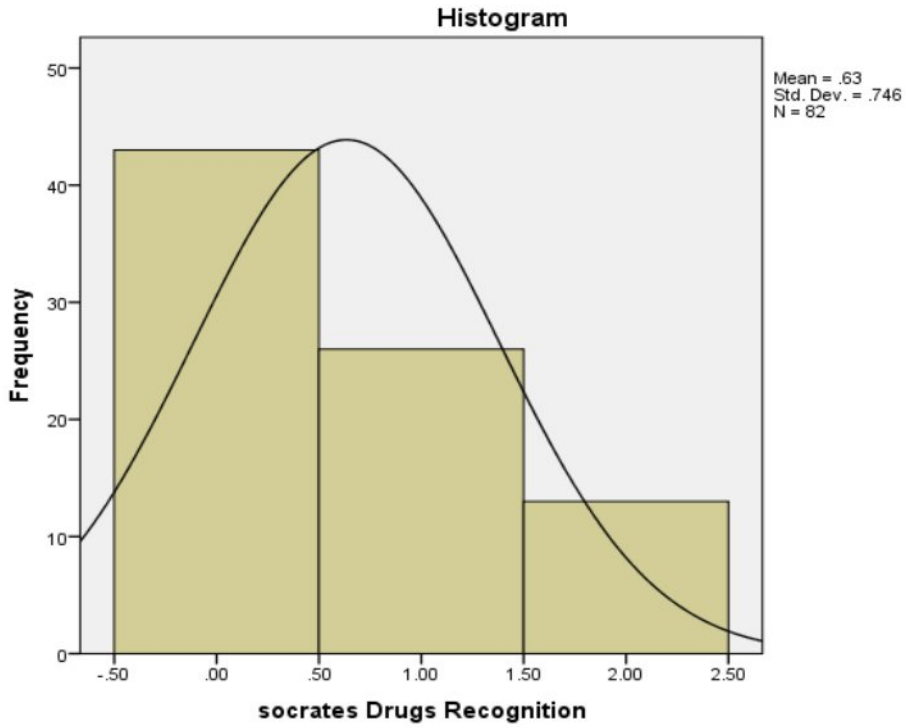
It is course of noted that whilst correlations may be efficacious in identifying relationships between variables and a necessary condition of causation, in itself correlation is not causation (Spiegelman, 2010). Therefore in presenting results derived from the aforementioned hypotheses it has been important not to overstate the significance of findings.

Summary statistics

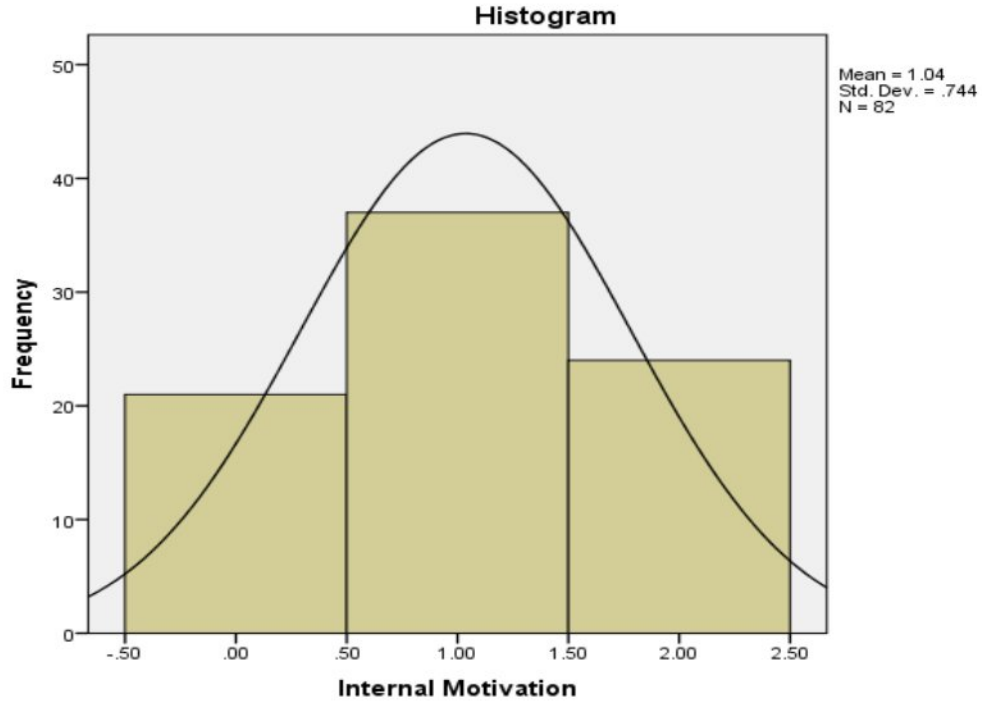
Socrates 8a



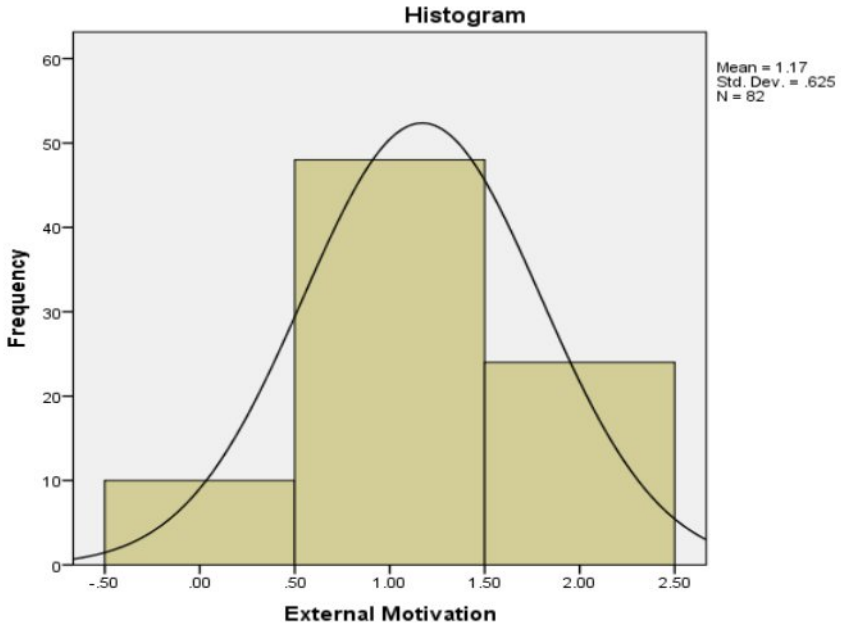
Socrates 8d



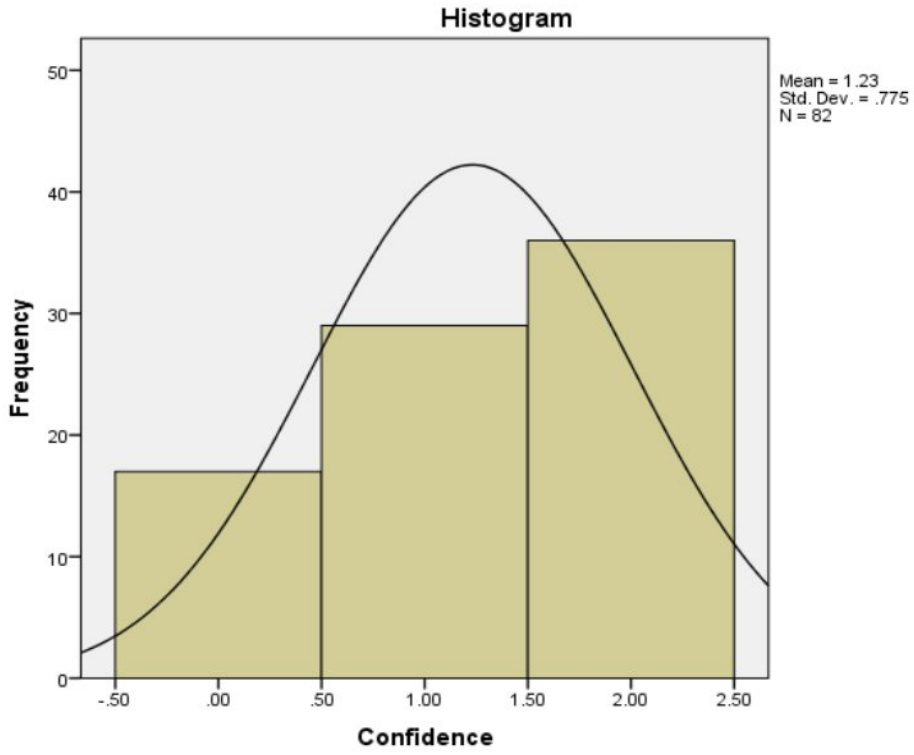
TMQ *(Internal Motivation)*



TMQ *(External Motivation)*



TMQ *(Confidence)*



Hypothesis 1

There will be a significant relationship between the number of traumatic events experienced over the life course and an individual's recognition of problematic substance use.

Table 9a shows a significant positive correlation between the number of traumatic events participants experienced over their lifetime and their recognition that they currently had a drug use problem, $r = .224$, $p<.05$. This suggests that participants who had experienced more 'traumas' or stressful life events as defined by the SLESQ, showed a greater recognition of problematic drug use than those participants who reported experiencing fewer lifetime traumas.

Table 9a also shows that the item on the SLESQ that has the single most significant positive correlation with the individual's recognition that they currently had a drug use problem was the death of an immediate family member, partner or very close friend through an accident, suicide or homicide, $r = .240$, $p<.05$. This suggests that bereavement, particularly without time to prepare for the loss of loved one or as the result of a violent action, has a significant role to play in participants recognising that their substance use is problematic.

Table 9a *Pearson's r between number and type of traumatic events experienced and recognition of problematic*

		SOCRATES Drugs Recognition	Frequency
Ever had a life threatening illness	Pearson Correlation	.184	
	Sig. (2-tailed)	.098	
	N	82	
Life threatening accident	Pearson Correlation	-.022	
	Sig. (2-tailed)	.846	
	N	82	
Physical force used in robbery/mugging	Pearson Correlation	.113	
	Sig. (2-tailed)	.311	
	N	82	
Death of immediate family/partner/very close friend through accident, suicide homicide	Pearson Correlation	.240	
	Sig. (2-tailed)	.030	
	N	82	
Forced intercourse, oral, anal sex	Pearson Correlation	.210	
	Sig. (2-tailed)	.059	
	N	82	

Sexual Assault	Pearson Correlation	.150
	Sig. (2-tailed)	.177
	N	82
Physically harmed as child by parent/caregiver	Pearson Correlation	.096
	Sig. (2-tailed)	.393
	N	82
Physically harmed as an adult	Pearson Correlation	.039
	Sig. (2-tailed)	.76
	N	82
Repeatedly denigrated by parent/partner/family	Pearson Correlation	.028
	Sig. (2-tailed)	.801
	N	82
Threatened with a weapon (e.g. knife or gun)	Pearson Correlation	.054
	Sig. (2-tailed)	.631
	N	82
Present when another person killed, physically or sexually assaulted	Pearson Correlation	-.124
	Sig. (2-tailed)	.266
	N	82

Situation with serious danger (military combat/war zone)	Pearson Correlation	.131
	Sig. (2-tailed)	.242
	N	82
Frightening situation in which you felt helpless	Pearson Correlation	.143
	Sig. (2-tailed)	.201
	N	82

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 9b *Pearson's r between number and type of traumatic events experienced and recognition of problematic alcoh*

		SOCRATES Alcohol Recognition	Frequency c
Ever had a life threatening illness	Pearson Correlation	.093	
	Sig. (2-tailed)	.408	
	N	82	
Life threatening accident	Pearson Correlation	-.065	
	Sig. (2-tailed)	.565	
	N	82	
Physical force used in robbery/mugging	Pearson Correlation	-.008	
	Sig. (2-tailed)	.943	
	N	82	
Death of immediate family/partner/very close friend through accident, suicide homicide	Pearson Correlation	.127	
	Sig. (2-tailed)	.257	
	N	82	
Forced intercourse, oral, anal sex	Pearson Correlation	.077	
	Sig. (2-tailed)	.494	
	N	82	

Sexual Assault	Pearson Correlation	.085
	Sig. (2-tailed)	.446
	N	82
Physically harmed as child by parent/caregiver	Pearson Correlation	-.006
	Sig. (2-tailed)	.955
	N	82
Physically harmed as an adult	Pearson Correlation	-.025
	Sig. (2-tailed)	.822
	N	82
Repeatedly denigrated by parent/partner/family	Pearson Correlation	.103
	Sig. (2-tailed)	.357
	N	82
Threatened with a weapon (e.g. knife or gun)	Pearson Correlation	.050
	Sig. (2-tailed)	.653
	N	82
Present when another person killed, physically or sexually assaulted	Pearson Correlation	-.157
	Sig. (2-tailed)	.158
	N	82

Situation with serious danger (military combat/war zone)	Pearson Correlation	-.090
	Sig. (2-tailed)	.421
	N	82
Frightening situation in which you felt helpless	Pearson Correlation	-.002
	Sig. (2-tailed)	.983
	N	82

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 9b shows that there was no equivalent finding when the same procedure was applied to the Recognition sub-scale of the Alcohol version of the Socrates measure. In this instance the correlation between frequency of traumatic events and recognition subscale of the SOCRATES 8A was non-significant, $r = .055$, $p>.05$, which suggests there is no relationship between the number of stressful life events experienced by participants and the recognition of problematic alcohol use.

Hypothesis 2

There will be a significant relationship between the number of traumatic events experienced over the life course and an individual's motivation to address current substance use.

Table 10 shows a significant negative correlation between the number of traumatic events (frequency) participants experienced over their lifetime and their internal motivation to address current substance misuse, $r = -.281$, $p<.05$. This suggests that an inverse relationship exists between the variables in that individuals' with a greater number of lifetime traumas also had lower levels of internal motivation to address their problematic substance misuse. In relation to external motivation the correlation was found to be non-significant, $r = .132$, $p>.05$. This suggests that the study participants' degree of external motivation to address their substance misuse was not impacted by the number of stressful life events they had experienced.

Table 10 *Pearson's r between number of events experienced and motivation (including internal and external motivation) (n=82)*

		External Motivation	Internal Motivation
Frequency of traumatic events	Pearson Correlation	.132	-.281*
	Sig. (2-tailed)	.236	.011
	N	82	82

*. Correlation is significant at the 0.05 level (2-tailed)

Hypothesis 3

There will be a significant relationship between the number of traumatic events experienced over the life course and an individual's confidence in addressing current substance use.

Table 11a shows a highly significant negative correlation between the number of traumatic events participants experienced over their lifetime and the degree of confidence participants had in their own ability to address current substance misuse, $r = -.393$, $p<.05$. This suggests an inverse relationship exists between the variables in that individuals who had experienced a greater number of lifetime traumas also had lower levels of confidence in their ability to change their substance misuse behaviours.

Table 11a *Correlation between number of traumatic events experienced and confidence in own ability address current substance misuse (including alcohol and drug use)*

Correlations

		Confidence
Frequency of traumatic events	Pearson Correlation	-.393**
	Sig. (2-tailed)	.000
	N	82

*. Correlation is significant at the 0.05 level (2-tailed)

In order to test whether the concepts of confidence and help seeking had been conflated in participants' responses to the TMQ the same procedure was applied to the items; frequency of traumatic events (number of different traumatic events experienced over lifetime) and help seeking. In this instance the correlation was non-significant, $r = -.084$, $p>.05$, which may suggests that at least within this sample there was no relationship between the variables and respondents were able to distinguish between the two concepts.

A logistic regression (Table 11b) was then performed to ascertain the effects of specific traumatic life events detailed by the SLESQ on the likelihood that study participants would have confidence in their ability to address their substance use. Initially all thirteen items on the SLESQ were entered into the analysis. On the second iteration items relating to the sudden death of a loved one, $p>.73$, witnessing harm coming to another person $p>.71$, experiencing physical assault as a child $p>.65$ and being in a war zone $p>.61$ were removed as they did not make a significant contribution. The process was repeated for the remaining nine items and following the third iteration items relating to being the victim of a robbery $p>.48$, having a weapon used against you $p>.38$ and being sexually assaulted $p>.26$ were also removed. The remaining six SLESQ items were then entered into the analysis. Over these repeated iterations, just three items were found to make a significant contribution to the model, these included; being involved in a life threatening accident, being forced to engage in sexual intercourse and being in a frightening situation, in the which the individual felt helpless. The logistic regression model was statistically significant, x^2 (4) = 22.442, $p<.0005$.

The model explained 38.2% (Nagelkerke R^2) of the variance in confidence expressed and correctly classified 86.6% of cases. When the confidence subscale of the TMQ was initially scored participants were assigned to one of three categories of; zero to low (non-significant score on the measure), medium and high confidence. For the purposes of regression modelling the *degree* of confidence expressed was not considered to be a primary concern and so these categories were collapsed into two basic options of not confident and confident (which included those who demonstrated medium and high levels of confidence).

It was interesting to note that in these analyses participants who had survived a life threatening accident were slightly more likely than those endorsing any of the other types of traumatic experience to have confidence in their ability to address substance use. For example, in sharp contrast, participants who had been forced into sexual intercourse or otherwise experienced a helpless frightening situation were 12.8 and 5.7 times respectively, more likely to lack confidence in being able to address their problematic drug and alcohol use than those who had experienced other types of stressful life events.

Table 11b *Output from logistic regression - confidence*

Classification Table[a]

Observed			Predicted		
			Confident		Percentage Correct
			Not confident	Confident	
Step 1	Confident	Not confident	6	10	37.5
		Confident	1	65	98.5
	Overall Percentage				86.6

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1[a]	ACC	-2.367	.755	9.834	1	.002	.094
	FORSEX(1)	2.555	.965	7.013	1	.008	12.872
	HELPLESS(1)	1.754	.716	5.993	1	.014	5.776
	Constant	-1.361	.957	2.022	1	.155	.256

a. Variable(s) entered on step 1: ACC, FORSEX, HELPLESS.

ACC, refers to item 2 of the SLESQ. Were you ever in a life-threatening accident?

FORSEX, refers to item 5 of the SLESQ. At any time, has anyone (parent, other family member, romantic partner, stranger or someone else) ever physically forced you to have intercourse, or to have oral or anal sex against your wishes, or when you were helpless, such as being asleep or intoxicated?

HELPLESS, refers to item 13 of the SLESQ. Have you ever been in any other situation that was extremely frightening or horrifying, or one in which you felt extremely helpless, that you haven't reported?

Hypothesis 4

Of all the stressful life events accounted for in the SLESQ, Violence, including; witnessing violence, being the victim of violence and perpetrating violence will have a significant impact on an individual's motivation to address current substance use.

Table 12a *Items on the SLESQ significantly correlated with internal motivation*

Correlations

		Internal Motivation
Ever had a life threatening illness	Pearson Correlation	.078
	Sig. (2-tailed)	.485
	N	82
Life threatening accident	Pearson Correlation	-.194
	Sig. (2-tailed)	.081
	N	82
Physical force used in robbery/mugging	Pearson Correlation	-.142
	Sig. (2-tailed)	.205
	N	82
Death of immediate family/partner/very close friend through accident, suicide homicide	Pearson Correlation	-.047
	Sig. (2-tailed)	.674
	N	82
Forced intercourse, oral, anal sex	Pearson Correlation	-.251*
	Sig. (2-tailed)	.023
	N	82
Sexual Assault	Pearson Correlation	-.328**
	Sig. (2-tailed)	.003
	N	82
Physically harmed as child by parent/caregiver	Pearson Correlation	-.173
	Sig. (2-tailed)	.120
	N	82
Physically harmed as an adult	Pearson Correlation	-.070
	Sig. (2-tailed)	.534
	N	82
Repeated denigrated by parent/partner/family	Pearson Correlation	.041
	Sig. (2-tailed)	.717
	N	82
Threatened with a weapon (e.g. knife or gun)	Pearson Correlation	-.018
	Sig. (2-tailed)	.875

	N	82
Present when another person killed, physically or sexually assaulted	Pearson Correlation	.029
	Sig. (2-tailed)	.793
	N	82
Situation with serious danger (military combat/war zone)	Pearson Correlation	-.229*
	Sig. (2-tailed)	.039
	N	82
Frightening situation in which you felt helpless	Pearson Correlation	-.305**
	Sig. (2-tailed)	.005
	N	82
	Sig. (2-tailed)	
	N	82

*. Correlation is significant at the 0.05 level (2-tailed)

**. Correlation is significant at the 0.01 level (2-tailed

Table 12a shows that there was a significant negative correlation between being forced into sexual intercourse or living in a situation which posed significant danger to life, such as war zone and participants' internal motivation to address current substance misuse, $r = -.251$, $p<.05$ and $r = -.229$, $p<.01$, respectively.

There was also a highly significant negative correlation between experiencing a sexual assault, and being in a frightening situation (nature unspecified) in which the individual felt helpless and participants' internal motivation to address current substance misuse, $r = -.328$, $p<.01$ and $r = -.305$, $p<.01$, respectively.

None of the other nine items on the SLESQ showed a significant correlation with internal motivation. It was particularly interesting to note that the items from the SLESQ relating to witnessing violence, experiencing physical assault in childhood or adulthood, being threatened with a weapon and being the victim of a robbery or mugging in which physical force was used were not found to have a significant relationship to an individual's internal motivation to address their substance use. Following this it initially appeared that the four items which related to forced sexual intercourse, living in a situation which posed significant danger to life, sexual assault and being in a frightening situation in which the individual felt

helpless had the greatest significance in helping us to understand which particular traumatic experiences had the strongest impact on an individual's internal motivation to change their substance misuse.

A logistic regression (table 12b) was performed to ascertain theses effects, exploring the impact of forced intercourse, sexual assault, living in a war zone and being in a frightening situation in which one feels helpless on the likelihood that study participants would not be internally motivated to address their substance use. In order to explore this items, five, six, twelve and thirteen from the SLESQ and the internal motivation subscale from the TMQ were used in the analysis. Through repeated iterations the items relating to forced intercourse and living in a war zone were removed as they made no significant contribution to the model. With the remaining two items the logistic regression model was found to be statistically significant, x^2 (4) = 22.113, p<.0005. The model explained 34.8% (Nagelkerke R^2) of the variance in internal motivation and correctly classified 81% of cases. In essence the findings suggest that participants who had been sexually assaulted were 8.14 times less likely to be internally motivated to address their substance use than other study participants and those who had been in a frightening and helpless situation were 7.41 times less likely to be internally motivated to address their substance use than participants who had not been exposed to these traumatic stressors.

Table 12b *Output from logistic regression - internal motivation*

Classification Table[a]

	Observed		Predicted		
			Indicates whether individual is internally motivated or not		Percentage Correct
			not motivated	Motivated	
Step 1	Indicates whether individual is internally motivated or not	not motivated	6	15	28.6
		motivated	0	61	100.0
	Overall Percentage				81.7

a. The cut value is .500

b.

Variables in the Equation

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1[a]	SEXASSAU(1)	2.097	.629	11.099	1	.001	8.141
	HELPLESS(1)	2.003	.663	9.139	1	.003	7.413
	Constant	-1.728	.721	5.740	1	.017	.178

a. Variable(s) entered on step 1: SEXASSAU, HELPLESS.

SEXASSAU(1), refers to item 6 of the SLESQ. Other than experiences mentioned in earlier questions, has anyone ever touched private parts of your body, made you touch their body, or tried to make you to have sex against your wishes?

HELPLESS(1), refers to item 13 of the SLESQ. Have you ever been in any other situation that was extremely frightening or horrifying, or one in which you felt extremely helpless, that you haven't reported?

Discussion

Trauma Prevalence

Without exception every one of the 82 patients included in the study reported exposure to at least one traumatic event over the course of their lifetime. Given the breadth of items included in the SLESQ this is perhaps not surprising and a similar result would potentially be found in any adult sample. The Goodman, Corcoran, Turner, Yuan and Green (1998) study assessing traumatic event exposure using the SLESQ found that in a sample of 140 male and female college students, 72% had experienced at least one traumatic event, with the mean number of events reported as 1.83. What is far more striking in the current study is that 45% of participants reported exposure to 4-6 discrete traumatic events. This exceeds prevalence rates reported in the US National Comorbidity Study, which focusing just on men in the sample shows, 14.5% reported lifetime exposure to two traumatic events, 9.5% reported exposure to three and just 10.2% reported exposure to four or more traumatic events (Kessler, 2000). This high prevalence rate of exposure to multiple traumatic events also echoes the work of Garieballa et al. (2006) and is in keeping with the higher rates of trauma reported by forensic mental health patients, compared to the general population or even when

compared to the wider prison population estimates (Stone, 1994; Timmerman & Emmelkamp, 2001; Spitzer, Dudeck, Liss et al., 2001). Yet given the small sample size in this study and the suggestion in the forensic literature that perpetrators of crime can overestimate their experiences of being victimised it is perhaps best to exercise caution before accepting and attempting to generalise these results.

Being physically assaulted in childhood was the most common traumatic experience highlighted in the study and endorsed by 66% of the sample. Rather than completely dismissing these findings as an artefact of over-reporting it is important to remember that in forensic literature childhood adversity is accepted as having a strong association with adult criminality (Reavis, Looman, Franco & Rojas, 2013). Likewise Messina, Grella, Burdon and Prendergast (2007) note that there is an acceptance among researchers of the likelihood that there will be a relationship between childhood abuse, chronic substance abuse and crime in female offenders but in male offenders similar traumatic histories are not routinely explored or made the focus of treatment. This 'cultural bias' in reflecting on the trauma histories of male offenders may also have accounted for any initial surprise that 27% of the sample had experienced a sexual assault, typically occurring in childhood and relates to the findings of Holmes and Slap (1998) that the sexual abuse of males is common yet underreported, under recognised and undertreated. Overall the estimate of a high percentage of childhood physical abuse (65.9%) presented in the study finds some support in the literature. A study of 478 male inpatients by Cloitre, Tardiff, Marzuk, Leon and Portera (2001) found it to be the most predominant form of abuse experienced in their sample, typically perpetrated by family members. Similarly Wren, Wingo, Moore, Pelletier et al., (2011) in their sample of 767 African Americans found that childhood abuse was not only common but associated with a greater risk of developing PTSD than traumas experienced solely in adulthood. Childhood abuse is associated with substance misuse, which may exacerbate other emotional, behavioural and interpersonal problems and is found to be particularly high among offenders (Swogger, Conner, Walsh & Maisto, 2011).

It was also relatively commonplace for participants in the sample to have been threatened with a weapon, (51.2%). For the majority of the sample that reported they had been threatened with or had a weapon used against them, this occurred during adulthood. In

examining how this traumatic event may correlate with substance use, it would have been useful to examine how recently this victimisation took place as substance abuse is considered to contribute to exposure to interpersonal violence, be a consequence of violence or both in a 'vicious cycle' (Goodman, Salyers, Mueser, Rosenberg, Swartz, Essock, Osher, Butterfield & Swanson, 2001).

The death of an immediate family member, partner or very close friend through an accident, a suicide or homicide was especially prevalent in the sample and experienced by 47.6% of the participants. This result is perhaps the least surprising as data from World Health Organization surveys across twenty countries, shows that the most commonly reported traumas are the death of a loved one, at 30.5%, Benjet, Bromet, Karam, Kessler et al. (2016) . Likewise in their sample of two hundred and thirteen inmates Gibson, Holt, Fondacaro et al. (1999, p479) found that "witnessing severe injury or death of another person was the most frequently reported antecedent trauma to PTSD" accounting for over 34% of their sample. Of note within the forensic sample used in this study and a factor that could not be accounted for by using the SLESQ measure was the possibility that some participants endorsing this item would be responsible for the sudden, violent demise of a loved one. It was also not within the measure of the SLESQ to establish how this type of trauma was managed within the sample. There is the potential for alcohol to have a role here, as Blankfield (2009) notes that pathological grief in those individuals' she describes as alcoholics is a problem of unknown magnitude, and first admission with this complication can occur several years after the event. Likewise evidence suggests a link between intense grief and worsening of substance use but the timeframe around this is unclear (Prigerson et al., 1997).

Given that 43.9% of the sample were of Black African, Black Caribbean or Black British decent, with a further 19.5% describing themselves as being of Asian, Asian British or mixed origin, it is important to consider the role of ethnicity and culture the impact that this may have had on the trauma prevalence rates noted in the study. Hoshmand (2007) stresses the importance of understanding cultural sources of strength and resilience and Marsella (2010) who reviewed ethno-cultural aspects of PTSD found that responses to traumatic stressors are shaped by an individual's culture, which includes beliefs about the individuals responsibility for the trauma occurring and the meaning given to trauma related symptoms. For example in

some cultures corporal punishment of children is considered to be acceptable and therefore not likely to have been listed as a form of physical abuse in childhood. This may have impacted on how respondents related to the events listed in the SLESQ. It was beyond the scope of this study to consider the extent to which the diverse communities represented were able to offer support to their members following traumatic experiences, however it is worth noting that as a feature of being detained in conditions or medium or low security many individuals find themselves isolated from their communities, which may impair coping.

Hypothesis 1

There will be a significant relationship between the number of traumatic events experienced over the life course and an individual's recognition of problematic substance use.

Based on the positive correlation between a higher number of traumatic events and an increased recognition of problematic drug use, it is tempting to conclude that at some level participants are aware of their use of drugs as a means of self-medicating and coping with past traumas. As previously discussed the literature does provide support for this interpretation as the self-medication hypothesis suggests substances are used to relieve distressing trauma symptoms, blocking, numbing or providing an escape. In an attempt to manage traumatic stress symptoms, individuals may "self-medicate using stimulant or other drugs to maintain arousal and alertness and psychoactive drugs to try to block the distress of intrusive thoughts and traumatic memories" (Dass-Brailsford & Myrick, p204). Recent research has also suggested that exposure to traumatic stressors can make it more difficult to manage without using substances, as exposure to reminders of the traumatic event have been shown to increase drug cravings in people with co-occurring trauma and substance abuse (Coffey, Saladin, Drobes, Brady, Dansky & Kilpatrick, 2002).

Although examination of coping was beyond the scope of this study, the individual's coping style and resilience also has an important role here. Studies have shown that particularly in youth samples, those who are already abusing substances may be less able to cope with a traumatic event as a result of the functional impairments associated with problematic use and

lack the skills needed to cope with trauma exposure (Giaconia, Reinherz, Hauf, Paradis, Wasserman, & Langhammer, 2000). This relates well to an exploration of maladaptive coping and exposure to trauma across the lifespan and may be more reflective of the level of functioning across a group of mentally disordered offenders in a forensic mental health setting.

Given the strong role identified for substance use it is perhaps surprising that no significant correlation was found between a higher prevalence of traumatic events and problematic alcohol use, as Johnson, Heffner, Blom and Anthenelli (2010) in their study of PTSD treatment seeking men and women found that those with more severe trauma favoured the use of alcohol's depressant effects to avoid re-experiencing traumas over stimulant drugs. A possible explanation for the non-significant role of alcohol in this study could relate to the measure used to assess problematic alcohol use. Although Isenhart's (1997) study showed that the Recognition score of the SOCRATES 8A predicted affiliation with Alcoholics Anonymous it still relies on the individual's self-assessment of their difficulties and as such it may have been impacted by under reporting of problematic drinking. Respondents may also have under-reported the negative consequences of their drinking as an artefact of rejecting the labels' within in the measure relating to being an alcoholic or not having control over alcohol use. The crucial element here relates to the recognition of alcohol use as *problematic*, a factor that be hampered by cultural norms in the UK that associate managing loss, in its myriad forms, with drinking, (Seaman & Ikegwuonu, 2010).

The significant role of a sudden bereavement highlighted within the analysis also lends weight to the idea that substance use is a form maladaptive coping which respondents turn to when faced with intolerable life events. The idea of 'suddenness' contributing to the experience of trauma is echoed by the work of Janoff-Bulman (1992) who have demonstrated that some negative experiences are not traumatising because they occur gradually and such change can be adapted to cognitively and emotionally. An immediate 'fix' is needed to cope with an overwhelming situation and the use of substances provides this. In contrast to a sudden, unexpected bereavement, gradual change gives an opportunity for schema adaptation and allows for coping mechanisms to be developed over time. It is also important to consider the role of psychological pain in understanding this relationship as Carlson (1997) gives the

example of it being emotionally painful to witness the death of a loved one and states that the event becomes traumatic due to the strong negative valence attached to the event. It is then understandable that alternative coping mechanisms may be sought.

Hypothesis 2

There will be a significant relationship between the number of traumatic events experienced over the life course and an individual's motivation to address current substance use.

This study demonstrated a clear relationship between trauma frequency (number of different types of traumatic event experienced over the lifespan) and motivation to address substance use as sample participants with a greater number of lifetime traumas also had lower levels of internal motivation to address their problematic substance misuse. One possible explanation for this relates back to the self-medication hypothesis and the use of illicit substances as a way of coping with stressful life events and psychological trauma. Intuitively this explanation makes sense as it is easy to see that individuals would not be motivated to give up their primary method of coping, given the limited repertoire at their disposal and pain they would otherwise be exposed to. There is evidence in the literature to suggest the choice of illicit substance used may have a trauma related function. In this study the most commonly used substances were cannabis and alcohol, acting as central nervous system depressants rather than central nervous system stimulants and this substance selection may relate to the particular constellation of PTSD symptoms that are experienced (Saladin, Brady, Dansky & Kilpatrick, 1995). It is important not to over interpret these findings as it is noted that there is no proven *causal* link between traumatic experiences and substance use in the study sample.

Alternatively diagnosis may be a factor in influencing these results as, complicating the relationship between coping with past traumas and the use of substances. As a greater number of past traumatic experiences has been associated with more severe symptoms of psychosis, increased anxiety and dysphoria in those schizophrenia or schizoaffective disorder (Newman, Turnbull, Berman, Rodrigues & Serper, 2010), increasing the risk of adopting maladaptive coping strategies such as the use of substances.

Hypothesis 3

There will be a significant relationship between the number of traumatic events experienced over the life course and an individual's confidence in their ability to address current substance use.

The results of the study clearly show that individuals who had experienced a greater number of lifetime traumas also had lower levels of confidence in their ability to change their substance misuse behaviours. This finding moves the discussion on from a view of individuals who fail to recognise their difficulties or actively choose unhelpful coping strategies to a group of people who feel unable to take control of life events.

Van der Kolk (2003, p8) tells us that the effects of trauma can become ingrained, leading to a chronic sense of helplessness and victimisation and that if the experience is unexpected and overwhelming and the foundations of a person's coping mechanisms are challenged. As previously explored traumatic experiences have the potential to overwhelm an individual's adaptive responses and sense of control, connection and meaning. When overwhelmed individuals may become defended against actual or perceived threat and disconnect from potential sources of support, limiting opportunities for recovery (Herman, 1992). An externalised locus of control can be seen to be a particular function for male offenders, detained in secure forensic mental health settings, as Levenson (1975, p343) explains "The experience of living in a highly regimented and confined environment would seem to have a profound effect on a person's perceptions of locus of control".

Traumatic events such as the sudden death of a loved one, rape or exposure to extreme violence, that occurs after an earlier trauma are expected to further erode the individual's sense of 'controllability' over negative events, resulting in higher levels of psychiatric symptoms (Carlson, 1977, p88). This relates back to the work of Foa and colleagues (1992), whereby unpredictable events challenge positive schemas and the addition of uncontrollability confirms negative schemas. This perhaps explains why within the study sample, those who had been forced into sexual intercourse or experienced a frightening situation in which they felt helpless were the most likely to lack confidence in being able to address problematic drug and alcohol use.

These findings also relate to the work of Clark et al., (2014) who in their study of men undergoing treatment for substance use disorder, within the criminal justice system found participants with comorbid trauma histories and substance use tended to externalise behaviour and expressed a desire for help without having developed interpersonal skills for coping with stress. It may be that a skill deficit rather than lack of desire to change is impacting on the sample within the present study and that with every additional traumatic experience, participants felt less able to cope with stress without the use of substances and lost confidence in their personal ability to affect change. One area the literature overlooks that is highlighted in the present study is the potential for experiencing a traumatic life event to increase confidence in individual ability to address substance use, as found in those who had survived a life threatening accident. Again this seems to relate to how the stressful life event is interpreted and understood by the individual, for example as an instance of being able to triumph over adversity making it possible to meet future life challenges.

The finding that there was no significant correlation between the frequency of traumas experienced by study participants and propensity towards help seeking behaviours is also perhaps in part explained by the work on Emotional Processing Theory by Foa and Riggs (1993) and Foa and Rothbaum (1998). As those with more rigid negative pre-trauma schemas have these confirmed by the traumatic event, it is reasonable to assume that participants with a schizophrenic type illness will also display a more concrete thinking style. The model suggests this in turn will lead to individuals interpreting those around them as being hostile and unable to help, suggesting that within this group help seeking behaviours, whilst desperately needed, are unlikely to be a presenting feature in this population. Also given the nature of a secure forensic mental health setting as oppose to a voluntary, community treatment setting where treatment is not mandated, the population in the study may generally have felt that they had less control over their choice of treatment and so helping seeking was minimal.

Hypothesis 4

Of all the stressful life events accounted for in the Stressful Life Events Screening Questionnaire (SLESQ), Violence, including; witnessing violence, being the victim of violence and perpetrating violence will have a significant impact on an individual's motivation to address current substance use.

An assumption had been made that a history of trauma related violence would have a significant impact on the study participants and their motivation to change behaviour, as the literature has demonstrated that there is a strong relationship between offenders reporting trauma and externalising behaviours, particularly by being violent themselves (Neller, Denney, Pietz & Thomlinson, 2006). Work from the USA has shown in studies of male prisoners that the most commonly reported type of trauma is witnessing someone being seriously injured or killed (Sarchiapone, Carlia, Cuomoa, Marchettia & Roy, 2008). Likewise it has demonstrated that children who witness domestic violence are at increased risk of engaging in aggressive behaviours in later life and substance use, which can exacerbate PTSD symptomatology (Saunders & Hamill, 2003). However the expectations of the literature were not borne out in the study results as violence was not found to have as great an impact as expected. Although it was beyond the scope of this study there may have been some value in distinguishing form experiences of reactive and instrumental violence in the sample in relation to trauma history as Payne, Watt, Rogers and McMurran (2008) found that despite predictions PTSD symptoms were no more marked in those that had used reactive as opposed to instrumental violence.

Given that the items from the SLESQ relating to witnessing violence, experiencing physical assault in childhood, adulthood, with a weapon and being the victim of a robbery or mugging were not found to have a significant impact on an individual's motivation to address current substance use, it was surprising to note that 'being in a frightening and helpless situation' did have an impact and rendered participants 7 times less likely than participants without that experience, to be internally motivated to address their substance use. Carlson (1997) sees the elements of uncontrollability and negative valence as being essential elements of a traumatic experience and that this has the most severe impact when the sense of self and control are

developing. In other words trauma that occurs before the age of 7 years, will have the most impact on development and later abilities to manage further traumatic stress.

The other traumas related to low internal motivation to address substance use included; being forced into sexual intercourse or living in a situation which posed significant danger to life, such as war zone, experiencing a sexual assault, and being in a frightening situation (nature unspecified) in which the individual felt helpless.

It is difficult to say exactly what each respondent meant in response to the item 'being in a frightening and helpless situation' but it is worth considering the relationship between trauma and psychosis in attempting to account for this. There is a growing body of research to support the idea that trauma and psychosis are linked. Those who have been through traumatic events may develop negative beliefs about that self, world and others that leave them vulnerable to psychosis or traumatic events may be processed in such a way as to lead to an experience of persistent threat (Calvert, Larkin & Jellicoe-Jones, 2008). Kilcommons and Morrison (2005) see a similarity in themes expressed in delusions and auditory hallucinations and characteristics of traumas experienced before the onset of psychosis. The Ehlers and Clark Cognitive Model of trauma can also inform our understanding of why the SLESQ item, 'being in a frightening and helpless situation' was of such import, as the reciprocal relationship between the nature of the trauma memory and the appraisals of the trauma and its sequelae can lead to biased appraisals which may contribute to an overall sense of victimisation. This again may feed back into underlying symptoms of paranoia in this client group.

The secure hospital environment may also be an important factor in understanding the role of 'helplessness' in this client group. As a trauma-informed care perspective would suggest that the use of seclusion and restraint techniques with inpatients that have previously experienced abuse may result in re-traumatisation due to mental associations between childhood trauma and current experiences. It is of particular concern then that in a study by Hammer, Springer, Beck, Menditto and Coleman, (2011) of 622 forensic inpatients, those who experienced higher rates of seclusion and restraint were also more likely to have experienced childhood

physical and sexual abuse. Findings echoed by Steinert, Bergbauer, Schmid and Gebhardt (2007) who in a study of 117 admissions with schizophrenia, found that seclusion and restraint were associated with lifetime exposure to life threatening traumatic events and that the risk of re-traumatisation and re-victimisation were enhanced during inpatient treatment.

Limitations

Defining Trauma

The ability to generalise findings from this study to other male offender populations is likely to be significantly impacted by the way in which trauma is conceptualised. Research using a more expansive definition of trauma tends to show that exposure to potentially traumatic events is widespread and relatively common (Frueh, Elhai & Kaloupek, 2004). However, as this study focuses on sub-clinical trauma as the more prevalent or normative occurrence in the population of interest (Crane, Orberleitner & Easton, 2013) the use of the SLESQ continues to have merit.

Self-report measures

A common criticism of the use of self-report measures in studies of traumatic stress is that they are full of inaccuracies and produce inconsistencies, which may have significant consequences for prevalence estimates, (Hardt & Rutter, 2004) and rely heavily on potential fallibility of memories when establishing trauma intensity (Frueh, et. al., 2004). Widom (1999) also suggests that those who engage in offending or substance misuse may be more willing to disclose past traumatic events as a way of explaining socially undesirable behaviours.

Despite support for the measure in the literature an issue that may have impacted on how well the SLESQ reflected the needs of the study population relates to how the question of violence in childhood is interpreted and crucially the individuals' distinction between what may have been perceived as acceptable punishment for childhood misdemeanours and acts of greater severity which warranted endorsement in the measure. The current study may also have

benefitted from the researcher adapting the SLESQ specifically to suit the sample and naming offence commission as a source of trauma. Likewise there was no scope within the SLESQ to identify the experience of being restrained, secluded or imprisoned as sources of trauma, despite the literature identifying custodial settings as a potential source of activating an on-going traumatic stress response or of re-traumatisation (Lambie & Randall, 2013).

Related to this and another significant area for potential error in trauma reporting relates to the respondents reaction to the abuse experienced. For example, if an individual considers that they no longer carry the experience with them or they do not consciously attach a negative emotional reaction to the experience, respondents are more likely to respond to self-report measures with a "no". Other potential confounders that could not be accounted for by the selected measure included, poor memory of events, the individual's relationship to an abuser and the perceived role of responsibility; that is to say, if victims feels they are to blame for the trauma they have experienced or believe that the perpetrator of abuse against them 'did not intend' to cause harm, they may be less likely to respond to questions with a "yes".

It is noted that one of the major findings of this study; that all participants experienced at least one traumatic event in their lifetime, is supported by the work of Calvert et al., (2008) but exceeds lifetime prevalence estimates in forensic inpatients in other studies which range from 64-93% (Barnard, Hankins and Robbins, 1992; Gray et al., 2003; Green et al., 2005; Kilcommons and Morrison, 2005; Spitzer et al., 2001). Certainly research which relies on retrospective measures is likely to suffer from distortion and loss of information associated with poor event recollection, particularly when drawing on the distant past and may be subject to recall bias and therefore subject to over or under reporting (Garieballa et al., 2006; Briere, 1992). Again the choice of measure, which gives a range of stressful life events for the participant to choose from, may have had an impact. Breslau (2002) notes using a list format instead of single question design raises prevalence rates of traumas reported by individuals.

The assessment of readiness for change in alcohol and substance users employed in this study, the SOCRATES, was subject to critique in chapter three of the thesis and its limitations will not be repeated here. It is worth nothing however that assessments of addiction are not typically tailored to meet the needs of those with severe co-morbid mental illness and as a Carey and Correia caution, consequently they have the potential to be "insensitive to the severity of psychiatric, employment, and financial problems experienced by persons with severe mental illness" (1998, p745).

Sample

The generalisability of the findings will be impacted by the sample size and the nature of the sample. It was also noted that a comparison group was not included in the present study and so it is difficult to say whether similar results would be found in secure forensic mental health units around the UK, should the same measures be applied.

Conclusions and Implications for Practice

This study employed empirically validated instruments and assessed a broad range of traumatic experiences in a well-defined sample of male, mentally disordered offenders with histories of problematic substance use. To date the impact on traumatic experiences on the substance using behaviours of male mentally disordered offenders has been largely overlooked in the literature and in clinical practice.

This neglect of the issue has serious practice implications. Reynolds, Mezey, Chapman, Wheeler, Drummond and Baldacchino (2005) suggest that undergoing a detoxification programme without identifying and managing trauma symptoms can result in a cycle in which trauma symptoms which were controlled by substance use return when the individual is drug free and perpetuates relapse. The need for trauma-informed care in forensic mental health settings is receiving increasing recognition and represents a growth area for forensic services. Clark, Reiland, Thorne and Cropsey, (2014) suggest that treatment could focus on

addressing the negative externalising behaviours thought to accompany those who have suffered a trauma and use substances regularly.

Finally in considering the clinical implications of this study it is important to note the potential for vicarious trauma to have an impact. Vicarious trauma, has been described by Miller and Najavits (2012, p3) as "a sense of identification with trauma that may result in staff experiencing trauma-type symptoms" and is thought to affect workplace decision making in that institutions may become hopeless, reactive and reliant on crisis management as offenders re-enact dynamics of their abusive and chaotic lifestyles. Given how commonplace the experiences of trauma were for study participants the potential for those caring for term to be exposed to vicarious trauma is equally high and again adds weight to the idea of modifying forensic healthcare setting to be trauma-informed.

Implication for further research

Gray et al., (2003) believe that PTSD symptoms related to offending are underdiagnosed in forensic mental health settings and therefore represent an unmet treatment need, which Egeressy, Butler and Hunter (2009) relate to violence and suicide in particular. Whilst this study demonstrated that traumatic experiences are commonplace for MDOs, the presence of active trauma symptoms directly related to offending behaviours requires further exploration.

Likewise there have been a number of studies that have demonstrated that experiences of loss and trauma are commonplace for offenders, without them receiving support or interventions to help address resultant difficulties. It has been suggested that PTSD can develop following the killing of another person (Rogers, Gray, Williams & Kitchiner, 2000) and that violent offenders may be at greater risk than a soldier or police officer who kills as the offender is more likely to kill someone they know and will commit the offence at close proximity, i.e. through the use of strangulation, with a bladed or blunt instrument. Even when traumatic stress experienced following this type of offending does not meet the threshold for PTSD, Leach, Burgess and Holmwood (2008) conceptualise it as 'traumatic grief' and see substance

use a prime method of maladaptive coping. Future research could usefully explore the selection and efficacy of coping strategies with this population.

It can be argued that mentally disordered offenders are a unique group in need of trauma-informed care. Ardino (2012, p2) advocates for further research and implementation of rehabilitation programmes for offenders, focusing on the potential for unresolved traumas to contribute to antisocial trajectories in offenders and to have a therapy interfering impact. This thesis supports the notion of trauma prevalence being high in the offender population, emphasises the complex needs of substance using male offenders with co-morbid psychosis and highlights the need to work towards offering trauma-informed care to male mentally disordered offenders.

Chapter 5

Discussion

Aim of the Thesis

To date the traumatic stress literature has tended to focus on the relationship between trauma exposure, such as adverse or abusive experiences in childhood and later onset of criminal behaviours in young offenders and women, typically neglecting the experiences of male, mentally disordered offenders (Ardino, 2012). Likewise the relationship between trauma and substance use has largely been dominated by the experiences of women and little attention has been paid to the specific needs of men in forensic mental health settings. This is despite the fact that research has demonstrated that mentally disordered offenders with co-morbid traumatic stress disorders and problematic substance use are at greater risk of remaining entrenched in the criminal justice system (Ouimette, Finney & Moos, 1999).

This thesis sought to address the dearth in the literature by exploring the prevalence of exposure to traumatic or stressful life events in male mentally disordered offenders currently detained in a secure hospital setting. It aimed to improve current understanding of the potential sources of traumatic stress pertinent to this population and the role of traumatic stress in the lives of male, mentally disordered offenders who misuse drugs and alcohol.

It is noted that trauma can arise from multiple sources and that the application of an all-purpose, general definition to meet the needs of researchers and practitioners across populations, is remarkably difficult (Weathers & Keane, 2007). The perception of an event as being traumatic is highly subjective and is typically felt to result from exposure to actual or threatened death, serious injury or sexual violation (American Psychiatric Association, 2013).

Summary of Findings

The Introduction outlined the literature in relation to theories of development of traumatic stress reactions and provided a context for the thesis by orienting the reader to the growth in trauma research over the last 20 years and provided working definitions of the terms mentally disordered offender and substance use.

Chapter Two presented a systematic literature review exploring the prevalence and nature of trauma in substance using and non-substance using male offenders, with and without co-morbid mental disorder. It looked particularly at the relationship between trauma exposure and substance use in male offenders, in Prison and Forensic Mental Health populations. Following application of the PICO criteria twelve studies were included for discussion in the review. The total sample size of the review comprised 4,440 participants. Results from the quality assessment demonstrated that none of the studies could be classified as ‘high quality’. However, nine studies were of ‘moderate quality’ with the remaining study being just below par and of ‘low quality’ but retained due to paucity in the literature.

There was considerable variation in assessment measures across the studies to assess both trauma exposure and substance use and in part this may have accounted for the wide range of prevalence estimates of exposure to traumatic events in male offenders with concurrent drug or alcohol misuse offered. However, even at lower end prevalence estimates, the potential for a drug or alcohol using male offender population to have been exposed to multiple sources of potentially traumatic events remained and this represents a significant clinical concern.

There was agreement in the literature about the nature of traumas experienced by male offenders, including; witnessing death or serious injury, experiencing a physical assault or sexual assault as an adult and childhood physical or sexual abuse and neglect. Of particular importance to this population were the roles of victimisation and the impact of being incarcerated as a mechanism for activating trauma responses.

Chapter Three examined the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) developed by Miller and Tonigan (1996). This assessment tool is a 19-item self-report measure, available in two versions designed to enable assessment of readiness for change in both alcohol and drug users. The measure builds on the principles of Stage Theory and in particular the Trans-Theoretical Model (TTM) of behaviour change (Prochaska and Velicer, 1997). According to the authors the assessment yields three factorially-derived scale scores, across what are described as distinct domains of: Problem Recognition, Ambivalence and Taking Steps. The concept of readiness to change underpins many offender rehabilitation programmes and finds support in the literature as a mediator and potential predictor of change (Demmel, Beck, Richter and Reker, 2004). The tool appears to have good internal consistency and of the three scales the Recognition and Taking Steps scales appear to be the most reliable and stable, whereas support for the Ambivalence scale was more mixed. Based on assessments of internal reliability and test retest reliability the SOCRATES appears to be a relatively robust measure, although to some extent this robustness may be dependent on the population and the therapeutic setting in which the tool is administered (Bertholet, 2009).

Chapter Four outlined a study which aimed to identify rates of trauma prevalence in a sample of 82 male mentally disordered offenders, with histories of problematic drug or alcohol use, detained in conditions of medium and low security, illustrating which types of trauma were most commonly experienced. The study assessed whether there was a significant relationship between the number of traumatic events experienced over the life course and an individual's recognition of problematic substance or alcohol use, internal and external motivation to change this and confidence in ability to address this. It also considered whether particular traumatic experiences had a greater impact on the participants' recognition, motivation and confidence in managing substance use. Results showed that without exception all participants had experienced a traumatic event in their lifetime with 46% reporting exposure to 4 – 6 different traumatic events, a figure well above that which would be expected in the general population. Participants who had experienced more 'traumas' or stressful life events as defined by the SLESQ (Stressful Life Events Screening Questionnaire), showed a greater recognition of problematic drug use than those participants who reported experiencing fewer lifetime traumas. These participants' also had lower levels of internal motivation and confidence in addressing problematic substance misuse.

A strength of the study rested in the identification of a significant relationship between trauma exposure and what might be perceived in a clinical setting to be reluctance to address substance misuse problems and the types of trauma that had the most significant impact on the recognition and management of substance misuse in the sample. Of note only internal motivation and confidence in effecting change were impacted by past trauma, whereas there were no significant findings in relation to external motivation and help seeking. This is potentially a consequence of the study having been conducted in a secure mental health setting where treatment is mandated and to a degree change is enforced.

Death of an immediate family member, romantic partner or very close friend through accident, homicide or suicide appeared to be the strongest factor influencing recognition of problematic drug use. Surviving a life threatening accident appeared to build confidence, whereas forced sexual intercourse or being in situation of helplessness dramatically dented confidence and internal motivation in addressing substance use.

Theoretical Implications

This thesis adds support to the idea that exposure to traumatic experiences are commonplace in an offender population. It sheds light on the range of traumas most commonly experienced and highlights sources of traumatic particular to this population, including; trauma related to psychosis, offence commission and incarceration.

The thesis provides limited support for there being a potential functional relationship between the presence of traumatic experiences and the use of substances in mentally disordered offenders (Stewart & Conrod, 2003) in that 46% of the study sample reported exposure to 4 – 6 different traumatic events, a figure higher than that expected in the general population and that a significant relationship was found between the number of traumatic events experienced and recognition of problematic substance use. No comment can be made on the direction of this relationship.

The thesis also potentially provides support for acceptance of the self-medication hypothesis as in the sample of MDOs who misused substances there was a significant relationship found between the number of traumatic events experienced over the life course and a lack of internal motivation to address problematic substance use. This could suggest that within the study population studied substance use has a primary function in alleviating trauma symptoms (Khantzian, 1997), although it is of course noted that no direct assessment of active trauma symptoms was made in the study. A significant relationship between the number of traumatic events experienced over the life course and a lack of confidence in being able to address problematic substance use also reflects the literature suggesting that even when engaging in treatment, clients may have negative expectations about their ability to cope without the use of substances (Traynor, Power, Summers & Hughes, 2012).

Practical Implications

This thesis highlighted the need for criminal justice and forensic mental health services to be sensitive to high co-morbidity of substance misuse and trauma in the male offender population. This is of particular importance considering research that failure to address substance use and trauma-related symptoms may contribute to higher recidivism rates in male offenders with PTSD (Kubiak et al., 2004, Heckman, Cropsey &Olds-Davis, 2007).

Assessment of Trauma

There continue to be significant issues with the use of self-report measures in assessing the presence of trauma in an offender sample. It could be argued that the use of life history data might add credence to the position that offenders will show a higher prevalence of trauma exposure in comparison to a non-offending community sample, however, Widom et al., (1999) cited in (Grella et al., 2005, p51) caution that “some individuals who engage in criminal behaviors or substance abuse may be more willing to self-disclose childhood traumatic events as a way to explain or rationalise these socially undesirable behaviors”. Of course the counter to this is that a majority of offenders and perhaps most especially those with co-morbid mental health disorders, have been so stigmatised by their life experiences and current diagnosis that they may actually be significantly under-reporting trauma or failing to recognise symptoms. In both examples seems prudent to apply an objective assessment

alongside a self-report measure.

Additionally it could be argued that there is a gender-bias at work in assessment of trauma, in that services devoted to women tend to show more sensitivity to this issue, whereas male offender services may be more likely to decline trauma-aware interventions for fear of 'opening up past conflicts that would then be acted out' or failing to recognise that acts of violence against staff or harm against the self may be prevalent precisely because underlying trauma is not being attended to (Kinsler & Saxman, 2007). Overall it appears that the culture of the prison environment impacts on the reporting of trauma. Given that trust is a requisite in the disclosure of a trauma history (Grella & Greenwall, 2007) forensic in-patients or inmates may not feel able to make disclosures in restricted environments. If family members or fellow patients or inmates are the perpetrators of the trauma there may be additional level of fear attached to disclosure, which such environments cannot contain.

Finally the choice of assessment measure undoubtedly impacts on reported prevalence rates of trauma and substance use in the male offender population. It appears that a balancing act is needed between the use of formal diagnostic tools, for example indicating the presence of PTSD or substance dependence and an assessment process that is sensitive to the myriad sources of potential trauma that an offender population is likely to be exposed to and co-occurring complexities in relation to the use of substances.

Methodological Limitations of the Thesis

This piece of research is subject to a number of limitations, which have been explored within the relevant chapters. Prior to drawing conclusions from this work it will be important to remain mindful of these. The introduction highlighted issues with variation in terminology in both the addiction and trauma research fields. The more inclusive the definition of trauma the more impact there will be on estimates of trauma prevalence, whereas the rigidity of a PTSD diagnosis potentially fails to fully reflect the complex needs of male mentally disordered offenders. Similarly there is wide variation in the assessments made of trauma exposure and problematic substance use, which further cloud the field.

The literature search was undoubtedly constrained by the sensitivity and accuracy of the terms used in exploring the electronic databases and the systematic review echoed issues with variation in how trauma is defined and assessed making it difficult to draw conclusions and combine results to obtain an overall rate of trauma prevalence for substance using male offenders in prison and forensic mental health settings. The review also highlighted the lack of research into the role of substances in male mentally disorders offenders who had been exposed to multiple traumas.

The thesis critiqued one of the psychometric assessments used in the research, the SOCRATES, which focuses on the individual's recognition of drug and alcohol problems, degree of ambivalence and steps taken towards addressing use. The main feature that it shares with the other assessment tool used in the study, the SLESQ, is that it is a self-report measure. Both measures were selected as they offer a broad overview of need and tap into issues present in a population that diagnostic thresholds may not always come to clinical attention. Whilst the use of self-report measures were readily accepted by the sample and selected to be as non-intrusive as possible, given the subject area, it is noted that any retrospective assessment has the potential to suffer from distortion and information loss and result in over or under reporting (Garieballa et al., 2006; Briere, 1992). Further caution in accepting the findings is needed given the potential for impression management in making disclosures, possibly inflating the impact of traumatic experiences to explain substance use or offending behaviours Widom (1999).

The research study within this thesis is limited by the relatively small sample size (n=82) and restricted population (recruited from one London forensic mental health unit) and as a consequence the generalizability of the findings will be impacted. It is impossible to say whether rates of trauma prevalence would have differed had alternative measures been used and equally difficult to account for any confounding impact that participation in the service substance misuse program may have had on the study participants ability to recognise both problematic substance use and accept this as a maladaptive means of coping with past trauma.

Implications for further research

This study highlights the need for further research to be conducted exploring the impact of traumatic experiences on male mentally disordered offenders. More work is needed to establish the prevalence and range of traumas most commonly experienced by male mentally disordered offenders. Specifically the literature would be enhanced by considering the direction of the relationship between substance use and trauma in male mentally disordered offenders and the significance of this in offenders' ability to recognise problems and engage in treatment.

The idea of 'helplessness' was also a key concept highlighted in this work and is worthy of further exploration with the male MDO population. As without over inflating the findings of this study it appeared that it was the broader loss of locus of control and a sense of being powerless and helpless, rather than experiencing a particular traumatic event that impacted the most on the participant's confidence in enacting change. The concept of *helplessness* could be said to hold particular resonance within forensic mental health settings as operating principles of coercion and control inherent within these systems have been argued to re-traumatise survivors (Bloom & Farragher, 2010), thus disabling individuals further and limiting confidence and motivation to more away from maladaptive coping strategies. It would be useful to examine whether this finding would be replicated with a larger and more diverse sample and to consider if a similar effect could be produced in relation to other treatment targets, such as violent offending, as opposed to substance misuse.

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APPENDIX A Search results yielded from the scoping exercise.

DATABASE SEARCHED Searches conducted on: 12.03.2014	SEARCH TERMS USED	SEARCH RESULT NUMBER	RELEVANT SEARCH RESULTS
Cochrane database of systematic reviews (terms searched in title, abstract and keywords)	Traum*, Trauma-Informed, Emotional Traum*	2	0
	PTSD*, post-traumatic stress*, prevalence, substance*	113	1
	traum*, offen*, substance*	42	0
	traum*, crim*, drug*	7	0
	Traum*, crimin*, forensic*, substance*	11	0
	post-traumatic stress*, prison*, drug*	17	1
	post-traumatic stress*, forensic*, substance,*	2	0
Database of abstracts of reviews of effects – DARE (terms searched in any field, inc author, title, journal and funder)	Traum*, prevalence, substance*, offen*	0 0	0 0
	post-traumatic stress*, prison*, drug*	0	0
	traum*, crim*, drug*		
PILOTS	PTSD, prevalence, offen*, substance*	75 14	6 3
	Traum*, substance*, offen*	6	1
	Traum*, offen*, alcohol*	9	2
	Traum*, substance*, drug*		
SWETSWISE	Traum*, prevalence, substance*, offen*, drug*, alch*,	139	4
	PTSD*, post-traum*, Traum*, prevalence, substance*, offen*, drug*, alch*, crim*	151	6
PsycINFO	Traum*, prevalence, substance*, offen*, drug*, alch*, PTSD*, post-traum*, Traum*, prevalence,	23	12

	substance*, offen*, drug*, alch*, crim*	62	17
ASSIA	Traum*, PTSD, post-traumatic stress, prevalence, offend*, crim*, patien*, forensic*, secure, prison Post-traumatic stress, ptsd, traum*, prevalence, substance*, drug*, alcohol*, crim*, offen*, patient, forensic*, prison, correct*	933 1443	53 13
ERIC	post-traumatic stress or ptsd or traum* and prevalence and substance* or drug* or alcohol* and crimin* or offen* or patient or forensic* or prison* or correct*	10,363 499 50	5
EMBASE	traum*, prevalence, PTSD, post-traumatic stress crim*, offen* forensic, prison traum*, PTSD, post-traumatic stress crim*, offen*, forensic, prison *syntax combined*	141842 82798 32706 599	2

APPENDIX B Data extraction form.

Study Information			
Author(s)	Study Title	Year of Publication	Country
Brief description			
Population			
Recruitment (Prison/Hospital/Community) Sample size	Inclusion Criteria	Exclusion Criteria	
Assessment Methods			
Trauma Measure Addiction Measure Statistical Analysis			
Results			
NB			

Strengths	Weaknesses

APPENDIX C Quality Assessment Forms

Cohort Study Adapted from the Public Health Resource Unit, England (2006)

Question	No	Partially	Yes	Unknown	Comments
Initial Screening					
Did the study address a clearly focused issue (population, risk factors, outcome)?					
Did the author(s) use an appropriate method to answer their question?					
Sampling					
Was the cohort representative of a defined population?					
Was there something special about the cohort?					
Was everybody included in the sample who should have been included?					
Exposure					
Did they use subjective or objective measurements?					
Have the measures been validated?					
Were all the subjects classified into exposure groups using the same procedure?					
Outcomes					
Has a reliable system been established for detecting all the cases?					
Were the measurement methods similar in the different groups?					
If relevant, were the subjects blinded to exposure?					
Confounding Factors					
Have the authors identified all important confounding factors?					
Have they taken account of the confounding factors in the design and/or analysis?					
Follow up procedures					
Was the follow up of subjects complete enough?					
Was the follow up of subjects long enough?					
Results					
Have they reported the results adequately?					
Are the design methods of this study sufficiently flawed to make the results unreliable? ®					
Application of results					
Can the results be applied to the local population?					
Are the subjects in the study sufficiently different from your population to case concern? ®					
Can you quantify the local benefits and harms?					
Do the results of this study fit with other available evidence?					
Total (maximum 42)					

Qualitative Research Adapted from the Public Health Resource Unit, England (2006)

Question	No	Partially	Yes	Unknown	Comments
Initial Screening					
Is the study exploring the interplay of substance use, trauma and offending?					
Are the hypotheses/research questions clearly stated?					
Research Design					
Is the research design an appropriate way of addressing the aims of the research?					
Sampling					
Has the researcher explained how participants were selected?					
Has the researcher explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study?					
Is there any discussion around recruitment?					
Data Collection					
Was the data collected in a way that addressed the research issue?					
Is the setting for data collection justified?					
Is it clear how data was collected?					
Has the researcher justified the methods of data collection?					
Has the researcher made the data collection methods explicit?					
Have the methods been modified during the study? If so, has the researcher explained how and why?					
Is the form of data collection clear (tape recordings, video material, notes)?					
Reflexivity					
Has the relationship between researcher and participants been adequately considered?					
Has the researcher critically examined their own role, potential bias and influence during the following:					
□ Formulation of research questions					
□ Data collection including sample recruitment and choice of location					
Has the researcher responded to events during the study and did they consider the implications of any changes in the research design?					
Ethical Issues					
Are there sufficient details of how the research was explained to participants?					

Has the researcher discussed informed consent and confidentiality?					
Has the researcher discussed how they have handled the effects of the study on participants during and after the study?					
Data Analysis					
Is there an in-depth description of the analysis process?					
If thematic analysis is used, is it clear how the categories/themes were derived from the data?					
Has the researcher explained how the data presented was selected from the original sample to demonstrate the analysis process?					
Is sufficient data presented to support the findings?					
Is contrary data taken into account? If so, to what extent?					
Has the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation?					
Findings					
Are the findings explicit?					
Is there adequate discussion of the evidence both for and against the researcher's arguments?					
Value of the research					
Has the researcher discussed the contribution the study makes to trauma/substance abuse literature in relation to offenders?					
Has the researcher identified new areas where research is necessary?					
Has the researcher discussed whether or how the findings can be transferred to another population or considered other ways in which the research may be used?					
Total (maximum 58)					

APPENDIX D **Table of Excluded Studies (Examples)**

Details of Study	Reasons for Exclusion
Austin, A. (2004). Does forced sexual contact have criminogenic effects? An empirical test of derailment theory. *Journal of aggression, maltreatment & trauma*, *8*(4), 41-66.	• Rejected at PICO stage. • Study focused on women only
Brooke, D. (1993). Addiction, dependencies and abuses in mentally abnormal offender populations. *Current Opinion in Psychiatry*, *6*(6), 769-773.	• Rejected at PICO stage. • Study focused on juvenile population only
Clark, W.H, Masson, C.L., Delucchi, K.L., Hall, S.M. & Sees, K.L. (2001) Violent traumatic events and drug abuse severity, *Journal of Substance Abuse Treatment, 20*(2), 121-127	• Rejected at PICO stage. • Focus on victims of crime rather than perpetrators.
Cutajar, M. C., Mullen, P. E., Ogloff, J. R., Thomas, S. D., Wells, D. L., & Spataro, J. (2010). Psychopathology in a large cohort of sexually abused children followed up to 43 years. *Child abuse & neglect*, *34*(11), 813-822.	• Included at PICO stage but rejected at the quality assessment stage. • No clear assessment of trauma • Not able to generalise results to target population.
Dass-Brallsford, P. & Myrick A. (2010) Psychological Trauma and Substance Abuse: The Need for an Integrated Approach , *Trauma Violence and Abuse, 11*(4), 202-213	• Rejected at PICO stage. • Not offender specific
Duncan, R. D., Saunders, B. E., Kilpatrick, D. G., Hanson, R. F., & Resnick, H. S. (1996). Childhood physical assault as a risk factor for PTSD, depression, and substance abuse: findings from a national survey. *American Journal of Orthopsychiatry*, *66*(3), 437.	• Rejected at PICO stage. • Study focused on women only • Not able to generalise results to target population.
Erwin, B. A., Newman, E., McMackin, R. A., Morrissey, C., & Kaloupek, D. G. (2000). PTSD, malevolent environment, and criminality among criminally involved male adolescents. *Criminal Justice and Behavior*, *27*(2), 196-215.	• Rejected at PICO stage. • Study focused on juvenile population only
Lynch, S. M., Heath, N. M., Mathews, K. C., & Cepeda, G. J. (2012). Seeking safety: an intervention for trauma-exposed incarcerated women?. *Journal of Trauma & Dissociation*, *13*(1), 88-101.	• Rejected at PICO stage. • Study focused on women only • Not able to generalise results to target population.
Renn, P. (2002) The link between childhood trauma and later violent offending: The application of attachment theory in a probation setting. *Attachment & Human Development*, *4*(3), 294-317.	• Rejected at PICO stage • Single case study design
Sarteschi, C. M., & Vaughn, M. G. (2010). Double Jeopardy: A Review of Women Offenders' Mental Health and Substance Abuse Characteristics. *Victims and Offenders*, *5*(2), 161-182.	• Rejected at PICO stage. • Study focused on women only
Salagdo, D.M., Quinlan, K.J., & Zlotnick, C. (2007) The relationship of lifetime polysubstance dependence to trauma exposure, symptomatology, and psychosocial functioning in incarcerated women with comorbid PTSD and substance use disorder *8*(2), 9-26	• Rejected at PICO stage. • Study focused on women only

Saxon, A.J, Davis, T.M., Sloan, K.L., McKnight, K.M., McFall, M.E., Kivlahan, D.R. (2001) *Trauma,* symptoms of posttraumatic stress disorder, and associated problems among incarcerated veterans. *Psychiatric Services, 52*(7), 959-964.	• Rejected at PICO stage. • Study focused on veteran population within criminal justice system
Sirdifield, C., Gojkovic, D., Brooker, C., & Ferriter, M. (2009). A systematic review of research on the epidemiology of mental health disorders in prison populations: a summary of findings. *The Journal of Forensic Psychiatry & Psychology*, *20*(S1), 78-101.	• Included at PICO stage but rejected at the quality assessment stage. • No clear assessment of trauma • Not able to generalise results to target population.
Stalans, L. J. (2009). Women's offending behavior: Evidence-based review of gender differences and gender responsive programs. *Victims and Offenders*, *4*(4), 405-411.	• Rejected at PICO stage. • Study focused on women only
Torchalla, I., Nosen, L., Rostam, H., & Allen, P. (2012) Integrated treatment programs for individuals with concurrent substance use disorders and trauma experiences: A systematic review and meta-analysis, *Journal of Substance Abuse Treatment*, *42* (1), 65-77	• Rejected at PICO stage. • Not offender specific

APPENDIX E **Information Sheet**

Stressful Life Events and Substance Use.

We would like to invite you to take part in a research study. Before you decide you need to understand what it would involve for you. Talk to others about the study if you wish or ask the researcher if there is anything that is not clear or if you would like more information.

What is the purpose of the study?

We would like to find out what role stressful life events play in using drugs and alcohol and taking part substance misuse treatment. As part of this I would like to review the questionnaires you complete as part of your drug and alcohol treatment and ask you complete an additional brief questionnaire which looks at stressful life events.

Why have I been invited?

You have been chosen because your clinical team have identified you as someone who has a history of using drugs or alcohol.

Do I have to take part?

Your participation in this research study is completely voluntary and you do not have to take part if you do not wish to. If you decide to take part you are still free to withdraw at any time, without giving a reason. This will have no effect on your current or future treatment or medical care and will not be recorded in your medical record. We will ask you to sign a consent form to show you have agreed to take part.

What will happen to me if I take part?

You will be asked to complete some questionnaires.

Who else will you talk to?

We will talk to a member of your nursing team and look through your records before you start the group to collect some background information and information on your behaviour. This will be repeated after 16 weeks and then three months after the group has finished. Just like what you tell us yourself, this information will be kept confidential and anonymous.

How will the information from my records be used?
Information from your clinical records will be gathered in order to obtain some background information about you. This will include information such as: your ethnicity, previous drug and alcohol use, offence, diagnosis. This information will be stored anonymously on a secure database (that is only available to the research team). Without this information it would be difficult for the results of the research to be used or interpreted meaningfully. We collect this information to find out if we have a balanced representation of different ages, ethnicities and so on, so that we can take these differences into account when we look at the results of the study.

What are the possible disadvantages and risks of taking part?
The nature of some of the questionnaires is sensitive. Like many of the questions you are asked in hospital you may be asked some personal questions which may upset you. If this is the case you will be offered support and advice from the researcher and your clinical team.

What are the possible benefits from taking part?

You will receive no direct benefit from taking part in the study but your participation may mean that we can improve services for residents in units like this one as we will have more information about treatment needs.

What if there is a problem?
If you have a concern about any aspect of this study, you should ask to speak with the researcher who will do their best to answer your questions. If you remain unhappy and wish to complain formally, you can do this through the NHS Complaints Procedure. Details can be obtained from your ward. If, during the course of the study the researcher has concerns about the safety of yourself or others this will be communicated to your ward.

Will my taking part in the study be kept confidential?

All the information about your participation in this study will be kept confidential unless you tell us anything which would represent a risk to yourself or others in which case this will be reported to your ward staff, who should record this in your notes. All records related to your involvement in this research study will be stored securely. Data gathered from this study will be maintained as long as required by regulations, which is up to 10 years following the publication of empirical articles or communications describing the results of the study.

Your identity will not be recorded as part of your data, and will not be revealed in any publication that may result from this study. Data will be collected with only a participation number to identify it. All information you provide will be kept confidential, except as governed by law.

Who is organising and funding the research?

The research is being carried as part of a research project supervised by the University of Birmingham.

OK, so what happens now?

If you'd like to take part, we need you to sign the form saying that you agree to participate. This means completing questionnaires and meeting the researcher.

Further information and contact details.

For any more information or to answer any questions you may have please ask the researcher who is giving you this form or speak to your clinical team who can get you in contact with the chief investigator.

Chief Investigator:

Nicola Piek
Based at: The North London Forensic Service

APPENDIX F

PARTICIPANT CONSENT FORM

Stressful Life Events and Substance Use.

Participant Identification Number for this Study:

Name of Principle Researcher:

Please initial the relevant boxes

1. I confirm that I have read or the form has been read to me and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. ☐

3. I understand that data collected during the study, may be looked at by individuals from the research team and from regulatory authorities where it is relevant to my taking part in this research. I give permission for these individuals to have access to my data. ☐

4. I agree to my case notes being accessed and for information to be collected for the purpose of this study. ☐

5. I agree to take part in the above study. ☐

6. I understand that if I tell the researcher anything which could represent a risk to myself or others then this will be reported to my ward staff, who should record this in my notes. ☐

Name of Participant	Date	Signature
Name of Person Taking Consent	Date	Signature

Assessment Measures

(Version 1 Ref: 13/LO/0432 5/3/2013)

APPENDIX G

TMQ Ryan et al. (1995)

This questionnaire concerns people's reasons for entering treatment and their feelings about treatment. Different people have different reasons for entering treatment, and we want to know how true each of these reasons is for you. Please indicate how true each reason is for you, using the following scale:

A	**I came for treatment at the clinic because**	**Not at all True**		**Somewhat True**			**Very True**	
1	I really want to make some changes in my life.	1	2	3	4	5	6	7
2	I won't feel good about myself if I don't get some help.	1	2	3	4	5	6	7
3	I was referred by the legal system.	1	2	3	4	5	6	7
4	I feel so guilty about my problem that I have to do something about it.	1	2	3	4	5	6	7
5	It is important to me personally to solve my problems.	1	2	3	4	5	6	7

B	**If I remain in treatment it will probably be because**	**Not at all True**		**Somewhat True**			**Very True**	
6	I'll get in trouble if I don't.	1	2	3	4	5	6	7
7	I'll feel very bad about myself if I don't.	1	2	3	4	5	6	7
8	I'll feel like a failure if I don't.	1	2	3	4	5	6	7
9	I feel like it's the best way to help myself.	1	2	3	4	5	6	7
10	I don't really feel like I have a choice about staying in treatment.	1	2	3	4	5	6	7
11	I feel it is in my best interests to complete treatment.	1	2	3	4	5	6	7

C	**Rate each of the following in terms of how true each statement is for you:**	**Not at all True**		**Somewhat True**			**Very True**	
12	I came to treatment now because I was under pressure to come.	1	2	3	4	5	6	7

13	I am not sure this program will work for me.	1	2	3	4	5	6	7
14	I am confident this program will work for me.	1	2	3	4	5	6	7
15	I decided to come to treatment because I was interested in getting help.	1	2	3	4	5	6	7
16	I'm not convinced that this program will help me stop drinking.	1	2	3	4	5	6	7
17	I want to openly relate with others in the program.	1	2	3	4	5	6	7
18	I want to share some of my concerns and feelings with others.	1	2	3	4	5	6	7
19	It will be important for me to work closely with others in solving my problem.	1	2	3	4	5	6	7
20	I am responsible for this choice of treatment.	1	2	3	4	5	6	7
21	I doubt that this program will solve my problems.	1	2	3	4	5	6	7
22	I look forward to relating to others who have similar problems.	1	2	3	4	5	6	7
23	I chose this treatment because I think it is an opportunity for change.	1	2	3	4	5	6	7
24	I am not very confident that I will get results from treatment this time.	1	2	3	4	5	6	7
25	It will be a relief for me to share my concerns with other program participants.	1	2	3	4	5	6	7
26	I accept the fact that I need some help and support from others to beat my problem.	1	2	3	4	5	6	7

APPENDIX H

Personal Drinking Questionnaire

(SOCRATES 8A)

Miller and Tonigan (1996)

Please read the following statements carefully. Each one describes a way that you might (or might not) feel about your drinking. For each statement, circle one number from 1 to 5, to indicate how much you agree or disagree with it right now. Please circle one and only one number for every statement.

	NO! Strongly Disagree	**No** Disagree	**?** Undecided or Unsure	**Yes** Agree	**YES!** Strongly Agree
1. I really want to make changes in my drinking.	1	2	3	4	5
2. Sometimes I wonder if I am an alcoholic.	1	2	3	4	5
3. If I don't change my drinking soon, my problems are going to get worse.	1	2	3	4	5
4. I have already started making some changes in my drinking.	1	2	3	4	5
5. I was drinking too much at one time, but I've managed to change my drinking.	1	2	3	4	5
6. Sometimes I wonder if my drinking is hurting other people.	1	2	3	4	5
7. I am a problem drinker.	1	2	3	4	5
8. I'm not just thinking about changing my drinking, I'm already doing something about it.	1	2	3	4	5
9. I have already changed my drinking, and I am looking for ways to keep from slipping back to my old pattern.	1	2	3	4	5
10. I have serious problems with drinking.	1	2	3	4	5
11. Sometimes I wonder if I am in control of my drinking.	1	2	3	4	5
12. My drinking is causing a lot of harm.	1	2	3	4	5
13. I am actively doing things now to cut down or stop drinking.	1	2	3	4	5

14. I want help to keep from going back to the drinking problems that I had before.	1	2	3	4	5
15. I know that I have a drinking problem.	1	2	3	4	5
16. There are times when I wonder if I drink too much.	1	2	3	4	5
17. I am an alcoholic.	1	2	3	4	5
18. I am working hard to change my drinking.	1	2	3	4	5
19. I have made some changes in my drinking, and I want some help to keep from going back to the way I used to drink.	1	2	3	4	5

APPENDIX I

Personal Drug Use Questionnaire

(SOCRATES 8D)

Miller and Tonigan (1996)

Please read the following statements carefully. Each one describes a way that you might (or might not) feel about your drug use. For each statement, circle one number from 1 to 5, to indicate how much you agree or disagree with it right now. Please circle one and only one number for every statement.

	NO! Strongly Disagree	**No** Disagree	**?** Undecided or Unsure	**Yes** Agree	**YES!** Strongly Agree
1. I really want to make changes in my use of drugs.	1	2	3	4	5
2. Sometimes I wonder if I am an addict.	1	2	3	4	5
3. If I don't change my drug use soon, my problems are going to get worse.	1	2	3	4	5
4. I have already started making some changes in my use of drugs.	1	2	3	4	5
5. I was using drugs too much at one time, but I've managed to change that.	1	2	3	4	5
6. Sometimes I wonder if my drug use is hurting other people.	1	2	3	4	5
7. I have a drug problem.	1	2	3	4	5
8. I'm not just thinking about changing my drug use, I'm already doing something about it.	1	2	3	4	5
9. I have already changed my drug use, and I am looking for ways to keep from slipping back to my old	1	2	3	4	5

pattern.					
10. I have serious problems with drugs.	1	2	3	4	5
11. Sometimes I wonder if I am in control of my drug use.	1	2	3	4	5
12. My drug use is causing a lot of harm.	1	2	3	4	5
13. I am actively doing things now to cut down or stop my use of drugs.	1	2	3	4	5
14. I want help to keep from going back to the drug problems that I had before.	1	2	3	4	5
15. I know that I have a drug problem.	1	2	3	4	5
16. There are times when I wonder if I use drugs too much.	1	2	3	4	5
17. I am a drug addict.	1	2	3	4	5
18. I am working hard to change my drug use.	1	2	3	4	5
19. I have made some changes in my drug use, and I want some help to keep from going back to the way I used before.	1	2	3	4	5

APPENDIX J

STRESSFUL LIFE EVENTS SCREENING QUESTIONNAIRE - REVISED

The items listed below refer to events that may have taken place at any point in your entire life, including early childhood. **If an event or ongoing situation occurred more than once, please record all pertinent information about additional events on the last page of this questionnaire. (**Please print or write neatly)

1. Have you ever had a life-threatening illness?

No _____ **Yes** _____ If yes, at what age? _____

Duration of Illness _____

Describe specific illness

_____

2. Were you ever in a life-threatening accident?

No _____ **Yes** _____ If yes, at what age? _____

Describe accident_____

Did anyone die? ____ Who? (Relationship to you)_____

What physical injuries did you receive?

_____

Were you hospitalized overnight? No_____ Yes _____

3. Was physical force or a weapon ever used against you in a robbery or mugging?

No _____ **Yes** _____ If yes, at what age? _____

How many perpetrators?_____

Describe physical force (e.g., restrained, shoved) or weapon used against you.

_____

Did anyone die? _____

Who?_____

What injuries did you receive?

_____

Was your life in danger? _____

4. Has an immediate family member, romantic partner, or <u>very close</u> friend died because of accident, homicide, or suicide?

No _____ **Yes** _____ If yes, how old were you? _____

How did this person die?

_____

Relationship to person lost

_____

In the year before this person died, how often did you see/have contact with him/her?

_____

Have you had a miscarriage? No _____ Yes _____ If yes, at what age?_____

5. At any time, has anyone (parent, other family member, romantic partner, stranger or someone else) ever <u>physically forced</u> you to have intercourse, or to have oral or anal sex against your wishes, or when you were helpless, such as being asleep or intoxicated?

No _____ **Yes** _____ If yes, at what age? _____

If yes, how many times? 1 _____, 2-4 _____, 5-10 _____, more than 10_____

If repeated, over what period? 6 mo. or less _____, 7 mos.-2 yrs. _____, more than 2 yrs. _____ but less than 5 yrs. _____, 5 yrs. or more _____.

Who did this? (Specify stranger, parent, etc.) _____

Has anyone **else** ever done this to you? No_____ Yes_____

6. Other than experiences mentioned in earlier questions, has anyone ever touched private parts of your body, made you touch their body, or tried to make you to have sex against your wishes?

No _____ **Yes** _____ If yes, at what age? _____

If yes, how many times? 1 _____, 2-4 _____, 5-10 _____, more than 10_____

If repeated, over what period? 6 mo. or less _____, 7 mos.-2 yrs. _____, more than 2 yrs __. but less than 5 yrs. _____, 5 yrs. or more _____.

Who did this? (Specify sibling, date, etc.) _____

What age was this person? _____

Has anyone **else** ever done this to you? No_____ Yes_____

7. When you were a child, did a parent, caregiver or other person ever slap you repeatedly, beat you, or otherwise attack or harm you?

No _____ **Yes**_____ If yes, at what age _____

If yes, how many times? 1 _____, 2-4 _____, 5-10 _____, more than 10 _____

If repeated, over what period? 6 mo. or less _____ , 7 mos.- 2 yrs. _____,

More than 2 yrs. but less than 5 yrs _____, 5 yrs. or more _____.

Describe force used against you (e.g., fist, belt)_____

Were you ever injured? _____ If yes, describe _____

Who did this? (Relationship to you) _____

Has anyone **else** ever done this to you? No _____ Yes _____

8. As an adult, have you ever been kicked, beaten, slapped around or otherwise physically harmed by a romantic partner, date, family member, stranger, or someone else?

No _____ **Yes** _____ If yes, at what age? _____

If yes, how many times? 1 _____, 2-4 _____, 5-10 _____, more than 10_____

If repeated, over what period? 6 mo. or less _____, 7 mos.- 2 yrs. _____, more

than 2 yrs. ____ but less than 5 yrs. _____ , 5 yrs. or more _____.

Describe force used against you (e.g., fist, belt) _____

Were you ever injured?_____ If yes,
describe_____

Who did this? (Relationship to you) _____

If sibling, what age was he/she_____

Has anyone **else** ever done this to you? No_____ Yes _____

9. Has a parent, romantic partner, or family member repeatedly ridiculed you, put you down, ignored you, or told you were no good?

No _____ **Yes** _____ If yes, at what age? _____

If yes, how many times? 1 _____, 2-4 _____, 5-10 _____, more than 10_____

If repeated, over what period? 6 mo. or less _____, 7 mos.- 2 yrs. _____,

more than 2 yrs. ____ but less than 5 yrs. _____ , 5 yrs. or more _____.

Who did this? (Relationship to you) _____

If sibling, what age was he/she_____

Has anyone **else** ever done this to you? No_____ Yes _____

10. Other than the experiences already covered, has anyone ever <u>threatened</u> you with a weapon like a knife or gun?

No _____ **Yes** _____ If yes, at what age? _____

If yes, how many times? 1 _____ , 2-4 _____ , 5-10 _____, more than 10_____

If repeated, over what period? 6 mo. or less _____, 7 mos.- 2 yrs. _____, more

than 2 yrs. ____ but less than 5 yrs. _____, 5 yrs. or more _____.

Describe nature of threat

_____

Who did this? (Relationship to you)

_____

Has anyone **else** ever done this to you? No_____ Yes _____

11. Have you ever been present when another person was killed? Seriously injured? Sexually or physically assaulted?

No _____ **Yes** _____ If yes, at what age? _____

Please describe what you witnessed

_____

Was your own life in danger?

_____

12. Have you ever been in any other situation where you were seriously injured or your life was in danger (e.g., involved in military combat or living in a war zone)?

No_____ **Yes**_____

If yes, at what age? _____ Please describe.
_____

_____
_____

13. Have you ever been in any other situation that was extremely frightening or horrifying, or one in which you felt extremely helpless, that you haven't reported?

No_____ **Yes**_____

If yes, at what age? _____ Please describe.
_____

_____
_____

The interviewer should determine if the respondent is reporting the same incident in multiple questions, and should record it in the most appropriate category.

APPENDIX K