

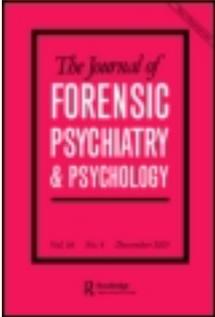
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Offenders as victims: post-traumatic stress disorder and substance use disorder among male prisoners

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Background: Comorbid substance use disorder(s) and post-traumatic stress disorder (SUD-PTSD) is common among prisoners and linked to an increased risk of criminal recidivism; however, little is known about the characteristics of prisoners with this comorbidity. *Aim:* This study provides a preliminary examination of the clinical and criminal profile of male inmates with symptoms of SUD-PTSD, and examines whether this profile differs according to whether a person has experienced a trauma while in prison. *Methods:* Thirty male inmates from two correctional centres in Sydney, Australia, were recruited and assessed using a structured interview. *Results:* The sample reported extensive criminal, substance use and trauma histories. A history of substance dependence was almost universal (90%) and 56.7% met diagnostic criteria for PTSD with the remainder experiencing sub-threshold symptoms. Forty-three per cent reported a traumatic event while in prison. Those who had experienced trauma in prison, compared to those who had not, were more likely to nominate heroin as their main drug of concern and to be receiving drug treatment in prison. There was also a trend toward inmates who had experienced a trauma in prison being more likely than inmates who had no prison trauma to have experienced a physical assault. *Conclusion:* Male prisoners with SUD-PTSD are a high-needs group yet treatment responses are poor. Further research examining treatment options for this comorbidity may improve prisoner well-being and reduce recidivism.

Keywords: post-traumatic stress disorder; substance use disorder; prison; violence; victimisation; trauma

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Introduction

As with other marginalised populations, mental health disorders are substantially more prevalent among prisoners than the general population (Australian Institute of Health and Welfare [AIHW], 2011; Condon, Hek, & Harris, 2007; Butler, Kariminia, Bond, & Trevathan, 2004; Butler et al., 2006; Hockings, Young, Falconer, & O'Rourke, 2002; Fazel & Danesh, 2002; Butler, Indig, Allnut, & Mamoon, 2011). The two most prevalent Axis I disorders among prisoners internationally are substance use disorder(s) (SUD) and post-traumatic stress disorder (PTSD) (Brinded, Simpson, Laidlaw, Fairley, & Malcolm, 2001; Butler & Kariminia, 2005; Butler et al., 2006; Edens, Peters, & Hills, 1997; Teplin, Abram, & McClelland, 1996). Approximately, two-thirds of Australian inmates meet DSM-IV criteria for a current (past-year) SUD, and one-quarter suffer from current PTSD (Butler & Kariminia, 2005; Butler et al., 2006; Goff, Rose, Rose, & Purves, 2007).

The high prevalence of SUD among inmates is not surprising given the high proportion (76% of females and 63% of males) that report that their current sentence is related to drugs (Indig et al., 2010). PTSD on the other hand often goes unrecognised; inmates are widely perceived as perpetrators of traumatising crime, but are rarely thought of as being traumatised themselves (Butler & Kariminia, 2005). There is, however, a substantial literature documenting the frequent occurrence of past victimisation and psychological trauma among both male and female inmates (Gibson et al., 1999; Kubiak, 2004; Teplin et al., 1996). Exposure to traumatic events is nearly universal among inmates with rates of up to 90% exposure for both sexes (Battle, Zlotnick, Najavits, Guttierrez, & Winsor, 2003; Gibson et al., 1999; Harlow, 1999), and most have experienced multiple traumas (Indig et al., 2010).

Consistent with research conducted among community and clinical samples (Kessler, Sonnega, Bromet, & Nelson, 1995; Mills, Teeson, Lynskey, Ross, & Darke, 2005; Mills, Teeson, Ross, & Peters, 2006), SUD and PTSD are not only the most common Axis I disorders among inmates, they also frequently co-occur (SUD-PTSD). Kubiak (2004) found that 55% of male and female inmates entering a prison-based SUD treatment programme met criteria for lifetime PTSD. Furthermore, Zlotnick (1997) found that 68% of their sample of female inmates met criteria for current or lifetime PTSD, and of those 91% reported a history of SUD. In contrast, only 67% of women without PTSD reported a history of SUD (Battle et al., 2003). The mechanisms underlying the co-occurrence of SUD-PTSD are not yet fully understood; however, various explanations have been posited, including self-medication, heritability, social influence and vulnerability factors such as poverty and family history of mental illness. Typically, PTSD occurs prior to onset of SUD, suggesting that substance use may be used to relieve the symptoms of PTSD (Back, Brady, Jannimagi, & Jackson, 2006; Brown, Stout, & Gannon-Rowley, 1998; Chilcoat & Breslau, 1998; Hien et al., 2010; Simpson, 2003; Stewart, Mitchell, Wright,

& Loba, 2004; Stewart, Pihl, Conrod, & Dongier, 1998). Regardless of which disorder came first, however, once comorbid SUD-PTSD is established, both act to maintain or exacerbate the other and their co-occurrence is associated with significant harm (Brown et al., 1998; Mills, 2009). In criminal justice settings, there are often challenging dynamics between prison officers and PTSD-SUD inmates. Correctional staff often lack awareness of how these diagnoses may drive aggressive behaviour, and how the correctional setting itself can be triggering for inmates with PTSD-SUD (e.g. patdowns, strip searches, seclusion, disciplinary actions, loud noises and limited privacy) (Miller & Najavits, 2012).

There is a substantial literature documenting the severe clinical profile of individuals with comorbid SUD-PTSD in the community (Mills et al., 2005; Mills et al., 2006; Najavits, 1999; Najavits & Hien, 2013; Najavits, Weiss, Shaw, & Muenz, 1998; Ouimette, Finney, & Moos, 1999; Villagomez, Meyer, Lin, & Brown, 1995) and the association between this comorbidity and poorer outcomes in terms of substance use, mental health and psychosocial functioning, including criminal involvement (Mills, Teeson, Darke, & Ross, 2007; Najavits, 2007; Ouimette et al., 1999). However, few studies have been carried out among prison samples. Consistent with the findings of clinical and community research, studies that have been conducted among prisoners have found that inmates with SUD-PTSD report extensive trauma histories, severe PTSD and other psychopathology (Lynch, Heath, Matthews, Cepeda, 2011; Salgado, Quinlan, & Zlotnick, 2007; Wolff, Frueh, Shi, & Schuman, 2012; Zlotnick, Johnson, & Najavits, 2009; Zlotnick, Najavits, Rohsenow, & Johnson, 2003). However, all of these studies have been conducted among female inmates. The characteristics of male prisoners with SUD-PTSD remain unknown.

It is also not known what proportion of prisoners with SUD-PTSD have experienced a traumatic event while in prison, and whether the characteristics of these prisoners differ compared to those who have not experienced trauma whilst in prison. Prisons are challenging environments in that inmates are constantly under threat of further traumatisation (Lovell & Jemelka, 1998; Lovell, Johnson, Jemelka, Harris, & Allen, 2001). They are often characterised by a culture of violence in which both inmates and staff use violence, or the threat of violence, to settle conflicts (Toch, 1977). It is likely that the prevalence of prison trauma is high among individuals with SUD-PTSD, as rates of physical victimisation are higher among inmates with a mental health disorder (Teplin, McClelland, Abram, & Weiner, 2005; Wolff & Shi, 2011).

A greater understanding of the clinical and criminal profiles of prisoners with SUD-PTSD is important as the presence of co-occurring disorders such as SUD-PTSD has frequently been linked to relapse to substance use and criminal recidivism (Fazel, Gulati, Linsell, Geddes, & Grann, 2009; Fazel & Yu, 2011; Kubiak, 2004; Messina, Burdon, Hagopian, & Prendergest, 2004; Peters & Petrila, 2004; Wallace et al., 1998). For instance, Kubiak (2004) found female

prisoners with SUD-PTSD were significantly more likely to relapse to substance use compared to those with SUD only. This study also found that a greater proportion of male prisoners with SUD-PTSD were more likely to have sought community aftercare for drug issues and reoffend post-release. Similarly, another study revealed that prisoners with SUD and a comorbid mental health disorder were significantly more likely to reoffend at two-year follow-up. SUD-PTSD was most prevalent comorbidity in this sample (Smith & Trimboli, 2010). The combination of SUD-related symptoms such as impulsivity, aggression and reduced inhibitions, with PTSD symptoms of hypervigilance, irritability and anger in particular, may increase an individual's susceptibility to perpetrate violence (Barrett, Mills, & Teeson, 2011; Lisak & Miller, 2002). Within prisons, such patterns of impulsivity, unpredictability and sometimes erratic behaviour make offenders difficult to manage (Chandler, Peters, Field, & Juliano-Bult, 2004). The resulting incident reports and/or disciplinary actions represent a resource burden to correctional systems, and leads to the demoralisation of staff (Lovell & Jemelka, 1998). It is therefore not surprising that offenders with co-occurring disorders are considered to be one of the most challenging groups encountered in the criminal justice system (Chandler et al., 2004).

The present study aimed to provide a preliminary description of the clinical and criminal profile of a sample of male prison inmates with SUD-PTSD, and conduct a preliminary examination of whether this profile differs according to whether a person has experienced trauma whilst in prison. It was hypothesised that prisoners who reported having suffered a trauma in prison would demonstrate more severe substance use and PTSD, given that they are continually exposed to the environment in which trauma has occurred.

Methods

Procedure

Data were collected between February and October 2011 as part of a pilot randomised controlled trial (RCT) examining the feasibility and preliminary efficacy of an integrated psychological treatment for SUD-PTSD among male prisoners. Male participants were recruited from two correctional centres in Sydney, Australia, via referrals made by corrections and health staff within the prison. Flyers were also distributed within prison health centres. Potential participants were required to meet the following criteria in order to be included in the study: (i) aged 18 years or over; (ii) self-reported history of trauma exposure; (iii) self-reported lifetime problematic substance abuse; (iv) up to nine months remaining on their sentence (to allow for post-treatment follow-up); and (v) screen-positive for current PTSD symptomatology (i.e. responses of 'moderately' or above (score 3–5) for: at least one question for Questions 1–5 (Criterion B); at least three questions for Questions 6–12 (Criterion C); and at least two questions for Questions 13–17 (Criterion D) in accordance with the

PTSD Checklist-Civilian version (PCL-C); (Weathers, Litz, Huska, & Keane, 1994). The PCL-C is the civilian version of a self-report rating scale for assessing the 17 DSM-IV symptoms of PTSD. Those who were currently suicidal, self harming or exhibiting psychosis were excluded from the study as it was considered unethical to include them.

Of the 60 inmates assessed for inclusion to the study, 30 (50%) were eligible to participate. The primary reasons for exclusion were having less than nine months remaining on their custodial sentence (30%); not screening positive for current PTSD symptoms (23.3%); no self-reported problematic substance abuse (16.7%); and 3.3% had current psychotic symptoms. A further 26.7% were excluded as they were being transferred to another prison (26.7%).

Written informed consent was obtained from all participants. All participants were volunteers and were paid AUD\$10 for completing a structured face-to-face interview. Ethical approval was granted by the Justice Health Human Ethics Research Committee and the Corrective Services NSW Ethics Committee and ratified by the University of New South Wales and the University of Western Sydney ethics committees.

Structured interview

A structured face-to-face interview was administered which gathered information pertaining to demographic characteristics, criminal and prison history, trauma exposure, PTSD diagnosis and symptom severity, post-traumatic cognitions, substance use and dependence and treatment history. Demographic characteristics were assessed using measures based on the NSW Inmate Health Survey (IHS) (Indig et al., 2010). Characteristics assessed included age, ethnicity, education, tertiary qualifications, employment status (six months prior to custody) and marital status. Items relating to criminal and prison history questions were based on those used in Australian Institute of Criminology Drug Use Careers of Offenders (DUCO) project (Australian Institute of Criminology [AIC], 2001). Participants were asked to indicate whether they had ever committed the following offenses: motor vehicle theft, property crime, buying and selling of illegal drugs, fraud/embezzlement, trading in stolen goods, physical assault, sexual assault, robbery with and without a weapon and murder/manslaughter. With regards to prison history, participants were asked whether they had spent time in a juvenile detention facility and on how many occasions, and the number of times they had entered a prison facility as an adult.

Trauma exposure was assessed using the Composite International Diagnostic Interview (CIDI) version 2.1 (World Health Organisation [WHO], 1997). Participants were asked to indicate whether or not they had experienced any of the events listed in Table 1. If participants confirmed having experienced any of these traumatic events, they were also asked at what age they first experienced each trauma type, the number of times (or duration in

Table 1. Trauma types within group differences for those who did vs. did not experience a trauma in prison.

	Prison trauma (<i>n</i> = 13)	No prison trauma (<i>n</i> = 17)	Test statistic
Serious physical attack/assault (%)	100	70.6	<i>p</i> = .05, FET
Threatened with a weapon/kidnapped (%)	61.5	70.6	<i>p</i> = .71, FET
Witness a serious injury or death (%)	61.5	82.4	<i>p</i> = .24, FET
Life threatening accident (%)	53.8	52.9	$\chi^2 = .02$, <i>df</i> = 1, <i>p</i> = .96
Raped/sexually assaulted (%)	46.2	47.1	$\chi^2 = .02$, <i>df</i> = 1, <i>p</i> = .96
Witness rape/sexual assault (%)	30.8	5.9	<i>p</i> = .14, FET
Fire, flood or natural disaster (%)	23.1	0	<i>p</i> = .07, FET
Other traumatic event (%)	23.1	17.6	<i>p</i> = 1.0, FET
Combat experience in a war (%)	15.4	11.8	<i>p</i> = 1.0, FET
Close person has been raped, tortured, kidnapped (%)	15.4	29.4	<i>p</i> = .43, FET
Tortured (%)	7.7	0	<i>p</i> = .433, FET

months) they experienced the trauma and whether any of these events took place in a custodial (prison) setting. Participants that responded having experienced multiple traumatic events were asked which event was the ‘most stressful or upsetting’. Past-month DSM-IV diagnoses and severity of PTSD symptoms were assessed for the event nominated as most traumatic using the Clinician-Administered PTSD Scale (CAPS) (Blake et al., 1990). CAPS scores were categorised as: ‘a symptomatic/few symptoms’ (0–19), ‘mild PTSD/subthreshold’ (20–39), ‘moderate PTSD/subthreshold’ (40–59), ‘severe PTSD’ (60–79) and ‘extreme PTSD’ (80 or above) (Blake et al., 2000). PTSD diagnoses were determined using DSM-IV criteria (i.e. the presence of one or more re-experiencing symptoms, three or more avoidance symptoms and two or more hyperarousal symptoms).

Questions regarding lifetime substance use were based on the IHS (Indig et al., 2010). Age of initiation, use in month prior to custody and use whilst within custody were asked for the following drug types: cannabis, heroin, cocaine, ecstasy, hallucinogens, and inhalants, as well as prescribed and non-prescribed other opiates, amphetamines, benzodiazepines, antidepressants and other drugs (e.g. antipsychotics). Participants were also asked to nominate their primary drug of concern. DSM-IV diagnoses of lifetime substance dependence were determined for participants’ primary drug of concern using the WMH-CIDI version 3.0 (Kessler & Ustun, 2004). Participants were also asked about their current and lifetime use of drug and PTSD treatment services.

Statistical analyses

Appropriate measures of central tendency and variance are provided to describe the characteristics of the sample. The sample was further divided into two groups based on whether or not participants had experienced trauma whilst in prison (prison trauma vs. no prison trauma). Between-group comparisons of categorical variables were analysed using chi squared tests (χ^2) or Fishers exact test (FET) where there was an expected cell count of less than five. For normally distributed continuous variables, *t*-tests were employed and means (*M*) with their standard deviations (SD) reported. Where continuous variables were skewed (i.e. skewness $> \pm 1$ or kurtosis $> \pm 3$), medians and the corresponding range of responses were reported and Mann–Whitney *U*-tests conducted. All analyses were conducted using SPSS for Windows, version 20.0 (IBM SPSS Inc, IL, 2011).

Results

Demographic characteristics

The sample of 30 male prisoners had a median age of 34.5 years (range 22–65 years). The vast majority (93.3%) were Australian born, and 23.3% identified as Aboriginal and/or Torres Strait Islander. Sixty-seven per cent reported never having been married. Fifty-seven per cent of the sample left school before year 10 and 63.3% were unemployed in the six months prior to the commencement of their current prison sentence.

The sample was divided into those that had experienced a trauma in prison (prison trauma, $n = 13$, 43.3%) and those that had not experienced a trauma in prison (no prison trauma, $n = 17$, 56.7%). The only significant between group difference in demographics was the current age of participants; individuals who had experienced a trauma while in prison were significantly older than participants who had not (38 years, range 27–65 vs. 30 years, range 22–65; $U = 159.50$, $df = 1$, $p = .039$); however, the difference between groups educational qualifications (that is the attainment of any post-school qualifications) also bordered on significance (prison trauma: 23.1% vs. no prison trauma: 58.8%; $\chi^2 = 3.83$, $df = 1$, $p = .05$).

Criminal and prison history

All participants reported a criminal history including: buying illicit drugs (93.3%), stealing from a person/place (70.0%), break, enter or steal (66.7%), selling/trading stolen goods (66.7%), perpetrating physical assault (66.7%), stealing a motor vehicle (66.7%), vandalising property (50.0%), selling illicit drugs (43.3%), robbery without a weapon (40.0%), fraud and/or embezzlement (33.3%), robbery with a weapon (30.0%), committing a sexual offense (20.0%) and murder/manslaughter (6.7%). Participants reported having committed a

mean of 6.50 (SD 2.98) different crime types over their lifetime. There were no significant differences found between those who had experienced a trauma in prison and those who had not in terms of the number of lifetime offense types reported or the types of crimes reported.

Forty-three per cent of participants reported a juvenile history of incarceration (mean of 5.15 episodes, SD 4.24) and 73.3% reported a history of adult incarceration (median of three episodes, range 1–12). The median age of first custodial detainment (juvenile or adult) was 15 years (range 9–58). There was no significance between group differences in the odds of having been in juvenile detention or the median number of stays in juvenile detention. However, individuals who had experienced a trauma while in prison reported a significantly higher number of adult incarcerations compared to those who had not (6.5, range 2–12 vs. 3.0, range 1–7; $U = 122$, $df = 1$, $p = .008$).

Trauma exposure

The mean age of first trauma exposure was 13 years (SD 5.82) and the mean number of trauma types experienced was 4.1 (SD 1.84). The most common types of traumas experienced were having been physically attacked or assaulted (83.3%) and having witnessed someone being badly injured or killed (73.3%). Other traumas reported included having been threatened with a weapon, held captive or kidnapped (66.7%), involved in a life threatening accident (53.3%), having been raped or sexually assaulted (46.7%), having been sexually molested (23.3%), having witnessed rape or sexual assault (16.7%), being involved in direct combat in a war (13.3%), having been involved in a fire, flood or other natural disaster (10.0%) and having experienced torture (3.3%).

The median number of trauma types and the proportion of participants who had experienced each trauma type did not differ between groups; however, having experienced a serious physical attack and/or assault approached significance (prison trauma: 100% vs. no prison trauma: 70.6%; $p = .052$, FET).

Post-traumatic stress disorder

Fifty-seven per cent of participants met DSM-IV criteria for a diagnosis for current PTSD and the mean CAPS score was 57.5 (SD 21.14). The mean duration of symptoms was 154.3 months (SD 155.31) or approximately 13 years. The proportion of participants diagnosed with PTSD did not differ significantly by experiencing trauma in prison, nor was there a significant difference in relation to PTSD symptom severity (i.e. total CAPS scores).

Substance use and dependence

The most endorsed primary drug of concern was alcohol (36.7%) followed by heroin (26.7%), amphetamines (16.7%), cannabis (13.3%) and cocaine (6.7%).

There were no between-group differences in the number or types of substances used in the month prior to incarceration. However, those who had experienced trauma in prison were more likely to nominate heroin as their primary drug of concern compared to those who had not experienced trauma in prison (46% vs. 12%; $\chi^2 = 4.46$, $df = 1$, $p = .035$).

No other between-group differences were found in relation to any other substance use variable. Almost all participants (90%) met DSM-IV criteria for a lifetime diagnosis of substance dependence and 50% reported a history of injecting drug use. The mean number of substance types used by participants in their lifetime was 5.40 (SD 2.25), and 2.03 (SD 1.54) in the month prior to incarceration.

The only illicit substances reportedly used in this period of incarceration were cannabis (40%) and heroin (10%). Prescribed use of the following medications in this custodial period was also reported: antidepressants (46.7%), opiates (40%), benzodiazepines (16.7%) and antipsychotic medication (13.0%). Non-prescribed use of these medications was also mentioned at the following rates: non-prescription antidepressants (10%), non-prescription opiates (6.7%) and non-prescription antipsychotics (6.7%).

Treatment history

Sixty per cent of the sample reported having ever been assessed or treated for a mental health issue. Thirty-seven per cent reported that this was in relation to PTSD. Only 16.7% reported currently receiving mental health treatment or assessment of which only 7% reported this to be for PTSD. Most participants receiving current treatment for a mental health issue included being prescribed medications. Forty-one per cent of the sample reported currently receiving treatment for their substance use. The two main forms of drug treatment reported were Opioid Substitution Treatment (26.7%) and SMART¹ group sessions (13.3%). Only one participant reported attending alcohol and drug counselling sessions weekly. There was a significant difference found for current drug treatment provision with those who experienced a trauma in prison significantly more likely to be receiving drug treatment than those that had not experienced a trauma in prison (66.7% vs. 23.5%, $p = 0.029$, FET).

Discussion

The present study was able to provide a profile of the clinical and criminogenic characteristics of male prisoners with symptoms of comorbid SUD-PTSD. It also describes whether the profile differed according to whether the trauma had been experienced during incarceration. The demographic and criminogenic profile of this sample of male prisoners was broadly consistent with that of the larger Australian male prisoner population (AIHW, 2011). The patterns of substance use reported by the sample were also consistent with the broader prisoner population with high rates of self-reported alcohol and illicit drug use

(Belcher, Butler, Richmond, Wodak, & Wilhelm, 2006; Butler, Levy, Dolan, & Kaldor, 2003; Hockings et al., 2002).

The demographic and criminal histories of the sample are also remarkably similar to those found in studies of incarcerated females with SUD-PTSD (Salgado et al., 2007; Wolff et al., 2012; Zlotnick et al., 2003; Zlotnick et al., 2009). Consistent with these studies, the males in this sample reported extensive drug use histories; however, the types of drugs used differed. Studies of female prisoners with SUD-PTSD have reported more problematic cocaine use (Zlotnick et al., 2003; Zlotnick et al., 2009), whereas the males in this study were most likely to nominate alcohol as their primary drug of concern, only a small proportion (13.3%) reported using cocaine in the month prior to incarceration. This difference is, however, most likely due to availability and price differences in the different drug classes in Australia compared with the United States (United Nations Office on Drugs and Crime [UNODC], 2012; Maxwell & Davey, 1997), where all studies of female prisoners with SUD-PTSD have been conducted.

The extensive trauma histories found in this study were also consistent with those reported in samples of female prisoners with SUD-PTSD; however, there appeared to be variation in the types of traumas experienced. Studies of incarcerated SUD-PTSD female samples have reported higher rates of sexual assault which predominantly occurred in childhood (Salgado et al., 2007; Wolff et al., 2012), whereas the males in the present study reported higher rates of physical assault which occurred in (early) adulthood. It is important to note, however, that the prevalence of sexual assault among this sample of male prisoners was nonetheless high (46.7%).

Apart from the focus on male prisoners, the present study was novel in that it examined the prevalence of prison-based trauma exposure. Forty-three per cent of the sample reported experiencing a trauma while in prison, most commonly experiencing a serious physical assault, witnessing a serious physical assault, and experiencing a sexual assault. By way of comparison, 34% of male prisoners in New South Wales and Queensland have been found to have experienced physical assault (Schneider et al., 2011). The disparity between these findings may reflect the broader scope of the present study with regard to the types of traumas assessed; however, these findings are also consistent with studies indicating that prisoners with mental illness are at increased risk of victimisation (Austin, Fabelo, Gunter, & McGinnis, 2006; Blitz, Wolff, & Shi, 2008; Crisanti & Frueh, 2011; Dumond, 2003; Kubiak, 2004; Wolff et al., 2007). Unfortunately, the present study did not enquire about the source or perpetrator of these traumas (i.e. inmate-on-inmate or staff-on-inmate). It is recommended that this information be collected in future research to better inform future policy regarding prisoner safety.

Violence in prisons presents a threefold challenge to custodial authorities. It poses the risk of injury to prisoners and staff, and impacts on the provision of services, staffing and contact between inmates (Butler & Kariminia, 2005). Also, it impacts on rehabilitation as the physical and sexual traumas that occur

in prison, as found in this study, play a role in combination with other criminogenic factors, in the formation and maintenance of offending behaviour (Widom & Maxfield, 2001). It is because of this widespread impact that it is necessary to address this issue.

The significant study finding that those who had experienced a trauma in prison corroborates the limited literature in the area of ageing prisoners and prison violence, which suggests that older prisoners are considered at the greatest risk of prison victimisation because of their decreasing ability to defend themselves against younger prisoners or staff (Dawes, 2009). It could be argued, however, that the positive association between age and trauma is related to older participants having greater opportunity for exposure to occur. Indeed, although data on the length of time spent in prison were not collected, participants who had experienced a trauma in prison also reported more stays in adult detention. Apart from this difference in the number of episodes of adult incarceration, no other significant differences were found between individuals who had and individuals who had not experienced trauma while in prison with regard to criminal history. Similarly, no significant differences were found between groups in relation to trauma history; however, there was a trend toward a higher prevalence of serious physical attack or assault among individuals who had experienced a trauma in prison, with this difference approaching significance ($p = .52$). This is not surprising given the high prevalence of physical assault documented in prison settings (Kupers, 1996; Schneider et al., 2011; Stephan & Karberg, 2003; Toch, 1998; Websdale & Chesney-Lind, 1998; Wolff et al., 2007; Wolff & Shi, 2011).

The other significant finding that a higher proportion of individuals who had experienced trauma nominated heroin as their main drug of concern is also the likely explanation for the higher prevalence of drug treatment among this group, as opioid substitution therapy (e.g. methadone maintenance) is the primary form of drug treatment available in prison (Dolan & Wodak, 1996; Kastelic, Pont, & Stover, 2008; Larney & Dolan, 2009). It is possible that these individuals are using heroin to self-medicate their trauma-related symptoms (Khantzian, 1985) or that their lifestyle associated with their heroin use puts them at increased risk for experiencing trauma (Stewart et al., 1998). Nevertheless, this finding suggests a clinical opportunity for drug treatment clients to be assessed for PTSD or trauma that has occurred in a prison context.

The overall prevalence of a PTSD diagnosis in the present sample was 56.7%. Furthermore, the mean CAPS score of the sample (57.5) indicated that participants PTSD symptoms tended to be in the moderate/sub-threshold range. Future studies should employ full diagnostic interviews to determine eligibility, rather than PTSD screeners to ensure that they capture individuals who meet full criteria for PTSD. It is important to recognise, however, that even though the prevalence of full PTSD in the present study was lower compared to previous studies, research has shown sub-threshold PTSD and full PTSD to be

associated with equivalent levels of impairment (Wolff et al., 2012; Zlotnick, 2002; Zlotnick et al., 2009).

The prison environment has the potential to be seen as a unique opportunity to intervene. Prison may be one of the few opportunities for those in the community who have chaotic lives to access treatment services that can attend to their complex needs (Butler et al., 2006; Ogloff, 2002). Intervening at this time may also help to reduce the risk of relapse and criminal recidivism post-release, for which prisoners with SUD-PTSD are at greater risk (Fazel et al., 2009; Fazel & Yu, 2011; Kubiak, 2004; Messina et al., 2004; Wallace et al., 1998). Indeed, interventions targeting SUD-PTSD have been trialled among prisoners and have shown to be effective in reducing PTSD symptoms and substance use in these samples (Zlotnick et al., 2003; Zlotnick et al., 2009). Further research examining the efficacy of such interventions in larger prison samples is warranted. This may serve to lessen the health disparity between prisoners and the general community and reduce the burden on strained financial correctional resources.

Limitations of this study include its preliminary nature and small number of participants. Lack of differences observed may be due to insufficient power rather than the true absence of differences between groups. Further studies with larger samples are required. The sample did not include prisoners with more severe presentations such as prisoners in crisis units or with active suicidal ideation. Therefore, the present study may underestimate the severity of the clinical profile seen among male prisoners with SUD-PTSD. Findings also cannot be generalised to female prisoners.

Another issue to consider with this sample includes the subjective nature of assessment by self-report which may incur under-reporting and malingering (i.e. intentional exaggeration). The possibility of the occurrence of under-reporting may be due to social desirability concerns by the participant or fear of punitive consequences for admitting drug use or experiencing a trauma during incarceration; on the other hand, external influences such as avoiding criminal responsibility or compensation can prompt malingering (Peace & Masliuk, 2011). In relation to trauma, difficulties may be experienced recalling the actual event due to gaps in recall and disorganisation of details of the narrative (Havey & Bryant, 1999; Tromp, Koss, Figueredo, & Tharan, 1995). There is evidence to suggest that prisoner samples that have suffered trauma and have substance abuse issues can be reliable respondents for research studies (Darke, 1998; Mills et al., 2007).

Despite these limitations, the present study contributes to the literature by providing much needed information, previously overlooked, about the unique mental health needs of male prisoners with comorbid SUD-PTSD and trauma that occurs in the prison context. In summary, male prisoners with SUD-PTSD are a vulnerable group within the prison system with complex treatment needs yet despite their vulnerability and the severity of their clinical profile, they receive little by way of treatment that could ultimately lead to reduced

recidivism upon release and improvement to prisoner safety and psychological well-being.

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Note

1. SMART Recovery Australia is a Self Management and Recovery Training. In the community it is a self-help group that assists recovery from addictive behaviours including alcohol & drugs, gambling, food, shopping, etc. SMART Recovery teaches practical skills to help address problems to abstain and achieve a healthy lifestyle balance.

References

- Austin, J., Fabelo, T., Gunter, A., & McGinnis, K. (2006). *Sexual violence in the Texas prison system*. Washington, DC: JFA Institute.
- Australian Institute of Criminology. (2001). *Drug use careers of offenders (DUCO) project questionnaire*. Canberra: Author.
- Australian Institute of Health and Welfare. (2011). *The health of Australia's prisoners 2010*. Cat. No. Phe 149. Canberra: Author.
- Back, S., Brady, K., Jaanimägi, U., & Jackson, J. (2006). Cocaine dependence and PTSD: A pilot study of symptom interplay and treatment preferences. *Addictive Behaviors, 31*, 351–354.
- Barrett, E.M., Mills, K.M., & Teesson, M. (2011). Hurt people who hurt people: Violence amongst individuals with comorbid substance use disorder and post traumatic stress disorder. *Addictive Behaviors, 36*, 721–728.
- Battle, C.L., Zlotnick, C., Najavits, L.M., Gutierrez, M., & Winsor, C. (2003). Posttraumatic stress disorder and substance use disorder among incarcerated women. In P.C. Ouimette & P.J. Brown (Eds.), *Trauma and substance abuse: Causes, consequences, and treatment of comorbid disorders* (pp. 209–225). Washington, DC: American Psychological Association.
- Belcher, J., Butler, T., Richmond, R., Wodak, A., & Wilhelm, K. (2006). Smoking and its correlates in an Australian prisoner population. *Drug and Alcohol Review, 25*, 343–348.
- Blake, D., Weathers, F., Nagy, L., Kaloupek, D., Klauminzer, G., Charney, D., & Keane, T. (1990). A Clinician rating scale for assessing current and lifetime PTSD: The CAPS-1. *The Behavior Therapist, 13*, 187–188.
- Blake, D., Weathers, F., Nagy, L., Kaloupek, D., Klauminzer, G., Charney, D., ... Buckley, T. (2000). *Clinician-administered PTSD scale (CAPS) instruction manual*. Boston, MA: National Center for Post-Traumatic Stress Disorder, Behavioral Science Division-Boston, VA.
- Blitz, C., Wolff, N., & Shi, J. (2008). Physical victimization in prison: The role of mental illness. *International Journal of Law & Psychiatry, 31*, 385–393.
- Bridged, P., Simpson, A., Laidlaw, T., Fairley, N., & Malcolm, F. (2001). Prevalence of psychiatric disorders in New Zealand prisons: A national study. *Australian and New Zealand Journal of Psychiatry, 35*, 166–173.

- Brown, P., Stout, R., & Gannon-Rowley, J. (1998). Substance use disorder-PTSD comorbidity: Patients' perceptions of symptom interplay and treatment issues. *Journal of Substance Abuse Treatment, 14*, 1–4.
- Butler, T., Andrews, G., Allnutt, S., Sakashita, C., Smith, N., & Basson, J. (2006). Mental disorders in Australian prisoners: A comparison with a community sample. *Australian and New Zealand Journal of Psychiatry, 40*, 272–276.
- Butler, T., Indig, D., Allnutt, S., & Mamoon, H. (2011). Co-occurring mental illness and substance use disorder among Australian prisoners. *Drug and Alcohol Review, 30*, 188–194.
- Butler, T., & Kariminia, A. (2005). Prison Violence: Perspectives and Epidemiology. *NSW Public Health Bulletin, 17*, 17–20.
- Butler, T., Kariminia, A., Bond, J., & Trevathan, L. (2004). Injury surveillance in the New South Wales prison system. *Australian Journal of Health Promotion, 15*, 146–149.
- Butler, T., Levy, M., Dolan, K., & Kaldor, J. (2003). Drug use and its correlates in an Australian prisoner population. *Addiction Research & Theory, 11*, 89–101.
- Chandler, R., Peters, R., Field, G., & Juliano-Bult, D. (2004). Challenges in implementing evidence-based treatment practices for co-occurring disorders in the criminal justice system. *Behavioral Sciences & the Law, 22*, 431–448.
- Chilcoat, H., & Breslau, N. (1998). Posttraumatic stress disorder and drug disorders. *Archives of General Psychiatry, 55*, 913–917.
- Condon, L., Hek, G., & Harris, F. (2007). A review of prison health and its implications for primary care nursing in England and Wales: The research evidence. *Journal of Clinical Nursing, 16*, 1201–1209.
- Crisanti, A.S., & Frueh, B.C. (2011). Risk of trauma exposure among persons with mental illness in jails and prisons. *Current Opinion in Psychiatry, 24*, 431–435.
- Darke, S. (1998). Self-report among injecting drug users: A review. *Drug and Alcohol Dependence, 51*, 253–263.
- Dawes, J. (2009). Ageing prisoners: Issues for social work. *Australian Social Work, 62*, 258–271.
- Dolan, K., & Wodak, A. (1996). An international review of methadone provision in prisons. *Addiction Research & Theory, 4*, 85–97.
- Dumond, R.W. (2003). Confronting America's most ignored crime problem: The prison rape elimination act of 2003. *Journal of the American Academy of Psychiatry and the Law, 31*, 354–360.
- Edens, J., Peters, R., & Hills, H. (1997). Treating prison inmates with co-occurring disorders: An integrative review of existing programs. *Behavioral Sciences & the Law, 15*, 439–457.
- Fazel, S., & Danesh, J. (2002). Serious mental disorder in 23000 prisoners: A systematic review of 62 surveys. *The Lancet, 359*, 545–550.
- Fazel, S., Gulati, G., Linsell, L., Geddes, J., & Grann, M. (2009). Schizophrenia and violence: Systematic review and meta-analysis. *PLOS Medicine, 6*, 1–16.
- Fazel, S., & Yu, R. (2011). Psychotic disorders and repeat offending: Systematic review and meta-analysis. *Schizophrenia Bulletin, 37*, 800–810.
- Gibson, L., Holt, J., Fondacaro, K., Tang, T., Powell, T., & Turbitt, E. (1999). An examination of antecedent traumas and psychiatric comorbidity among male inmates with PTSD. *Journal of Traumatic Stress, 12*, 473–484.
- Goff, A., Rose, E., Rose, S., & Purves, D. (2007). Does PTSD occur in sentenced prison populations? A systematic literature review. *Criminal Behaviour and Mental Health, 17*, 152–162.
- Harlow, C. (1999). *Prior abuse reported by inmates and probationers*. Washington, DC: US Department of Justice, Bureau of Justice Statistics.

- Havey, A.G., & Bryant, R.A. (1999). A qualitative investigation of the organization of traumatic memories. *British Journal of Clinical Psychology*, 38, 401–405.
- Hien, D., Jiang, H., Campbell, A., Hu, M., Miele, G.M., Cohen, L.R., ... Suarez-Morales, L. (2010). Do treatment improvements in PTSD severity affect substance use outcomes? A secondary analysis from a randomized clinical trial in NIDA's clinical trials network. *American Journal of Psychiatry*, 167, 95–101.
- Hockings, B., Young, M., Falconer, A., & O'Rourke, P. (2002). *Queensland women prisoners' health survey*. Brisbane: Department of Corrective Services.
- Indig, D., Topp, L., Ross, B., Mamoon, H., Kumar, S., & McNamara, M. (2010). *2009 NSW Inmate Health Survey: Key findings report*. Sydney: Justice Health.
- Kastelic, A., Pont, J., Stover, H. (2008). *Opioid substitution treatment in custodial settings*. *Bis-Verlag der Carl von Osietzky Universitat Oldenburg*. Retrieved July 29, 2012, from http://www.unodc.org/documents/balticstates/Library/PrisonSettings/OST_in_Custodial_Settings.pdf
- Kessler, R., Sonnega, A., Bromet, E., & Nelson, C. (1995). Posttraumatic stress disorder in the national comorbidity survey. *Archives of General Psychiatry*, 52, 1048–1060.
- Kessler, R., & Üstün, T. (2004). The World Mental Health (WMH) survey initiative version of the World Health Organization (WHO) composite international diagnostic interview (CIDI). *International Journal of Methods in Psychiatric Research*, 13, 93–121.
- Khantzian, E.J. (1985). The self-medication hypothesis of addictive disorders: Focus on heroin and cocaine dependence. *The American Journal of Psychiatry*, 142, 1259–1264.
- Kubiak, S. (2004). The effects of PTSD on treatment adherence, drug relapse, and criminal recidivism in a sample of incarcerated men and women. *Research on Social Work Practice*, 14, 424–433.
- Kupers, T.A. (1996). Trauma and its sequelae in male prisoners: Effects of confinement, overcrowding, and diminished services. *American Journal of Orthopsychiatry*, 66, 189–196.
- Larney, S., & Dolan, K. (2009). A literature review of international implementation of opioid substitution treatment in prisons: Equivalence of care? *European Addiction Research*, 15, 107–112.
- Lisak, D., & Miller, P.M. (2002). Childhood trauma, posttraumatic stress disorder, substance abuse, and violence. In P. Ouimette & P.J. Brown (Eds.), *Trauma and substance abuse: Causes, consequences, and treatment of comorbid disorders* (pp. 73–87). Washington, DC: American Psychological Association.
- Lovell, D., & Jemelka, R. (1998). Coping with mental illness in prisons. *Family & Community Health*, 21, 54–66.
- Lovell, D., Johnson, C., Jemelka, R., Harris, V., & Allen, D. (2001). Living in prison after residential mental health treatment: A program follow-up. *The Prison Journal*, 81, 473–490.
- Lynch, S., Heath, N.M., Matthews, K.C., & Cepeda, G.J. (2011). Seeking safety: An intervention for trauma exposed incarcerated women? *Journal Trauma and Dissociation*, 13, 88–101.
- Maxwell, J.C., & Davey, J.D. (1997). *Comparison of patterns of illicit drug use in Australia and the United States*. Austin, TX: Texas Commission on Alcohol and Drug Abuse.
- Messina, N., Burdon, W., Hagopian, G., & Prendergast, M. (2004). One year return to custody rates among co-disordered offenders. *Behavioral Sciences & the Law*, 22, 503–518.
- Miller, N.L., & Najavits, L.M. (2012). Creating trauma-informed correctional care: A balance of goals and environment. *European Journal of Psychotraumatology*, 3, 1–8. doi:10.3402/ejpt.v3403i3400.17246

- Mills, K.M. (2009). 'Between pain and nothing, I choose nothing': Trauma, post-traumatic stress disorder and substance use. *Addiction*, *104*, 1607–1609.
- Mills, K.M., Lynskey, M., Teesson, M., Ross, J., & Darke, S. (2005). Post-traumatic stress disorder among people with heroin dependence in the Australian treatment outcome study (ATOS): Prevalence and correlates. *Drug and Alcohol Dependence*, *77*, 243–249.
- Mills, K.M., Teesson, M., Ross, J., & Peters, L. (2006). Trauma, PTSD, and substance use disorders: Findings from the Australian national survey of mental health and well-being. *American Journal of Psychiatry*, *163*, 652–658.
- Mills, K.M., Teesson, M., Darke, S., & Ross, J. (2007). Reliability of self-reported trauma exposure among people with heroin dependence: A longitudinal investigation. *Journal of Traumatic Stress*, *20*, 313–323.
- Najavits, L.M. (1999). Seeking safety: A new cognitive-behavioral therapy for PTSD and substance abuse. *National Center for Post-traumatic Stress Disorder Clinical Quarterly*, *8*, 42–45.
- Najavits, L.M. (2007). *Seeking safety: An evidence-based model for substance abuse and trauma/PTSD*. San Diego, CA: Elsevier Press.
- Najavits, L.M., & Hien, D.A. (2013). Helping vulnerable populations: A comprehensive review of the treatment outcome literature on substance use disorder and PTSD. *Journal of Clinical Psychology*, *69*, 433–479.
- Najavits, L.M., Weiss, R.D., Shaw, S.R., & Muenz, L. (1998). Seeking safety: Outcome of a new cognitive-behavioral psychotherapy for women with posttraumatic stress disorder and substance dependence. *Journal of Traumatic Stress*, *11*, 437–456.
- Ogloff, J.R.P. (2002). Identifying and accommodating the needs of mentally ill people in gaols and prisons. *Psychiatry, Psychology and Law*, *9*, 1–33.
- Ouimette, P., Finney, J., & Moos, R. (1999). Two-year posttreatment functioning and coping of substance abuse patients with posttraumatic stress disorder. *Psychology of Addictive Behaviors*, *13*, 105–114.
- Peace, K.A., & Masliuk, K.A. (2011). Do motivations for malingering matter? Symptoms of malingered PTSD as a function of motivation and trauma type. *Psychological Injury and Law*, *4*, 44–55.
- Peters, R., & Petrila, J. (2004). Introduction to this issue: Co-occurring disorders and the criminal justice system. *Behavioral Sciences & the Law*, *22*, 427–429.
- Salgado, D., Quinlan, K., & 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. *Journal of Trauma & Dissociation*, *8*, 9–26.
- Schneider, K., Richters, J., Butler, T., Yap, L., Richards, A., Grant, L., ... Donovan, B. (2011). Psychological distress and experience of sexual and physical assault among Australian prisoners. *Criminal Behaviour and Mental Health*, *21*, 333–349.
- Simpson, T. (2003). Childhood sexual abuse, PTSD, and the functional roles of alcohol use among women drinkers. *Substance Use & Misuse*, *38*, 249–270.
- Smith, N., & Trimboli, L. (2010). *Co-morbid substance and non-substance mental health disorders and re-offending among NSW prisoners*. Sydney: NSW Bureau of Crime Statistics and Research.
- Stephan, J.J., & Karberg, J.C. (2003). *Census of state and federal correctional facilities 2000* (No. NCJ 198272). Washington, DC: US Department of Justice, Bureau of Justice Statistics.
- Stewart, S., Mitchell, T., Wright, K., & Loba, P. (2004). The relations of PTSD symptoms to alcohol use and coping drinking in volunteers who responded to the Swissair Flight 111 airline disaster. *Journal of Anxiety Disorders*, *18*, 51–68.

- Stewart, S., Pihl, R., Conrod, P., & Dongier, M. (1998). Functional associations among trauma, PTSD, and substance-related disorders. *Addictive Behaviors*, 23, 797–812.
- Teplin, L., Abram, K., & McClelland, G. (1996). Prevalence of psychiatric disorders among incarcerated women. *Archives of General Psychiatry*, 53, 505–512.
- Teplin, L., McClelland, G., Abram, K., & Weiner, D. (2005). Crime victimization in adults with severe mental illness. *Archives of General Psychiatry*, 62, 911–921.
- Toch, H. (1977). *Police, prisons and the problem of violence*. Rockville, MD. and Washington, DC: National Institute of Mental Health, Centre for Studies of Crime and Delinquency.
- Toch, H. (1998). Psychopathy or antisocial personality disorder in forensic settings. In T. Millon, E. Simonsen, M. Birket-Smith, & R.D. Davis (Eds.), *Psychopathy: Antisocial, criminal, and violent behavior* (pp. 144–158). New York, NY: Guilford Press.
- Tromp, S., Koss, M., Figueredo, A., & Tharan, M. (1995). Are rape memories different? A comparison of rape, other unpleasant, and pleasant memories among employed women. *Journal of Traumatic Stress*, 8, 607–627.
- United Nations Office on Drugs and Crime. (2012). *World drug report 2012*. (Sales No. E.12.XI.1). Vienna: United Nations publication.
- Villagómez, R., Meyer, T., Lin, M., & Brown, L. (1995). Post-traumatic stress disorder among inner city methadone maintenance patients. *Journal of Substance Abuse Treatment*, 12, 253–257.
- Wallace, C., Mullen, P., Burgess, P., Palmer, S., Ruschena, D., & Browne, C. (1998). Serious criminal offending and mental disorder. Case linkage study. *The British Journal of Psychiatry*, 172, 477–484.
- Weathers, F., Litz, B., Huska, J., & Keane, T. (1994). *PCL-C for DSM-IV*. Boston, MA: National Center for PTSD-Behavioral Science Division.
- Websdale, N., & Chesney-Lind, M. (1998). Doing violence to women. In L.H. Bowker (Ed.), *Masculinities and violence* (pp. 55–81). London: Sage.
- Widom, C.S., & Maxfield, M. (2001, February). *An update on the 'Cycle of violence'*. *Research in Brief*. Washington, DC: National Institute of Justice.
- Wolff, N., Blitz, C.L., & Shi, J. (2007). Rates of sexual victimization in prison for inmates with and without mental disorders. *Psychiatric Services*, 58, 1087–1094.
- Wolff, N., Frueh, B.C., Shi, J., & Schumann, B.E. (2012). Effectiveness of cognitive-behavioral trauma treatment for incarcerated women with mental illnesses and substance abuse disorders. *Journal of Anxiety Disorders*, 26, 703–710.
- Wolff, N., & Shi, J. (2011). Experience of male and female inmates in prison: The patterns of victimization and feelings of safety inside. *Crime & Delinquency*, 57, 29–55.
- World Health Organisation. (1997). *Composite international diagnostic interview (CIDI), version 2.1*. Geneva: Author.
- Zlotnick, C. (1997). Posttraumatic stress disorder (PTSD), PTSD comorbidity, and childhood abuse among incarcerated women. *The Journal of Nervous & Mental Disease*, 185, 761–763.
- Zlotnick, C. (2002). *Treatment of incarcerated women with substance abuse and post-traumatic stress disorder*, Final report (#195165). Rockville, MD: NCJRS.
- Zlotnick, C., Johnson, J., & Najavits, L. (2009). Randomized controlled pilot study of cognitive-behavioral therapy in a sample of incarcerated women with substance use disorder and PTSD. *Behavior Therapy*, 40, 325–336.
- Zlotnick, C., Najavits, L., Rohsenow, D., & Johnson, D. (2003). A cognitive-behavioral treatment for incarcerated women with substance abuse disorder and posttraumatic stress disorder: Findings from a pilot study. *Journal of Substance Abuse Treatment*, 25, 99–105.