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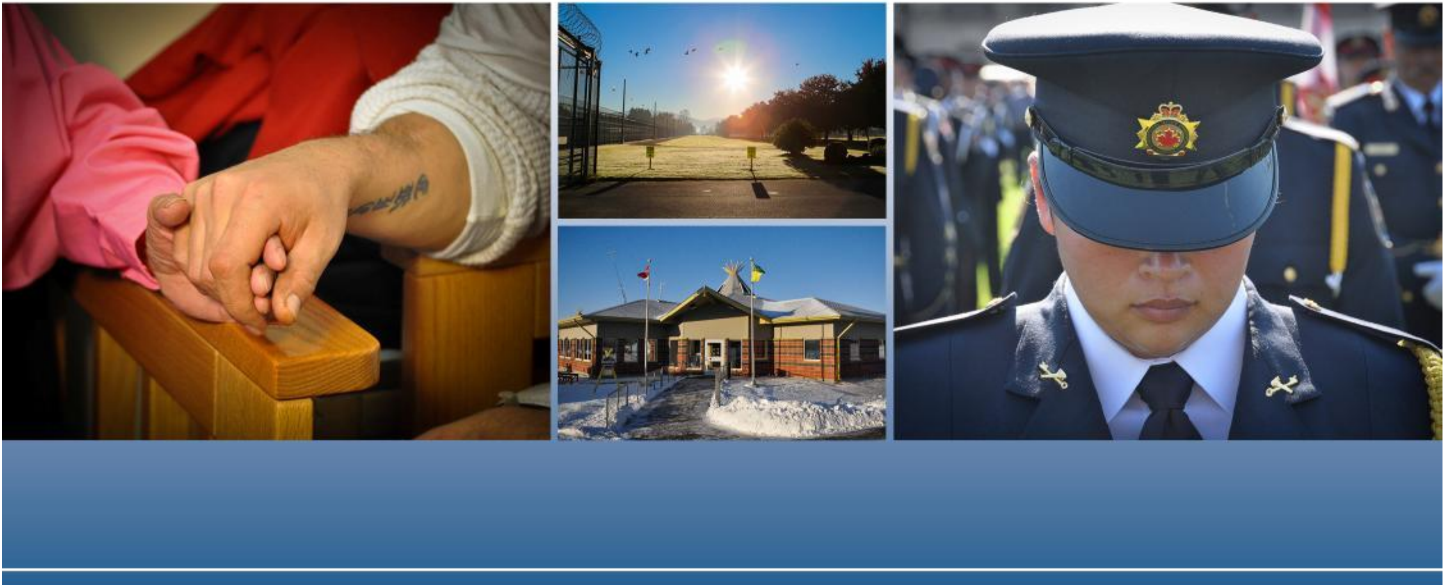

RESEARCH REPORT

Trauma-informed care for incarcerated offenders who engage in chronic self-injurious behaviour: A rapid evidence assessment

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Trauma-informed care for incarcerated offenders who engage in chronic self-injurious behaviour: A rapid evidence assessment

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Executive Summary

Key words: *trauma, self-injurious behaviour, mental health.*

Trauma is prevalent among offender populations, and in particular among offenders who engage in self-injurious or suicidal behaviours. In recognition of this, there have been numerous calls for trauma-informed care in correctional settings. We undertook a rapid evidence assessment to synthesize the principles of trauma-informed care, and the evidence base that supports their use for incarcerated offenders who engage in chronic self-injurious behaviour.

We did not identify any studies of trauma-informed care, specifically for offenders who engage in chronic self-injurious behaviour. As such, we synthesized literature regarding trauma-informed care for the reduction of mental health symptoms, given the relationship between mental health and self-injury. These studies were conducted primarily with women offenders, but provide some evidence of modest benefits of trauma-informed care compared to typical non-trauma focused interventions. When compared to other high intensity, integrated interventions, which were not explicitly trauma-informed, such as therapeutic communities, little or no differences were observed. Unfortunately, most studies excluded offenders with current and/or recent self-injurious thoughts or behaviours, and thus this evidence provides only indirect evidence regarding best practices for offenders with trauma histories who engage in self-injurious behaviour.

While there is a lack of research in the area, the literature suggests a general consensus about the importance of awareness of trauma and the need to create safe environments that minimize triggers that can lead to re-experiencing traumatic events. Identifying current good practices and gaps in meeting the needs of offenders with trauma histories – especially among male offenders - is needed. In the interim, continued awareness of trauma and its potential impact on those who have experienced it, and consideration of trauma as a potential explanation for offenders engaging in challenging behaviours such as self-harm remain are widely agreed upon principles of trauma-informed care and, more broadly, good clinical practice.

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Introduction

In his 2014-2015 Annual Report, the Correctional Investigator called for the Correctional Service of Canada (CSC) to "examine international research and best practices to identify appropriate and effective trauma-informed treatment and services for offenders engaged in chronic self-injurious behaviour, and that a comprehensive intervention strategy be developed based on this review." In response, CSC committed to conduct a literature review of international research and best practices in the provision of trauma-informed treatment for chronic self-injury. CSC also engaged an external expert with experience in the provision of trauma-informed care to First Nations populations, to liaise with CSC's Regional and National Complex Mental Health Committees and to provide trauma-informed case consultations for identified offenders with complex mental health needs. This current review was undertaken to synthesize the principles of trauma-informed care, and the evidence base that supports their use for offenders who engage in chronic self-injurious behaviour. In undertaking this review, we adopted a broad definition of self-injurious behaviour, including both non-suicidal self-injury and suicidal behaviours.

Recognition of the high prevalence of traumatic experiences (e.g., physical, sexual, or emotional abuse, witnessing family violence, and experiencing neglect) among offenders and their co-occurrence with many adverse behavioural outcomes including suicide and self-injury, has led to numerous calls for trauma-informed care in correctional settings (Bloom & Owen, 2002; Dutton & Hart, 1992; Lake, 1995; Miller & Najavits, 2012; Viitanen et al., 2011; Wallace, Conner, & Dass-Brailsford, 2011). Traumatic histories are common among federal offenders, as evidenced by a recent study of all offender admitted on a new sentence during the 2011 calendar year that examined a relatively narrow range of self-reported traumatic experiences (Martin, Eljdupovic, Mckenzie, & Colman, 2015). This study found that 45% of offenders reported childhood physical or sexual abuse or witnessing family violence. Higher rates were reported by women (58%) and Indigenous offenders (67%) than by men (44%) and non-Indigenous offenders (38%). In this study, offenders reporting childhood trauma were more likely to report co-occurring substance abuse, psychological distress, and to have criminal behaviour beginning during childhood. Specifically, 59% of offenders reporting childhood trauma presented with either 2 or 3 of these needs, compared to 35% of offenders who did not report childhood trauma.

The Relationship Between Trauma and Self-Injurious Behaviour

Trauma histories are more common among those who engage in self-injury and/or suicidal behaviour both in correctional institutions (Blaauw, Arensman, Kraaij, Winkel, & Bout, 2002; Mandelli, Carli, Roy, Serretti, & Sarchiapone, 2011; Messina & Grella, 2006; Power & Beaudette, 2014; Power & Brown, 2010; Power & Usher, 2011a, 2011b, 2011c; Tam & Derkzen, 2014; Usher, Power, & Wilton, 2010) and in the general community (Afifi et al., 2014; Klonsky & Moyer, 2008; Martin, Dykxhoorn, Afifi, & Colman, 2016). However, the large majority of individuals with trauma histories do not have persisting general or trauma-specific problems (Berliner & Kolko, 2016). For example, while offenders with trauma histories have a higher incidence of self-injury than those without a history (1.1% of those with a traumatic history versus 0.3% of those without had at least one incident of self-injury in their first 6 months of incarceration), the majority of offenders do not self-injure, regardless of their trauma histories (Martin, Dorken, Colman, McKenzie, & Simpson, 2014).

In order to inform clinical responses for the small sub-group of offenders who engage in chronic self-injurious behaviour, understanding how trauma is related to self-harm or suicide risk has been a focus of recent research. After accounting for various factors that co-occur with trauma, the association between trauma and self-injurious behaviour and suicide is weakened or no longer present. Some of these factors include: affective/mood stability, cooperativeness (social acceptance and identification with other people), social connectedness, and both internalizing (i.e., mood, anxiety) and externalizing (i.e., substance abuse, psychopathy, antisocial personality, aggression) symptoms or disorders (Godet-Mardirossian, Jehel, & Falissard, 2011; Kimonis et al., 2010; Klonsky & Moyer, 2008; Martin et al., 2016; Swogger, You, Cashman-Brown, & Conner, 2011). Given the multitude of potential causes of self-harm and suicide by persons with (and without) a trauma history (Power, Beaudette, & Usher, 2012; Power & Beaudette, 2013, 2014; Power & Usher, 2010), continued work in this area is needed to determine how to best identify those at highest risk and the response required to manage this risk. These questions are central to the debate about whether traumatic events should be directly explored (i.e., a past-focused approach), or whether a present-focus should be adopted to explore current impacts, symptoms and problems associated with trauma and develop coping skills (Miller & Najavits, 2012).

Definitions

Numerous terms have been used in the literature regarding best practices for working with individuals with histories of trauma. A recent survey (Donisch, Bray, & Gewirtz, 2016) found that service providers generally agree that understanding trauma and providing trauma-informed care are important, but there are diverse view points about what this looks like in practice, which may be a barrier to implementation. Berliner and Kolko (2016) concluded that trauma-informed care has not been clearly distinguished from good clinical practice for all clients, as captured in their following statement:

> safety, trustworthiness, collaboration and mutuality, empowerment, voice, and choice should characterize all systems-level responses. Or, to take a common example for how being trauma informed has a value at the individual level, it is often recommended that instead of characterizing children with problems as intentionally misbehaving, it is important to consider that the behaviors may be adaptive or understandable responses to adversity or other historical influences. Again, this is good care and should not be reserved only for those who may have been affected by trauma (p.169).

We adopt the terminology of trauma-informed care as an umbrella term that encompasses trauma-responsive systems and trauma-specific interventions. By trauma-responsive systems, we refer to systems that use policy and awareness to create an environment that at a minimum avoids re-triggering trauma, and ideally supports empowerment and recovery (BC Provincial Mental Health and Substance Use Planning Council, 2013). Thus, trauma-responsive systems are defined by the conditions that should be in place to support day to day interactions and interventions by both non-clinical and clinical staff. Trauma-specific interventions are primarily clinical in nature, and provide specific skills to cope with effects of trauma, treat symptoms, and/or achieve other mutually agreed upon treatment goals. Although both trauma-responsive systems and trauma-specific interventions can be implemented independently, their joint implementation is recommended to achieve optimal results (Clark, 2002). It is important to note that there is a degree of overlap between trauma-responsive systems and trauma-specific interventions, as the effectiveness of interventions depends on staff knowledge and awareness of how to interact with individuals with trauma histories.

While there is no consensus definition of trauma, common to all definitions is a reference to extreme stress that overwhelms a person's ability to cope. The U.S. based Substance Abuse and Mental Health Services Administration (SAMHSA) provides a broad definition, where trauma refers to "experiences that cause intense physical and psychological stress reactions. It can refer to a single event, multiple events, or a set of circumstances that is experienced by an individual as physically or emotionally harmful or threatening and that has lasting adverse effects on the individual's functioning and physical, social, emotional, or spiritual well-being" (Substance Abuse and Mental Health Services Administration, 2014). Broad definitions are typically used when discussing trauma-responsive systems. When considering trauma-specific treatment, a narrower definition that is diagnosis focused is often used (typically focusing on Post-Traumatic Stress Disorder, but for which Acute Stress Disorders would also apply). In the DSM-5, the definition of trauma as part of the diagnostic criteria for a Post-Traumatic Stress Disorder or an Acute Stress Disorder is restricted to "exposure to actual or threatened death, serious injury, or sexual violence/violation[1]" (American Psychiatric Association, 2013). DSM-5 also separates out adjustment disorders, which capture life stressors such as relationship, employment, and social difficulties that are typically not considered as traumatic events.

Aims

The current review sought to address two questions in relation to these two broad categories of trauma-informed care. First, we sought to synthesize the principles of trauma-responsive systems and the evidence that supports them. Second, we sought to summarize research on the effectiveness of trauma-specific interventions.

[1] Note that violence is used in the criteria for PTSD whereas violation is used for Acute Stress Disorder

Method

We conducted a rapid evidence assessment to systematically review literature that met inclusion criteria. We included studies that (1) evaluated the impact of a trauma-informed system or intervention to prevent or treat self-injury/suicidal thoughts or behaviours; (2) measured self-injury or suicidal thoughts or behaviours either prior to and following the intervention or implementation of the system (i.e. used a pre-post design) OR following the intervention or implementation of the system for at least two appropriately matched groups (i.e. a randomized control trial using random assignment to treatment, or a quasi-experimental design using appropriate statistical matching to control for any potential pre-existing group); and (3) were conducted in a jail, prison, or forensic hospital setting.

We searched Medline and PsycINFO to identify relevant studies. The search strategy required that articles be indexed using at least one trauma-related keyword and one corrections/incarceration related keyword (i.e. at least one word from each column in Table 1).

Table 1

Keywords used to identify studies

Trauma-related keywords	Corrections/incarceration keywords
domestic violence	prisons
child abuse	prisoners
child abuse, sexual	criminals
spouse abuse	
physical abuse	
trauma and stressor related disorders	
stress disorders, traumatic	
battered child syndrome	
combat disorders	
psychological trauma	
stress disorders, post-traumatic	
stress disorders, traumatic, acute	
crime victims	
adult survivors of child abuse	

The search returned 1402 results from Medline and 1898 results from PsycINFO

(including at least 213 duplicates). We sought to identify additional literature that may have been missed through our systematic search – including grey literature – by searching reference lists of included studies, Google Scholar, the SAMSHA's National Registry of Evidence-Based Programs and Practices (www.samhsa.gov/data/evidence-based-programs-nrepp), and personal web-pages or citation profiles of authors of trauma-informed care programs or multiple studies in the area[2]. Finally, we included additional articles from the personal files of the authors, as well as retrieving and examining all research conducted by CSC on self-injury and suicide.

Our search identified no studies that examined the impact of trauma-informed interventions for offenders where the study outcome was self-injury or suicide. Given that mental health and distress are strongly associated with self-injury (Dear, 2008; Power et al., 2012; Power & Usher, 2010), we retained studies that provided indirect evidence for reductions in self-injury through improved mental health. Full-text articles were retrieved for 19 studies, which based on title and abstract review, appeared to evaluate the impact of trauma-specific interventions based on a mental health outcome such as trauma or depressive symptoms. After full review, 17 of these studies were retained for data extraction and inclusion in the review. The two excluded papers (Messina, Calhoun, & Braithwaite, 2014; Valentine, 2000) reported data from the same sample as another included study. In these cases, the study with the most complete data was retained, and the excluded paper was consulted for additional detail as required. Two systematic reviews (Emerson & Ramaswamy, 2015; King, 2015) of trauma-specific interventions for women, and two literature reviews on trauma-informed care in correctional settings (Miller & Najavits, 2012; Wallace et al., 2011) were identified. Key findings from these reviews are discussed throughout the current review. One published article (Elwyn, Esaki, & Smith, 2015), and one interview (National Resource Centre on Justice Involved Women, n.d.) regarding the implementation of trauma-informed systems were also identified and included.

Because of the small body of studies identified, and diverse methodologies used, we conducted a narrative literature synthesis. Consistent with the narrative approach, we described key strengths and weaknesses that would impact the validity and generalizability of the studies (e.g., random assignment to treatment or control condition, measurement and statistical control

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[2]The following authors publications were reviewed: Sandra Bloom (http://www.sanctuaryweb.com/), Stephanie Covington (http://stephaniecovington.com/), Julian Ford (http://facultydirectory.uchc.edu/profile?profileId=Ford-Julian), Christine Grella (https://scholar.google.com/citations?user=UHW6Z5QAAAAJ&hl=en), Nena Messina (http://www.uclaisap.org/profiles/messina.html), Lisa Najavits (http://www.treatment-innovations.org/seeking-safety.html), and Nancy Wolff (http://bloustein.rutgers.edu/wolff/).

of differences between groups, blinded outcome assessments, sample size, external replication of intervention effectiveness by research/clinical teams that are not affiliated with the intervention, exclusion criteria for participation in the study, etc.) rather than assigning study quality scores that would be more useful for meta-analysis.

Results

Trauma-Responsive Systems

Trauma-responsive systems have an organizational approach that is sensitive to the impact and variety of trauma, and seeks to minimize the impact of trauma through the avoidance of triggers and the development of policies that promote coping with stressors within the environment. Given high rates of trauma in mental health and justice settings, it has been suggested that it should be assumed that all clients have previously experienced trauma, in order to ensure that all policies are recovery-driven, avoid potential re-traumatisation, and ensure respectful and honest interactions with clients (Elliott, Bjelajac, Fallot, Markoff, & Reed, 2005; Harris & Fallot, 2001). Given that history of trauma and mental illness have been widely cited as pathways into crime for women (de Vogel & Nicholls, 2016), trauma-informed care principles are central to gender-informed correctional care (King, 2015; Tam & Derkzen, 2014). However, Saxena, Messina and Grella (2014) found that women without trauma histories did not benefit from the gender-responsive treatment program studied (and in fact they had slight increased risk of depression and higher substance use). Thus, further work is needed to determine the value of taking this approach of assuming that all clients have trauma histories. Among the key criteria that make up a trauma-responsive system, the following are consistent across most models (Decandia, Guarino, & Clervil, 2014; Elliott et al., 2005; Harris & Fallot, 2001; Miller & Najavits, 2012; Wallace et al., 2011):

- *Trauma awareness:* comprises the delivery of introductory skill development and training to all staff to increase trauma-sensitivity and an understanding of triggers;
- *Minimizing re-traumatization*: revision of policies to include less-intrusive measures and to identify procedures that may be harmful and disempowering to trauma-survivors, including the use of seclusion, physical restraints, strip searches and involuntary hospitalizations. Instances of seclusion and restraint use should be followed by a prevention focused analysis and debriefing in order to ultimately reduce or eliminate its use;
- *Universal Screening and Assessment:* screening of clients as quickly as possible following admission for a previous trauma history;

- *Strength-based language*: avoiding stigmatizing and deficit-based language to empower clients towards their recovery, including recognizing challenging behaviours as attempts to cope and adapt to feelings (e.g. overwhelm, fear, loss of control) associated with trauma. This may be especially important in correctional populations, as offenders may adopt behaviours and attitudes such as suspiciousness, and withholding information that can impede the development of therapeutic relationships and ultimately recovery (Rotter, McQuistion, Broner, & Steinbacher, 2005);
- *Integrated programming to address the multiple needs* of individuals (e.g., mental health, substance abuse, trauma symptoms). Based on their literature review, Wallace and colleagues (2011) concluded that

  > "There is a menu of evidence-based and promising treatments with the potential to effectively address the overlap among trauma, mental illness, substance abuse, and behavioral problems among those undergoing reentry. However, heterogeneity among the offender population suggests the need for practitioners to co-create with consumers individually tailored, integrated treatments." (2011; p.340).

They, and others (e.g. Sacks et al., 2008) argue that treatment is more effective if it addresses mental health, substance abuse, trauma needs of clients simultaneously, rather than in parallel (i.e. multiple different programs from different providers at the same time) or sequentially (e.g., treating substance abuse before treating other needs).

The implementation of trauma-informed systems within correctional organizations is not well studied. Miller and Najavits (2012) note that the inherent nature of correctional environments including the use of restraint, seclusion and searches can make it difficult to avoid potential triggers of traumatic events. However, limited data suggest that trauma-informed systems can be effectively implemented in correctional settings. For example, unpublished data reported in an interview with the superintendent of *MCI-Framingham* (a medium security correctional facility for female offenders in the United States) (National Resource Centre on Justice Involved Women, n.d.), indicated that following implementation of trauma informed strategies such as training staff and implementing a peer support program for women, there were decreases in self-injurious incidents, suicide attempts, assaults, segregation, and suicide watches. While not directly health related, Elwyn and colleagues (Elwyn et al., 2015) reported reductions

in the number of misconducts and the use of restraints and isolation, and increased perceptions of safety in a girls juvenile justice facility following the implementation of the Sanctuary Model[3]. In both cases, it was not possible to separate the impacts of implementing trauma-informed systems from other changes in the facility, and the reliability of the data captured through official records is unknown. Nonetheless, the data provide some support for and highlight important lessons learned about becoming a trauma-responsive system. For example, Bisonnette noted that the biggest, and ongoing, challenge is the perception of staff that trauma-informed care is "an excuse for behaviour rather than a reason negative behaviour occurs". In response to this challenge, Bisonnette highlighted a need for increased understanding of what trauma-informed care is and what it means. Her advice echoes that of others (Harris & Fallot, 2001) that becoming trauma-responsive is a multi-year endeavour that requires sustained and multidisciplinary support. Bissonnette highlights that data to support the need for the desired changes (i.e. evidence of existing gaps, and potential benefits of change) are essential to obtain this level of buy-in.

Trauma-Specific Interventions

As noted previously, our search did not identify any research that examined the effects of trauma-specific interventions on self-injury or suicide. A small body of research has applied trauma-specific interventions in correctional environments, with a primary focus on women offenders with co-occurring substance use disorders and PTSD. Results of these studies covering a range of interventions are summarized in Appendices 1 and 2. Many studies indicated trauma-specific interventions are promising with respect to reduction of trauma (Barrett et al., 2015; Bradley & Follingstad, 2003; Ford, Chang, Levine, & Zhang, 2013; Kubiak, Kim, Fedock, & Bybee, 2012; Valentine & Smith, 2001) and in some cases depressive or general distress (Bradley & Follingstad, 2003; Kubiak et al., 2012; Lynch, Heath, Mathews, & Cepeda, 2012; Wolff et al., 2015; Wolff, Frueh, Shi, & Schumann, 2012) symptoms. However, the studies are primarily small samples, and in most cases have important methodological limitations such as non-random assignment to treatment, or no comparison group, and high drop-out rates.

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[3] As summarized by Elwyn et al (2015) This model has four key components that aim to create or change organizational culture. These components include (1) trauma theory; (2) seven model commitments of non-violence, emotional intelligence, democracy, open communication, social responsibility, commitment to social learning and growth and change; (3) the use of the acronym SELF to guide planning services around the categories of safety, emotion management, loss and future; and (4) toolkits to provide practical applications of trauma theory. See also (Esaki et al., 2013)

Furthermore, many of the studies (Barrett et al., 2015; Ford et al., 2013; Valentine & Smith, 2001; Wolff et al., 2015; Zlotnick, Johnson, & Najavits, 2009; Zlotnick, Najavits, Rohsenow, & Johnson, 2003) excluded participants with recent self-injury or suicidal thoughts or behaviours, active psychosis, or with recent incidents such as assaults. It is unknown whether these programs will be effective for offenders who engage in chronic self-injurious behaviours. Some of the studies (Kubiak et al., 2012; Messina, Grella, Cartier, & Torres, 2010; Sacks et al., 2008) find little or no benefit of the trauma-informed interventions when compared against high intensity treatment- as-usual conditions (e.g., 20-30 hour per week therapeutic communities). These findings therefore are more likely to under-estimate the effectiveness of trauma-informed care. However, they reinforce the previous observation that trauma-informed care may be primarily a question of providing good clinical care and appropriately matching intensity and duration of treatment to client needs, rather than the need for trauma-specific manualized programming.

Emerson and Ramaswamy (2015) argue that the theories and assumptions that inform trauma-specific interventions should be discussed in greater detail. They argue that understanding why interventions work will help identify their key ingredients, and will help resolve important debates that are implied by past studies (e.g., whether trauma-informed treatments should explore participants' traumatic pasts in group therapy or not, why there may be differences in treatment outcomes for different symptom profiles, and what programming should be offered in custodial versus community settings). For example, among participants who completed the Seeking Safety program in an Australian male prison, opinions were mixed regarding where this treatment should be provided. Among the ten respondents, four indicated that the program should be offered either close to release or while on parole because of feelings of vulnerability and difficulties concentrating in prison. However, another participant stated he would not have followed through with the program while on parole, noting that the structure provided in prison helped him complete the whole program. Furthermore, many staff express concern about asking about or treating trauma directly (Miller & Najavits, 2012), although at least some offenders report that they are seeking trauma-specific interventions that directly address the trauma (Matheson, Brazil, Doherty, & Forrester, 2015). Few studies have explored this question. However, one such study excluded patients with acute symptoms or signs of destabilization on the basis that this would be counterproductive to the process of exploring traumatic events directly (Valentine & Smith, 2001). All other studies in this review were

present-focused interventions. This highlights the practical benefit of ensuring current stability and acquisition of coping skills to deal with stressful situations before directly addressing traumatic events.

Given the absence of literature specific to the treatment of offenders with histories of trauma who engage in chronic self-injurious behaviour, the literature on self-injury in general offers the most pertinent evidence. Reviews of interventions for self-injury among offender populations (Corabian, Appell, & Wormith, 2013; Dixon-Gordon, Harrison, & Roesch, 2012; Leschied, 2011; Usher et al., 2010) reveal a range of interventions and therapeutic approaches (e.g. Cognitive Behaviour Therapy [CBT], Dialectical Behaviour Therapy [DBT], Manual Assisted Cognitive Behaviour Therapy [MACT] and Acceptance and Commitment Therapy [ACT]) that have been proposed as responses to self-injurious behaviour for all offenders. In a recent review of psychosocial interventions for individuals who engage in self-injurious behaviour in the community (Hawton et al., 2016), CBT and problem-solving therapy were associated with fewer participants engaging in repeated self-injurious behaviour at follow-up, and in secondary outcomes including depression, suicide ideation, hopelessness and problem solving. Only three trials were identified evaluating DBT. While the authors of the review concluded that DBT did not reduce the number of participants engaging in repeated self-injurious behaviour, the effect size (odds ratio of 0.59) was similar to that for CBT (odds ratio of 0.54), but was not statistically significant, owing largely to the small number of trials included for DBT. The authors did note that DBT was associated with a significant reduction in the frequency of repeat self-injurious behaviour. A small study of DBT in CSC found a reduction in the proportion of participants who engaged in self-injurious behaviour from 6% in the three months prior to the intervention to 1% in the three months after program commencement (Blanchette, Flight, Verbrugge, Gobeil, & Taylor, 2011).

Discussion

We did not identify any studies measuring the impact of trauma-informed care for offenders who engage in chronic self-injurious behaviour. Therefore, there is only limited and indirect evidence to draw from at this time. Given that most offenders who engage in chronic self-injurious behaviour have trauma histories, and trauma-informed care emphasizes important elements of good clinical practice (including expressions of empathy, empowerment and engagement of clients, providing integrated and multidisciplinary treatment, and understanding of the many factors that underlie challenging behaviours, such as self-injury), existing reviews of best practices in responding to self-injurious behaviour offer valuable guidance (Corabian et al., 2013; Dixon-Gordon et al., 2012; Fagan, Cox, Helfand, & Aufderheide, 2010; Hawton et al., 2016; Leschied, 2011; Usher et al., 2010). While we identified all studies that were included in prior reviews of trauma-informed care (Emerson & Ramaswamy, 2015; King, 2015), studies on these widely recommended interventions such as CBT and DBT were not identified using the keywords in prior reviews or our current work. We refer to the prior reviews for a discussion of the evidence supporting the use of these interventions as responses to self-injurious behaviour, while noting that these interventions do not appear to have been evaluated specifically with offenders with trauma histories.

Despite the limitations of the extant literature, a number of points appeared consistently in the studies reviewed for this synthesis. First, nearly all studies emphasized the importance for all staff to be aware of trauma and its effects given the prevalence of past traumatic events among inmate populations. Second, trauma-specific clinical interventions appear to provide at least modest benefits compared to what could be considered a typical intervention, and seem to be at least equally effective as compared to more intensive and integrated service delivery models such as therapeutic communities. Disentangling the aspects of these diverse responses to offenders with histories of trauma will inform the implementation of cost-effective service delivery models. Finally, among the most commonly discussed principles for preventing and/or responding to self-injurious behaviours by offenders with histories of trauma, we note the following as potential priorities for correctional institutions:

- Treating needs in an integrated manner that acknowledges the overlap between offenders' multiple needs such as traumatic histories, mental health, substance abuse, and criminal

behaviour.

- Considering the potential for challenging behaviours such as self-harm to be adaptations to stressful or triggering situations related to offenders' traumatic histories, and minimizing these triggers wherever possible.
- Providing coping skills to manage current stressors and help regulate emotions. CBT and DBT are two therapeutic approaches that appear to have the most support, either directly through prior systematic reviews, or through incorporation of elements of these approaches in trauma-specific interventions. The use of strength-based language in all interactions may support skill acquisition, and the effectiveness of clinical interventions.
- Addressing traumatic events directly only after stabilizing current symptoms, and in a safe environment. It is debated whether this is possible within a correctional institution, or if this is best done in a community setting.

Conclusions

While there is an abundance of retrospective research showing a high prevalence of trauma among offenders who self-injure, trauma is common among all offenders, and the majority of offenders with trauma histories do not engage in self-injurious behaviours. Prospective evidence is lacking regarding current and good practices for the care of individuals with trauma histories in corrections or the factors that foster resilience (c.f. Roy, Carli, & Sarchiapone, 2011) and positive outcomes. Identifying current good practices and gaps in meeting the needs of offenders with trauma histories – especially among male offenders - is needed given the limited evidence base that currently exists. Continued awareness of trauma by all staff, and considering alternative explanations for self-injurious behaviour remain widely agreed upon principles of trauma-informed care (and good clinical practice more broadly). Correctional researchers, policy makers and practitioners continue to develop knowledge and capacity to recognize and respond to the needs of offenders with trauma histories. As models and services continue to be evaluated and refined, optimal matching of interventions to the unique characteristics of each inmate will support correctional services to achieve their mandates of contributing to safe institutions and communities and offender rehabilitation.

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*Indicates article included in the systematic review, and summarized in the Appendices.

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Appendix A: Summary of Interventions for Inmates with Trauma Histories

Tool	Studies	Environment	Results	Strengths	Limitations
Seeking Safety	(Barrett et al., 2015; Lynch et al., 2012; Wolff et al., 2015, 2012; Zlotnick et al., 2009, 2003)	Women's and men's prisons	All studies have shown reductions in symptoms, though effects compared to comparison groups have been small.	-One of few interventions tested with both men and women -Can be modified/adapted based on time constraints	-Active suicide risk an exclusionary criteria in many studies
Esuba	(Roe-Sepowitz, Bedard, Pate, & Hedberg, 2014; Ward & Roe-Sepowitz, 2009)	Women's prisons and community residential program	Small reductions in symptoms (many not statistically significant in small studies) among participants in program	-Similar effectiveness across younger and older participants	-No control groups in studies -All research has involved the program developers; it is unclear how much implementation drift may result when applied on a larger scale.
Male-Trauma Recovery Empowerment Model (M-TREM)	(Wolff et al., 2015)	Men's maximum security prison	Inconsistent results depending on analyses conducted; some evidence of modest benefit in reducing symptoms	-one of few interventions tested with male offenders and in maximum security	-Only a single study, which excluded current suicide risk, psychosis and organic brain impairment
TARGET	(Ford et al., 2013)	Women's state prison	Improvements in PTSD and trauma symptoms were similar to those in a manualized group therapy control group	-RCT -Compares trauma-informed care to a common treatment that could otherwise be offered	-Only a single study, which excluded current suicide risk, psychosis and organic brain impairment
Group therapy (with skills based/coping strategy focus)	(Bradley & Follingstad, 2003; Ford et al., 2013)	Women's prisons	Appear to lead to reductions in symptoms compared to untreated groups, that may be similar to trauma-focused programs	-May be more cost-effective/adaptable than trauma-focused programs	-Studies have varied group therapy conditions making replicability and implementation difficult -Very few studies, with small samples, and different comparisons

Gender-responsive therapeutic community	(Kubiak et al., 2012; Messina et al., 2010; Sacks et al., 2008)	Women's prisons (Therapeutic communities are separate wings)	Some benefits in long-term outcomes for gender-responsive vs. traditional TC (multiple factors differ between programs, making it unclear which elements are (most) important).	-Programs are integrated treatment programs that address needs simultaneously -Sample sizes have been among the largest and most use RCT designs	-Control conditions are intensive treatment -Focus is primarily on substance abuse, and longer-term outcomes rather than institutional behaviour
The Tree	(Liebman et al., 2014)	Medium security women's prison	-No outcome data due to attrition/drop-outs	-Important context and discussion of challenges implementing and evaluating trauma-informed care	-No results
Dream Work/Group therapy	(DeHart, 2010)	Women's maximum security facility	Participants find program helpful for understanding themselves, relating to others, and feeling safe expressing thoughts; less favourable (but still positive) ratings about the program for helping them solve problems and set goals		-No outcome data (all perceptions of program effectiveness) -No control group
Trauma Incident Reduction	(Valentine & Smith, 2001)	Low to medium security women federal prison	Evidence of reduced symptoms for treated group compared to controls.	-Intervention is brief and encourages participants to take responsibility for their care (intended to be highly empowering).	-Single study, excluding those with current mental health needs (hospitalization in last 3 years for psychosis/bipolar, current depressive episode requiring treatment; current psychotic symptoms; drug or alcohol abuse or victimized within past 3 months), as these are "acute situations that would be counterproductive to the process". Not applicable for chronic self-injury

Appendix B: Characteristics and Methodological Strengths and Weaknesses of Studies Included in the Review

Tool	Authors	Environment	Results	Strengths	Limitations
Seeking Safety	(Barrett et al., 2015)	Two male prisons in Australia.	Treated and control groups both had similar reductions in PTSD symptoms and cognitions from baseline to follow-up; Treated group had slight increase in self-rated confidence to resist substance use in the future, whereas this was stable in control group.	-RCT (though no comparison of treated and control groups to ensure that randomization worked) -Includes qualitative component with participant perspectives	-Restricted to PTSD and SUD; excluded recent/current suicidality and acute psychosis. -Sample of 30 -Approximately 1/3 to 1/2 lost to follow-up -Not full-dose of program (chose 8 of 25 modules). This can be seen as a strength as the intervention is designed to be modifiable, and this allowed the program to be delivered over 8 weeks, so may be more reflective of how this could be applied in CSC.
Group therapy (included DBT skills and writing assignments). Nine 2.5 hour sessions focused on education about interpersonal victimization and affect regulation	(Bradley & Follingstad, 2003)	Women's medium security prison. Very complex trauma histories. All experienced childhood sexual abuse, and 90% had adult assault; 65% were victims of physical and sexual assault in both childhood and adulthood.	Reductions in depressive and trauma symptoms were greater for the treated group than for the waitlist control group	-RCT, with no-contact control group (though no comparison of treated and control groups to ensure that randomization worked)	-High refusal and attrition rates. Sample of 31 (13 treated and 18 waitlist control). 97 were eligible, and 49 were willing to participate. 7 dropped out of the program and are not included in the analysis, so this only captures the effect of treatment for small sub-group of completers. -Unclear if there were exclusionary criteria
Developed 16 session trauma-	(Cole, Sarlund-	Women's correctional facility	Inconsistent pattern across measures, but for	-Good illustration of adherence to trauma-	-Low participation rates/high drop-out (not quantified, but noted as a

focused group intervention (psychotherapy)	Heinrich, & Brown, 2007)		most the control group had increasing symptoms, and the treated group stayed stable, or also increased to varying degrees. On most scales the control group had higher symptoms at baseline. Very little evidence of a positive effect.	informed care principles, especially empowerment and voluntariness	limitation of their approach to be completely voluntary). -Very small sample (9). -75% of treated (3 out of 4) vs none of control were on psychiatric meds at start of study.
Dream Work/Group therapy	(DeHart, 2010)	Women's maximum security facility	Evaluation data suggests participants find program helpful – primarily for understanding themselves, relating to others, and feeling safe expressing thoughts; less favourable (but still positive) ratings about the program for helping them solve problems and set goals	-Multi-method, and breaks out types of outcomes	-No outcome data (all perceptions of program effectiveness) -No control group
TARGET (and supportive group therapy)	(Ford et al., 2013)	Women's state prison	Similar gains across all measures for TARGET and SGT (both are manualized interventions). Both led to reductions in PTSD and trauma symptoms.	-RCT -Compares trauma-informed care to a common treatment that could otherwise be offered	-High psychopathy, active suicide watch, cognitive impairment and past month psychiatric hospitalization were exclusions -Some imbalance in randomization in relation to timing of trauma (more childhood physical and sexual in the SGT group vs more adult physical and sexual assault in TARGET)

Beyond violence	(Kubiak et al., 2012)	Women's residential substance abuse treatment therapeutic community	Large decreases in depression and anxiety, with moderate decreases in PTSD symptoms; little change in aggression or hostility scores		-"Therapeutic community has more rules and higher expectations for behaviour than in general population units" -Focus is on women with violent index offences. - No control group
The Tree	(Liebman et al., 2014)	Medium security women's prison	-No outcome data as a result of attrition (no one from the treatment group attended follow-up measures, and did not report them for a pre-post (no control group) 2nd wave	-Important context and discussion of challenges implementing and evaluating trauma-informed care	-No results
Seeking Safety	(Lynch et al., 2012)	Minimum and medium security state prison	Reduced PTSD, depression, interpersonal difficulties and coping in terms of mean scores and proportions showing reliable change	-Among the larger sample sizes (114) -Relatively low refusal and attrition rates (~30%), mostly due to transfers	-Not randomly assigned -Based on anticipated release/transfer dates (had less time to serve; and in theory had served more time) -Some additional biases against program effectiveness (e.g. younger, less educated, and more control participants participated in anger management programs)
Helping Women Recover and Beyond Trauma	(Messina et al., 2010)	State prison for women therapeutic community (TC) – comparison of traditional versus gender responsive TC	Little benefit compared to the standard TC on mental health outcomes; positive effects in higher rates of completing community after-care, and subsequent	-RCT, with well balanced groups -Relatively large sample (115)	-Focus is primarily on substance use, so less relevant to this review -Therapeutic community is more intensive than many treatment as usual conditions -Focus is primarily on community outcomes

			recidivism		
Esuba	(Roe-Sepowitz et al., 2014)	State women's prisons	Statistically significant decreases on all 10 Trauma Symptom Index sub-scales with small effect sizes. No difference in intervention effectiveness for younger (18-24) vs older (25+) inmates.	-Large sample (320) -Multiple prisons	-No control group -Volunteer sampling -Only focused on completers. -Approximately 25% attrition for follow-up measures
Therapeutic community (gender-informed, with trauma programming)	(Sacks et al., 2008)	Women's prison (up to medium security)	Both groups show statistically significant improvements in PTSD severity, depressive symptoms and general psychological distress, with a significantly greater reduction in depressive and distress symptoms for gender-informed program group	-Large sample (314) -RCT with confirmation of balance between groups (however, some relatively important differences exist as statistical rather than practical significance was used; e.g. prevalence of PTSD was 52% in control vs 37% in treated groups) -Intent to treat analysis plan (i.e. drop-outs included in analyses)	-Control group is intensive substance abuse program, whereas Therapeutic Community is an integrated/ comprehensive program. Authors note that control participants had access to other non-substance abuse services, but do not report on the use of these services. -Not a test of trauma-informed care per se; primarily a test of integrated programming vs traditional fragmented model. -No analyses of incomplete follow-up data for potential bias
Trauma Incident Reduction	(Valentine & Smith, 2001)	Low to medium security women federal prison	-Statistically significant post-test differences after controlling for pre-test scores; authors describe findings as evidence of decreasing scores among those in the treatment group vs	-RCT (some testing for balance between groups based on statistical significance; evidence of practically significant differences between groups – e.g. 17% of treated vs. 35% of control	-Excludes people with current mental health needs (i.e. hospitalization in last 3 years for psychosis/bipolar, current depressive episode requiring tx; current psychotic symptoms; drug or alcohol abuse dx or victimized within past 3 months), as these are "acute

			stable symptoms for the control group.	married at time of study)	situations that would be counterproductive to the process of TIR". Indicates that there are losses to follow-up but the numbers are not provided.
Esuba – Women Helping Women Turn Abuse Around	(Ward & Roe-Sepowitz, 2009)	Community residential exiting programme for prostitutes and medium security women's institution.	All scales of Trauma Symptom Inventory showed small decreases (many of these differences were not statistically significant) for both the prison and community groups. Reductions in mean were approximately 5% relative to baseline scores.	-Relatively low drop-out for prison group (only 3 of 21; higher attrition for community group – 8 of 19)	-Treatment was voluntary and non-randomized -No control group (comparison between prison and community based program offering) -Non-completers excluded from analyses -Study restricted to prostitutes; questionable whether it is generalizable to other women offenders -Unknown what other services were being provided to participants
Seeking Safety	(Wolff et al., 2012)	Women offenders in a multilevel institution.	Significant decrease in PTSD symptoms and mental health symptoms. Effect was similar across ethnic groups and education levels Participants were satisfied overall with the programme.		-Offenders self-referred for trauma therapy. -33% of participants did not complete the treatment, and are excluded from analyses -No control group. -Long term effects of treatment unknown.
Seeking Safety and Male-Trauma Recovery Empowerment	(Wolff et al., 2015)	Maximum security male institution	Intent to treat analyses suggest lower PTSD, and general distress symptoms for both Seeking Safety and M-	- RCT (with evidence of balance other than active military duty rates being higher in the treated group) -Both intent to treat and	-Offenders with an active suicide risk (placement on suicide watch within the last three months), active psychosis or organic brain impairment were excluded

Model (M-TREM)			TREM compared to control group, with little difference between the interventions. Pattern among completers was weaker, with few significant effects after controlling for baseline scores. Clients reported high satisfaction.	completer analyses reported	-Relatively high attrition (approx 20-25% left program) and refusal (approx 1/3 for screening and 15% for treatment after screening)
Seeking Safety	(Zlotnick et al., 2003)	Women in residential substance abuse treatment program in minimum security wing of women's prison	-Participants found treatment acceptable, effective and had strong alliance with clinician -Maintained significant decrease in PTSD symptoms from pre-treatment to post time periods		-No control group -Small sample size (17) -Active psychosis and brain impairment excluded
Seeking Safety	(Zlotnick et al., 2009)	Women in residential substance abuse treatment program in minimum security wing of women's prison	Overall decrease in trauma symptoms from intake to 3 month and 6-month post-release; improvement for all groups from intake to each follow-up point No significant difference groups in difference in trauma or general distress scores over time.	-RCT (randomization success was reported based on non-significant tests comparing the groups – data not reported; exception to this was on age, where treated group was on average 4 years older, so models controlled for this.) -Relative low attrition (~10%) and refusal	-Unblinded assessments -Small sample (49) -Active psychosis and brain impairment excluded

				(~10%) rates -Clinician adherence with model was assessed and judged to be good	