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Self-Injurious Behaviour in Treatment Centres: Correlates, Trajectories, and Descriptive Analysis

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Self-Injurious Behaviour in Treatment Centres: Correlates, Trajectories, and Descriptive Analysis

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Executive Summary

Key words: *self-injurious behaviour, mental health, treatment centres*

Non-suicidal self-injury (NSSI) may be defined as deliberate bodily harm or disfigurement without suicidal intent and for purposes not socially sanctioned. NSSI can include behaviours such as cutting, ligature use, burning, hitting, swallowing sharp or indigestible objects, inserting and removing objects, and head banging. This challenging behaviour poses safety risks to offenders and staff within institutions; therefore, a better understanding of NSSI is required. There is a lack of knowledge regarding NSSI in male offenders residing in treatment centres in Canada and the unique needs and challenges present within this population make it imperative that the phenomenon be examined in this specific population. This study compared male offenders in treatment centres with and without a history of NSSI to determine whether significant differences are present. In addition, the trajectories to NSSI are investigated.

A total of 85 federally sentenced men residing in treatment centres participated in the study. The men were recruited from all five treatment centres operated by the Correctional Service of Canada (CSC). Semi-structured interviews were conducted and participants completed a series of questionnaires designed to assess history of mental health disorder, history of abuse, aggression, coping, NSSI, and history of suicide attempts.

Forty men with a history of NSSI were compared to 45 men without a history of NSSI. The men who had engaged in NSSI scored higher on measures of aggression and were more likely to have experienced childhood physical abuse. The NSSI group were also more likely to meet the diagnostic criteria for non-alcohol substance abuse, any major mental health disorder, antisocial personality disorder, and borderline personality disorder.

To assess the possible developmental trajectories to NSSI with this population, path analyses were conducted. The analyses revealed that childhood sexual abuse was a strong predictor of posttraumatic stress disorder and borderline personality disorder; however, these were not predictive of NSSI. Anger and aggression were strong predictors of NSSI with this population. As a result, partial support for the impulsivity/anger/aggression model was found.

The current study provides a better understanding of NSSI in federally sentenced male offenders residing in treatment centres. Compared to federally sentenced men in non-treatment centre institutions, there were fewer significant differences between those in the treatment centres with, and those without, a history of NSSI. Because treatment centres typically accept offenders who have known or suspected major mental health needs, the prevalence rate for mental disorders is presumed to be higher than in the general offender population; therefore, differences between the NSSI and comparison group could be less discernible. Gender differences do exist in NSSI; however, the profile of men in treatment centres is distinctive from both men in institutions and women offenders. It should be noted that there was an increased prevalence of psychological disorders in both the women offenders and men residing in treatment centres. Gender, individual function of NSSI, origins of NSSI, and psychological history should be considered in treatment and prevention interventions to reduce NSSI.

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Introduction

Self-injurious behaviour (SIB) is defined as any type of direct bodily harm or disfigurement that is deliberately inflicted on oneself that is *not* considered to be socially acceptable (Favazza, 1998, 1999; Simeon & Favazza, 2001; Walsh & Rosen, 1988). Many definitions and terms (e.g., parasuicide, suicidal behaviours, self-aggression, self-destruction, self-mutilation, simulated suicide, delicate wrist-cutting, deliberate self-harm) have been used to refer to this type of behaviour, making it challenging to compare studies and aggregate research findings (Nock, 2010). In this paper, the more precise term of non-suicidal self-injury (NSSI) will be used to refer to SIB in which there is no suicidal intent. Incidents of SIB in which suicidal intent is known will be called suicide attempts. Suicidal intent is often difficult to determine and is often ignored in research (Claes & Vandereycken, 2007). As such, the term SIB will be used when suicidal intent is unknown or ambiguous.

NSSI behaviours have several implications for CSC and the management of offenders. First, self-injury poses a serious risk to the safety of the offender engaging in the behaviour, to other offenders who are witnessing or are involved in the incident, and to staff working with individuals who self-injure. Not only can this create a stressful work environment, it can also lead to physical health issues for the offender such as infection (in cases of cutting, insertion, swallowing indigestible objects etc.) and the potential to spread blood borne diseases. NSSI also has monetary costs when the offender needs to be transported to outside hospital for treatment or in instances when psychiatric services are required. For these reasons, research needs to examine the correlates and trajectories to SIB and NSSI to better understand how to treat offenders who engage in the behaviours and to learn which interventions would be most successful.

NSSI is not a mental disorder in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013). In the DSM-5, NSSI is captured in four possible categories: (1) trichotillomania (compulsive hair pulling); (2) borderline personality disorder; (3) stereotypic movement disorder with self-injurious behaviour; (4) impulse-control disorder not otherwise specified. If the NSSI that an individual engages in does not fit within one of these categories, it cannot be diagnosed in this way. One of the proposed changes to the DSM-5 was the inclusion of non-suicidal self-injury as a separate diagnosis (American Psychiatric Association, 2013) because of the difficulty in diagnosing many

individuals who exhibit NSSI within the current framework; however, it is currently listed as a disorder requiring further study.

Several studies have examined the relationship between NSSI and psychological disorders, traumatic life events, head injury, sexual orientation, and childhood abuse. As a result there are various, sometimes conflicting, theories that have been proposed to explain the conscious use of potentially fatal behaviours. Despite the numerous conceptualizations of the cause and purpose of NSSI (e.g., Joiner's Theory, Third Variable Theory, Affect Regulation Hypothesis), there is overlap among the theories, and overall it is believed that NSSI can serve multiple purposes simultaneously (Nock & Cha, 2009).

Many studies have found correlations between NSSI and psychological disorders, some of which are of particular concern for offender populations, particularly for those offenders residing in treatment centres. Borderline personality disorder is a complex mental health syndrome characterized by instability of interpersonal relationships, self-image, and affect, in addition to marked impulsivity (American Psychiatric Association, 2000; Paris, 2005). Given that NSSI is one of the criteria for borderline personality disorder, it is not surprising that the disorder would be correlated with the behaviour (e.g., Andover, Pepper, Ryabchenko, Orrico, & Gibb, 2005; Young, Justice, & Erdberg, 2006). However, individuals with a history of NSSI are twice as likely to report symptoms of borderline personality disorder, even when the self-injury criterion is excluded (Klonsky, Oltmanns, Turkheimer, 2003). Due to the over-representation of women in research pertaining to borderline personality disorder and a potential gender bias in diagnoses, it is unclear whether a true gender difference exists in rates of NSSI (Widiger, 1998). Gender differences in diagnoses of borderline personality disorder have generally not been found in epidemiological studies (Coid, Yang, Tyrer, Roberts, & Ullrich, 2006; Grant et al., 2008; Jackson & Burgess, 2000; Lenzenweger, Lane, Loranger, & Kessler, 2007; Torgersen, Kringlen, & Cramer, 2001; Zimmerman & Coryell, 1989). In correctional populations, the rates of borderline personality are high for both genders, with rates ranging from 19% to 57% for men (Black, Gunter, Allen, Blum, & Arndt, 2007; Blackburn & Coid, 1999; Singleton, Snow, Medlicott, Paton, 1998) and 20% to 49% for women (Jordan, Schlenger, Fairbank, Caddell, 1996; Singleton et al., 1998; Zlotnick, Mattia, & Zimmerman, 1999) with no clear gender difference. Thus, borderline personality disorder is likely an important factor for understanding NSSI for men as well as women in correctional populations. The correlation between NSSI and

other symptoms of borderline personality disorder become evident when considering the affect regulation function of NSSI. Given that affect regulation is the most widely supported motivation for engaging in NSSI, it is anticipated that individuals with a lack of emotional regulation, as is the hallmark of borderline personality disorder, would be at increased risk for NSSI. Additionally, impulsivity is associated with NSSI (Carli et al, 2010; Simeon et al., 1992) and is a symptom of borderline personality disorder.

Individuals with substance abuse disorders are also more likely to engage in NSSI than those without such disorders (Borrill, Snow, Medlicott, Paton, 2003; Langbehn & Pfohl, 1993; Young, Justice, Erdberg, 2006). Chronic alcohol misuse and acute alcohol intoxication have been associated with NSSI and suicide attempts (Black, Yates, Petty, Noyes & Brown, 1986; Favazza & Conterio, 1989; Merrill, Milner, Owens & Vale, 1992; Pattison & Kahan, 1983; Roy, Lamparski, DeJong, Moore, & Linnoila, 1990; Suokas & Lönnqvist, 1995). Research has not yet determined the nature of the relationship between SIB and substance use, although some possible mechanisms have been proposed. In a review of the existing literature, Hufford (2001) suggests that distal risk factors (e.g., alcohol dependence, comorbid psychological disorders, negative life events) increase the risk for suicide, while proximal risk factors (e.g., acute alcohol intoxication) propel increased risk into action. Hufford suggests four mechanisms by which alcohol increases the risk of engaging in SIB: (1) intoxication may increase psychological distress; (2) alcohol increases aggressiveness; (3) alcohol may be used to decrease inhibitions so an individual may act on his or her urges; and (4) alcohol's ability to constrict cognitive functioning, limiting an individual's ability to identify and implement alternative coping strategies. SIB may be more likely to occur during periods of acute intoxication or SIB may result from the consequences of chronic substance use, given that chronic use may cause neurological deficits and impairments in functioning (Hufford, 2001; McCloskey & Berman, 2003). Rates of substance abuse are particularly high in offender populations, with approximately 69% of Canadian federal offenders having problems with substance abuse (Kunic & Grant, 2006), making a relationship between SIB and substance use a particularly important one for offender populations. In a previous study of NSSI in women offenders in Canada, 56 women who had a history of NSSI were interviewed, and 17 of these women pointed to the relationship between their NSSI and substance use (Power & Usher, 2010). Ten of these women reported that substance use was related to an increase in NSSI while seven women reported that substance use was used as a substitute for NSSI, resulting

in a decrease of that behaviour.

Past research has linked the experience of a head injury with NSSI (Hillbrand, Krystal, Sharpe, & Foster, 1994; Lanes, 2009). This relationship was not found in a sample of federally sentenced men residing in institutions (Power & Usher, 2011b).

Same-sex attraction is another factor that has been found to be associated with suicide attempts and NSSI in various populations. One study found that same sex-attraction, and not necessarily homosexual activity, was linked to an increased risk for self-injurious behaviour for both men and women (Skegg, Williams, Paul, Dickson, & Nada-Raja, 2003). Yet, there is still more evidence to suggest that the relationship between same-sex attraction and NSSI is stronger for men. De Graaf, Sandfort, and Have (2006) found that men with same-sex attraction were significantly more likely to engage in NSSI and suicide attempts. The finding was only true for women when psychiatric morbidity was not controlled.

A relationship between NSSI and a history of childhood abuse has been well-established in mixed-gender samples (Gratz, Conrad, & Roemer, 2002; Lipschitz et al., 1999; van der Kolk, Perry, & Herman, 1991; Wiederman, Sansone, & Sansone, 1999), with at least one study focusing on young male offenders (Matsumoto et al., 2005). This relationship is correlational, however, and the mechanism by which abuse may lead to NSSI is not currently well-understood (Yates, Carlson, & Egeland, 2008). One possible mechanism through which abuse could lead to NSSI is through changes in brain structure in response to stress (Buchanan & Tranel, 2008; Sapolsky, 1996). There is some evidence that excessive exposure to cortisol, a hormone produced in response to stress, can lead to damage to the hippocampus, a part of the brain responsible for learning and memory (Squire & Zola-Morgan, 1991). This change may lead to the learning of maladaptive coping strategies. In a study of male offenders, participants with a history of NSSI had significantly greater levels of all types of abuse (i.e., emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect) compared to those who did not have a history of NSSI (Power & Usher, 2011b).

After exposure to a traumatizing event, some people develop posttraumatic stress disorder (American Psychiatric Association, 2000). This disorder is characterized by symptoms such as anxiety, being easily startled, reliving or re-experiencing the trauma, and avoiding thoughts, situations, or people that remind the individual of the traumatic event. A relationship between posttraumatic stress disorder and NSSI has been found in several populations, including

correctional populations (e.g., Kisiel & Lyons, 2001; Prinstein et al., 2008; Salina, Lesondak, Razzano & Weilbaecher, 2007; Weaver, Cahrd, Mechanic & Etzel, 2004; Weierich & Nock, 2008). This disorder may manifest as a result of child abuse, which is common among offenders. Studies have found high rates of childhood abuse in offenders, with estimates up to 65% (Johnson, et al., 2006; Weeks & Widom, 1998). Among Canadian federal offenders, men and women who had a history of NSSI were more likely to have experienced childhood abuse (Power & Usher, 2011a, 2011b).

Current Study

This report is part of a program of research on SIB undertaken at the Research Branch of the Correctional Service of Canada. This research was initiated with a literature review on SIB (Power & Brown, 2010) and a report comparing suicides and SIB within CSC (Power & Riley, 2010). Following these reports, national studies of NSSI in women (Power & Usher, 2010, 2011a; 2011c, 2011d) and men (Power, Beaudette, & Usher, 2012; Power & Usher, 2011b; Power, Usher, & Beaudette, 2012) were completed. However, the study of men excluded offenders in psychiatric treatment facilities. Given that many studies have found an association between NSSI and mental health disorders, it is important to include this group to determine if their motivations and patterns of NSSI differ from those of offenders in non-treatment centre correctional facilities.

In male federal offenders in Canada, associations have been found between NSSI and major depressive disorder, alcohol and substance abuse, panic disorder, posttraumatic stress disorder, antisocial personality disorder, and borderline personality disorder (Power, Usher, & Beaudette, 2012). Assuming that men who reside in treatment centres are more likely to experience serious mental disorders, it is important to determine whether the motivations, emotions, and events surrounding their NSSI differ from that of men in the general offender population. The results presented in the current report used a methodology similar to the one used with women (Power & Usher, 2010) and men not residing in treatment centres (Power, Beaudette, & Usher, 2012).

Method

Participants

Participants were recruited from regional treatment centres in each of the five regions of CSC. Regional treatment centres are accredited psychiatric institutions operated by CSC. These institutions are designed to offer treatment to offenders with the most serious mental health needs. Few offenders spend their entire sentence at a treatment centre; rather, a mental health strategy is in place that aims to cascade offenders into non-treatment centre facilities. Thus, the population of treatment centre and non-treatment centre offenders does overlap. However, offenders in treatment centres have, on average, more serious mental health issues than those who have not spent time in treatment centres. The institutions included in the study were Shepody Healing Centre (Atlantic), Regional Mental Health Centre (Quebec), Regional Treatment Centre (Ontario), Regional Psychiatric Centre (Prairies), and Regional Treatment Centre (Pacific).

Two lists of offenders were generated before visiting the institutions: (1) offenders who had evidence of SIB on their files; and (2) offenders without evidence of SIB. Offenders on the second list were matched to those on the first list on several demographic and criminogenic variables. Participants could also be nominated at the institutions. The demographic and criminogenic profile of the participants is presented in Table 1, along with, for comparison purposes, a profile of all men who resided in treatment centres during the study period. In most cases, the study group appears similar to the comparison sample of all individuals residing in treatment centres during the study period (N = 447). However, offenders who are not Aboriginal or Caucasian and those who are married are somewhat underrepresented in the study sample and maximum security offenders are somewhat overrepresented.

The distribution of the sample by region is presented in Table 2, along with the comparison group. Compared to the general treatment centre population, the study sample appears to be more likely to be single, divorced, separated, or widowed and security classified as maximum security. Atlantic region is disproportionately represented among the study sample and the Pacific region is underrepresented.

Table 1

Demographic and Criminal Profile of Participants and Comparison Sample

	Total Study Sample *N* = 90 % (*n*)	CSC's Male Offenders in Treatment Centres[1] *N* = 447 % (*n*)
Ethnicity[a]		
Aboriginal	39.5 (26)	27.0 (120)
Black	2.3 (2)	4.7 (21)
Caucasian	67.0 (59)	62.8 (279)
Other	1.1 (1)	5.4 (24)
Marital status[b]		
Married or common law	13.3 (12)	23.3 (104)
Single, divorced, separated, or widowed	86.7 (78)	76.6 (341)
Security level[c]		
Maximum	26.6 (24)	17.3 (76)
Medium	70.0 (63)	76.3 (335)
Minimum	3.3 (3)	6.4 (28)
Major admitting offence		
Homicide and manslaughter	36.7 (33)	34.0 (152)
Robbery	11.1 (10)	11.6 (52)
Drug offences	1.1 (1)	1.1 (5)
Assault	13.3 (12)	12.1 (54)
Sexual offences	21.1 (19)	18.6 (83)
Other violent offences	2.2 (2)	2.5 (11)
Other non-violent offences	14.4 (13)	20.1 (90)

Table 1 (continued)

Demographic and Criminal Profile of Participants and Comparison Sample

	Total Study Sample *N* = 90 % (*n*)	CSC's Male Offenders in Treatment Centres[1] *N* = 447 % (*n*)
Criminal history risk[d]		
Low	3.3 (3)	5.6 (25)
Medium	16.9 (15)	17.3 (77)
High	79.8 (71)	77.0 (342)
Criminogenic need level[e]		
Low	2.3 (2)	1.8 (8)
Medium	10.3 (9)	17.8 (79)
High	87.4 (76)	80.4 (357)
Sentence length		
Less than 5 years	32.2 (29)	28.0 (125)
More than 5 years	24.4 (22)	25.0 (112)
Life	43.3 (39)	47.0 (210)

Note. Risk refers to static factors such as criminal history, offence severity, and probability of future re-offending. Need refers to dynamic factors that can change through intervention such as employment skills, substance abuse, and attitude. [1] Correctional Service of Canada. (2011). Unpublished raw data of federally sentenced men in treatment centres from December 2010 to March 2011. Retrieved December 28th, 2011 from Correctional Service of Canada Offender Management System.
[a]*n* = 5 missing. [b]*n* = 2 missing. [c]*n*= 8 missing. [d]*n* = 4 missing [e]*n* = 6 missing

Table 2

Distribution of Sample and Comparison by Region

Region	Total Study Sample *N* = 90 % (*n*)	CSC's Male Offenders in Treatment Centres[1] *N* = 447 % (*n*)
Atlantic	15.6 (14)	4.5 (20)
Quebec	15.6 (14)	6.5 (29)
Ontario	20.0 (18)	19.0 (85)
Prairies	33.3 (30)	32.2 (144)
Pacific	15.6 (14)	37.8 (169)

Note. [1] Correctional Service of Canada. (2011). Unpublished raw data of federally sentenced men in treatment centres during from December 2010 to March, 2011. Retrieved December 28th, 2011 from Correctional Service of Canada Offender Management System.

Measures

Several measures were administered to participants. These measures included a semi-structured interview portion and several paper-and-pencil questionnaires.

Semi-structured interview protocol. The interview questions used in the present study were designed for previous studies of NSSI in men and women offenders in CSC (Power & Usher, 2010; Power, Beaudette, & Usher, 2012). The original protocol was developed based on findings in the literature and the research questions posed by these studies. The interview addressed mental health status and history, history of abuse, history of suicide attempts, and history of NSSI (see Appendix A). Questions were listed along with possible prompts or follow-up questions that could be used at the discretion of the interviewer. It was anticipated that interview length would vary considerably, particularly based on whether the individual did or did not have a history of NSSI. Length of this portion of the interview did vary substantially between participants, ranging from 2–47[1] minutes.

Structured Clinical Interview for DSM Axis I Disorders (SCID-I). Portions of the Structured Clinical Interview for DSM Axis I Disorders (SCID-I) were administered. The SCID-I is a semi-structured interview developed to enable the administrator to assess the major DSM-IV Axis I diagnoses (First, Spitzer, Gibbon, & Williams, 2007). In the current study, the

[1] Interviews with offenders who did not a have history of SIB or suicide attempts were usually very short (e.g., two to five minutes).

research version of the SCID-I was used. The interview was modified to only include those disorders that, based on past research or theoretical rationale, were hypothesized to be related to NSSI. Disorders assessed in the current study were major depressive disorder, dysthymic disorder, alcohol and substance use disorder, panic disorder, obsessive-compulsive disorder, posttraumatic stress disorder, and generalized anxiety disorder.

The SCID-I is considered to be the "gold standard" in semi-structured assessment of major mental health disorders (Lobbestael, Leurgans, & Arntz, 2011). It has been used with male and female populations in community, psychiatric, and offender populations (Steadman, Robbins, Islam & Osher, 2007; Trestman, Ford, Zhang, & Wiesbrock, 2007; Zanarini et al., 2000). The SCID-I has also been used in French with male and female psychiatric patients (Damsa, Cailhol, Di Clemente, Haupert, & Pull 2005) and male offenders (Daigle & Côté, 2002). Studies have found fair to excellent validity and reliability ($\alpha = .61$ to $\alpha = 1.00$; kappa scores of agreement on relevant axes were between .64 and 1.0) on the disorders relevant here (Lobbestael et al., 2011; Zanarini et al., 2000; Zanarini & Frankenburg, 2001). In a psychiatric population ($N = 310$), the diagnoses made using the SCID-I was comparable to diagnoses made by psychiatrists in terms of sensitivity (0.50-1.00), specificity (0.94-1.00), and agreement (kappa = 0.66 - 0.90; Fennig, Craig, Lavelle, Kovasznay, & Bromet, 1994).

Structured Clinical Interview for DSM Axis II Disorders (SCID-II). The SCID-II is a semi-structured interview that was designed for the assessment of DSM Axis II (personality) disorders (First, Gibbon, Spitzer, Williams, & Benjamin, 1997). It is also considered a gold standard in semi-structured assessment of personality disorder diagnoses, and has been used with male and female offenders (Guy, Poythress, Douglas, Skeem, & Edens, 2008; Komarovaskaya, Loper, & Warren, 2007; Ullrich et al., 2008). The SCID-II was shortened to only assess borderline personality disorder and antisocial personality disorder. The interrater reliability of the SCID-II is moderate to excellent for borderline personality disorder (.48-.91) and antisocial personality disorder (0.41-.95; Dreessen & Arntz, 1998; Lobbestael et al., 2011; Maffei, et al., 1997).

The Short Form Buss-Perry Aggression Questionnaire (BPAQ-SF). The Short Form Buss-Perry Aggression Questionnaire (BPAQ-SF) is a 12-item questionnaire (Bryant & Smith, 2001) based on the original 29-item Buss-Perry Aggression Questionnaire (Buss & Perry, 1992). Items are rated on a Likert scale ranging from 1 (very unlike me) to 5 (very like me). The BPAQ-

SF has been validated on male and female offenders and confirmatory factor analyses supported the four-factor model proposed by Diamond, Wang, and Buffington-Vollum (2005): (1) physical aggression; (2) verbal aggression; (3) anger; and (4) hostility. Reliability for this four-factor model is good (α =.63 to α =.73), and is the structure used in this study. In the present study, the reliability ranged from poor (α = .57) to good (α = .74). For the French language version of the questionnaires, translated for previous NSSI research, the internal consistency ranged from poor (α = .36) to excellent (α = .90). Three of the four subscales were in the excellent range.

Depression, Hopelessness & Suicide (DHS) Screening Form. The Depression, Hopelessness & Suicide (DHS) Screening Form was developed and tested on medium security male inmates in Canada (Mills & Kroner, 2004). The questionnaire has subscales for depression and hopelessness, along with critical indicators of suicide risk. The questionnaire consists of 39 true or false statements. The scale demonstrated strong psychometric properties in previous studies with good internal consistency using Cronbach's alpha (α =.82 to α = .90). Internal consistency scores for the depression and hopelessness scales were excellent at α = .91 and α = .88, respectively. The French questionnaires demonstrated a range of reliability scores from poor for the depression scale (α = .61) to good for the hopelessness scale (α = .87).

Brief COPE. The Brief COPE (Carver, 1997) is a shortened version of the COPE Inventory (Carver, Scheier & Weintraub, 1989) designed to assess coping strategies. The Brief COPE consists of 28 items rated on a four-point Likert scale from "I don't do this at all" to "I do this a lot". The following subscales can be derived from the questionnaire: 1) self-distraction; 2) active coping; 3) denial; 4) substance use; 5) use of emotional support; 6) use of instrumental support; 7) behavioural disengagement; 8) venting; 9) positive reframing; 10) planning; 11) humour; 12) acceptance; 13) religion; and 14) self-blame. There is no total score for this questionnaire. The subscales have internal consistency scores ranging from acceptable (α = .50) to excellent (α = .90). A range of internal consistencies were recorded in the study from α = .39 to α = .94 for the English questionnaires. Four of the subscales had internal consistency scores below α = .63. The French questionnaires ranged from α = -.28 to α = .86.

Childhood Trauma Questionnaire (CTQ). The CTQ is a 28-item self-report questionnaire that assesses history of abuse and neglect in childhood (Bernstein & Fink, 1998). All items are rated on a five-point Likert scale from "never true" to "very often true". The inventory assesses five types of maltreatment, which have been validated using confirmatory

factor analysis: (1) emotional abuse; (2) physical abuse; (3) sexual abuse; (4) emotional neglect; and (5) physical neglect (Bernstein et al., 2003). Each of these five types of maltreatment is assessed with five questionnaire items. The measure has been validated with various populations including both men and women, university students, diverse ethnicities, psychiatric patients, and other hospitalized patients (Strickland, 2008). The subscales have internal consistency scores ranging from satisfactory ($\alpha = .66$) to excellent ($\alpha = .92$). Test-retest reliability scores are high ($r = .79$ to .86). For the French version (Paquette, Laporte, Bigras, & Zoccolillo, 2004) the psychometrics are similar to the English version, with internal consistency scores ranging from satisfactory ($\alpha = .68$) to excellent ($\alpha = .90$) and high test-retest reliability scores ($r = .68$ to .90). In the present study, Cronbach's alpha scores ranged from .82 to .97 on the abuse and neglect subscales. For the French questionnaires, similar reliability coefficients were obtained with a range of .74 to .93 for the abuse and neglect subscales. The Cronbach's alpha could not be calculated for the minimization scale as there was not enough variability between individual item scores.

Brief Symptom Inventory (BSI). The BSI is a 53-item self-report measure designed to assess nine dimensions of psychological distress (Derogatis, 1993). The nine dimensions are: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. In addition, overall indices of distress are provided by three subscales: global severity index, positive symptom distress index, and positive symptom total. Items are rated on a five-point Likert scale from 0 (not at all) to 4 (extremely). Evidence of good internal consistency has been reported as ranging from .73 on the psychoticism and paranoia dimensions to .88 on the anxiety scale (Croog et al., 1986; Aroian & Patsdaughter, 1989 in Derogatis, 1993). Good reliability has also been found with the global severity index with a Cronbach's alpha coefficient of .97 (Derogatis, 1993). In the present study, internal consistency scores ranged from $\alpha = .72$ to $\alpha = .90$. French language questionnaires has internal consistencies ranging from $\alpha = .41$ to $\alpha = .94$.

The Offender Self-Injurious Behaviour Inventory (OSIBI). The OSIBI was designed to gather information regarding SIB in offenders. Questions inquire about motivations for engaging in NSSI, onset of NSSI, the effects of incarceration, and types of NSSI undertaken. Sexual orientation was also assessed on this measure. In past studies this question was asked in semi-structured interviews, however, given the nature of the questions and the study sample it

was decided that men might feel more comfortable answering more openly in a written format. Internal consistency could not be calculated for this measure as there are no subscales. The OSIBI demonstrates moderate to high concurrent validity as assessed in a previous study (Power & Usher, 2011c). A copy of the OSIBI can be found in Appendix B.

Impulsivity indicators. To measure impulsivity, fourteen items were selected from the Dynamic Factor Intake Assessment (DFIA; CSC, 2007) which is administered to all offenders at the beginning of their sentence. Items were rated dichotomously (1 = yes; 0 = no) to form a continuous scale with possible scores ranging from 0 to 14. Scores on the indicators were compared to scores obtained on the Barratt Impulsivity Scale (Stanford et al., 2009) which was completed by half of the sample (n = 46). Results indicate a weak correlation (r = .145, p > .10). A list of DFIA items that were used to form the impulsivity indicators can be found in Appendix C.

Procedure/Analytic Approach

Two researchers attended each treatment centre to recruit participants and collect data. Ten men chose to participate in French. Recruitment and collection procedures were modified based on the logistics and culture of each treatment centre. Prior to visiting an institution to recruit participants, a list of participants who had an incident of SIB recorded was generated, based on indicators found in the OMS. A comparison group of offenders who were not known to have a history of self-injury was created and matched on age, date of admission, and Aboriginal status. Offenders were placed on the list in random order and every attempt was made to approach offenders in the order of the list. However, participants could also volunteer to participate or be nominated to participate by staff. If an offender was subsequently identified as having a history of NSSI that had not been on the file, he was moved from the comparison group to the NSSI group. Some offenders were not able to participate for various reasons (e.g., transferred to another institution, attending work or programs, health reasons); therefore, not every person on the list participated in the study.

All interviews were conducted in a private room within the institution to ensure confidentiality. Participants were not given incentives or compensation for their participation. A verbal summary of the informed consent form was provided and the men were required to sign it before the study began. Participants were informed of their right to withdraw from the study at

any time.

Interviews were recorded using a digital recorder when participants consented. Afterwards, all interviews were transcribed verbatim by a professional transcription firm. In the event that a participant preferred not to be recorded, notes of their responses were taken. In total, nine participants requested to not be recorded and five interviews could not be transcribed due to the poor nature of the recordings, for a total of 14 missing transcriptions.

NSSI, suicide attempts, and comparison groups. All participants were assigned to one of two groups: those who had a history of engaging in NSSI and those who had no history of NSSI. Group membership was determined by interview and questionnaire data (the question on the OSIBI that read "Have you ever intentionally injured yourself *without* trying to kill yourself?"). In 91.9% of cases, both sources of data were available and in agreement. Ten cases were missing data from the semi-structured interview and therefore group membership was based on the questionnaire data. Additionally, one participant was missing data from the OSIBI questionnaire and his group membership was determined solely by responses from the interview.

There were discrepancies between the interview and questionnaire data for six cases. In these instances, a history of NSSI was determined from questionnaire data. The subsequent questions on the OSIBI examined motivations and types of NSSI in detail. It was determined that participants who provided answers to these questions may have felt uncomfortable discussing these behaviours in interviews. Therefore, the questionnaire data was taken to be a more accurate representation of their history of NSSI.

The same process was carried out to establish whether participants had ever attempted suicide. Interview and questionnaire data (the question on the OSIBI that read "Have you ever *actually tried* to kill yourself?") were examined. In 96% of cases (n = 72) both types of data were available and in agreement. Ten participants were missing interview data, consequently, group membership was based solely on questionnaire data. All participants completed the question regarding history of suicide attempts on the OSIBI questionnaire. There were three cases in which a discrepancy between interview and questionnaire data occurred. In these situations, the previous protocol was observed and questionnaire data was taken to be a more reliable account of suicide attempt history.

Statistical techniques. Chi-square tests were used to assess differences in frequency distributions between those with and without a history of NSSI. *t*-tests were conducted to

determine statistically significant differences between groups. The Bonferroni correction was applied to ensure a more stringent *p*-value was used to reduce the likelihood of finding a significant result by chance. All significant results reported are based on the Bonferroni-adjusted cut-offs.

Path analysis. Path analysis is an extension of multiple regression. This technique was used to assess the proposed trajectories to NSSI. Previous research has used path analysis to investigate the links between life experiences and offending (Belknap, 2007). It can be used to evaluate causal hypotheses; however, it cannot determine the direction of causality (Webley & Lea, 1997). One of the strengths of path analysis is its ability to estimate the significance and extent of causal connections between groups of variables (Webley & Lea, 1997). In this study, the results of the path analysis were correlational and therefore causality cannot be established. The variables in the model and the temporal order of those variables were determined by the author based on prior research and NSSI theory.

Missing data. Data were checked for entry errors, outliers, and missing data. When outliers were found, the hardcopy questionnaire booklet was checked for the correct response. All outliers found were determined to be data entry errors. The interviews of two men were not analyzed due to disorganized speech and an inability to properly and methodically code their responses.

Four participants were excluded from the analysis as they had participated in the semi-structured interview but did not complete any of the questionnaires. Three participants each skipped one questionnaire (a different questionnaire for each one); therefore, those participants were excluded from the analysis involving the particular missing questionnaire but were included in all others.

Results

History of SIB. Participants were asked in the interview and questionnaire about their history of suicide attempts and NSSI and the location in which these behaviours occurred (see Tables 3 and 4). Results were similar across data sources, with a minor discrepancy apparent between the interview and questionnaire for participants who had a history of NSSI but had no experience with suicide attempts. About three-quarters of the men with a history of NSSI had attempted suicide in the past and about 60% of men who did not have a history of NSSI attempted suicide. While the prevalence of suicide attempts is higher in those with a history of NSSI, it is still notably high in the non-NSSI group.

In Table 4, participants were divided into two groups (those with and without a history of NSSI) to compare demographic information and criminogenic variables. Chi-square tests were conducted to determine whether significant differences were present between the groups. When the expected frequency was less than five, Yates' chi-square was reported (Yates, 1934). Results indicate that security level was the only variable with a statistically significant difference between the two groups ($\chi^2 = 7.53$, $df = 1$, $p = .05$); however, after applying the Bonferroni correction ($p = .05/7 = 0.0071$), this finding was no longer significant.

Table 3

History of NSSI and Suicide Attempts in Participants by Group

	NSSI		No NSSI	
	Interview *N* = 41 % (*n*)	Questionnaire *N* = 39 % (*n*)	Interview *N* = 36 % (*n*)	Questionnaire *N* = 45 % (*n*)
At least one incident of NSSI ever	100.0 (41)	100.0 (39)	--	--
At least one suicide attempt ever	75.6 (31)	76.9 (30)	61.1 (22)	60.0 (27)
NSSI only (no suicide attempts)	24.4 (10)	23.1 (9)	--	--

Note. NSSI = non-suicidal self-injury.

Table 4

Demographic and Criminal Profile of Participants by History of NSSI

	NSSI (N[a] = 42) % (n)	No NSSI (N = 43) % (n)	χ^2
Ethnicity[b]			
Aboriginal	31.0 (13)	27.9 (12)	
Black	2.4 (1)	2.3 (1)	0.49
Caucasian	64.3 (27)	65.1 (28)	
Other	--	2.3 (1)	
Marital Status			
Married or common law	11.9 (5)	14.0 (6)	0.08
Single, divorced, separated, or widowed	88.1 (37)	86.0 (37)	
Criminogenic Need Level[c]			
Low	--	4.7 (2)	
Medium	14.3 (6)	7.0 (3)	1.00
High	81.0 (34)	86.0 (37)	
Criminal History Risk Level[d]			
Low	2.4 (1)	4.7 (2)	
Medium	23.8 (10)	9.3 (4)	2.45
High	71.4 (30)	86.0 (37)	
Major admitting offence			
Homicide and manslaughter	31.0 (13)	44.2 (19)	
Robbery	9.5 (4)	11.6 (5)	
Drug offences	--	2.3 (1)	
Assault	14.3 (6)	9.3 (4)	2.12
Sexual offences	21.4 (9)	23.3 (10)	
Other violent offences	2.4 (1)	--	
Other non-violent offences	21.4 (9)	9.3 (4)	

Table 4 (continued)

	NSSI (N^a = 42) % (*n*)	No NSSI (*N* = 43) % (*n*)	χ^2
Security Level			
Maximum	40.5 (17)	11.6 (5)	
Medium	57.1 (24)	83.7 (36)	7.53*
Minimum	2.4 (1)	4.7 (2)	
Sentence Length			
Less than 5 years	31.0 (13)	30.2 (13)	
More than 5 years	28.6 (12)	23.3 (10)	0.41
Life	40.5 (17)	46.5 (20)	

Note. NSSI = Non-suicidal self-injury. All findings non-significant after applying Bonferroni correction (p = .05/7 = 0.0071).
[a] 2 participants missing data from the data pull in OMS. [b] n = 2 missing. [c] n = 3 missing. [d] n = 1 missing.
* p < .05.

Current NSSI. Participants with a history of NSSI were asked whether they were continuing to self-injure at the time of the study. Twenty-four percent of the men (n = 10) stated they still engaged in the behaviour and 68% (n = 28) stated they no longer self-injured. For 7.3% of the men (n = 3), it was unclear from the interviews whether they currently self-injured or whether the behaviour had ceased.

Location of incident. The men were asked to describe the location where they first self-injured. Table 5 illustrates that the majority of participants in this sample engaged in NSSI for the first time while in the community, followed by non-CSC institutions (i.e., young offender institutions, provincial institutions).

Table 5

Location of First Incident of NSSI

Location of First NSSI Incident	N^a = 38 % (*n*)
Community	52.6 (20)
Institution	
Non-CSC Institution (provincial or juvenile facility)	26.3 (10)
CSC Institution	21.1 (8)

Note. NSSI = Non-suicidal self-injury.
[a]*n* = 3 missing.

The men were assessed on several scales that have been associated with NSSI in past research. *t*-tests were used to determine whether the scale means of participants with a history of NSSI differed significantly from those without a history of NSSI. The Bonferroni correction was applied to account for multiple comparisons ($p = .05/38 = 0.0013$). The Buss-Perry Physical Aggression questionnaire (Bryant & Smith, 2001) total score and physical aggression subscale were the only items that remained statistically significant after applying the Bonferroni correction. Table 6 illustrates the means and standard deviations for both groups on each subscale.

Impulsivity is a factor that is believed to be highly associated with NSSI. Participants were assessed based on 14 factors taken from the DFIA. Unlike findings from past research, there were no significant differences between the men with and those without a history of NSSI. This non-significant finding may be due to moderate amounts of missing data and a relatively small sample size.

Table 6

A Comparison of Participants With and Without a History of NSSI Based on Questionnaire Data

Measures	NSSI Mean (*SD*)	No NSSI Mean (*SD*)	*t*
Depression, Hopelessness, and Suicide Scale	*N* = 34	*N* = 41	
Depression	8.85 (4.91)	7.23 (5.20)	-1.36
Hopelessness	3.56 (3.59)	3.29 (2.93)	-.354
Buss-Perry Aggression Questionnaire	*N* = 39	*N* = 45	
Physical Aggression	12.20 (4.43)	8.89 (3.90)	-3.67***[†]
Verbal Aggression	8.28 (3.23)	6.91 (3.50)	-1.86
Anger	5.50 (2.54)	4.27 (2.54)	-2.23*
Hostility	9.68 (3.17)	8.02 (3.83)	-2.15*
Total	35.65 (9.98)	28.09 (10.98)	-3.31***[†]
Childhood Trauma Questionnaire	*N* = 39	*N* = 45	
Emotional Abuse	15.64 (6.56)	11.82 (6.68)	-2.64**
Physical Abuse	13.49 (6.98)	10.23 (5.79)	-2.3*
Sexual Abuse	14.08 (8.06)	10.20 (7.76)	-2.23*
Emotional Neglect	15.10 (5.84)	11.87 (6.06)	-2.48*
Physical Neglect	11.41 (5.40)	9.76 (5.51)	-1.39
Brief Symptom Inventory	*N* = 39	*N* = 45	
Somatization	8.08 (7.16)	7.30 (8.25)	-.46
Obsessive-Compulsive	9.56 (6.12)	8.09 (6.84)	-1.04
Interpersonal Sensitivity	6.08 (4.47)	4.91 (4.37)	-1.21
Depression	9.49 (6.89)	7.30 (6.62)	-1.48
Anxiety	8.69 (6.36)	6.45 (6.67)	-1.56
Hostility	5.26 (4.24)	3.93 (4.53)	-1.38
Phobic Anxiety	5.11 (4.86)	4.27 (4.95)	-.775
Paranoid Ideation	8.97 (5.13)	6.40 (5.01)	-2.32*
Psychoticism	7.92 (4.58)	5.24 (4.95)	-2.54*
Global Severity Index[a]	1.15 (1.09)	1.82 (2.12)	1.73
Positive Symptom Distress Index	2.34 (0.65)	2.29 (0.76)	-0.30

Table 6 (continued)

Measures	NSSI Mean (*SD*)	No NSSI Mean (*SD*)	*t*
Brief COPE	*N* = 40	*N* = 44	
Self-Distraction	6.05 (1.52)	5.67 (2.03)	-.99
Active Coping	6.28 (1.50)	6.09 (1.80)	-.51
Denial	4.00 (1.85)	4.09 (2.11)	.21
Substance Use	4.15 (2.35)	3.84 (2.52)	-.58
Emotional Support	5.68 (2.03)	5.39 (2.24)	-.62
Instrumental Support	6.15 (1.64)	5.59 (2.17)	-1.34
Behavioural Disengagement	3.80 (1.91)	3.66 (1.94)	-.34
Venting	5.25 (1.72)	4.66 (1.96)	-1.46
Positive Reframing	5.70 (1.77)	6.09 (2.08)	.92
Planning	6.08 (1.54)	6.14 (2.02)	.16
Humour	4.53 (2.12)	4.09 (2.17)	-.92
Acceptance	6.23 (1.69)	6.27 (1.80)	.13
Religion	4.85 (2.05)	5.73 (2.42)	1.79
Self-Blame	5.95 (1.47)	5.52 (2.01)	-1.12
Impulsivity	*N* = 40	*N* = 45	
	4.95 (3.63)	4.07 (3.02)	-1.22

Note. NSSI = Non-suicidal self-injury.
[a] 6 missing. [†] Statistically significant after Bonferroni correction ($p < .0013$).
* $p < .05$. ** $p < .01$. *** $p < .001$.

Mental Health

The SCID-I and SCID-II were used to assess the participants' mental health. Table 7 represents a comparison of participants with and without a history of NSSI on mental health categories. Chi-square tests were conducted to determine whether there were significant differences between participants who had and had not engaged in NSSI and the likelihood that they met the diagnostic criteria for a major mental health disorder. Bonferroni correction was calculated for the multiple comparisons ($p = .05/10 = 0.005$). Participants with a history of NSSI were more likely to have met the criteria for any disorder other than alcohol or substance abuse or dependence than those without a history of NSSI. Men who had engaged in NSSI were also

more likely to meet the diagnostic criteria for antisocial personality disorder. This difference remained significant even after applying the Bonferroni correction. Meeting the criteria for any disorder, non-alcohol substance abuse or dependence, and borderline personality disorder were no longer statistically significant after applying the Bonferroni correction.

Table 7

A Comparison of Participants With and Without a History of NSSI on Mental Health Categories Based on SCID Data

	NSSI *N* = 40 % (*n*)	No NSSI *N* = 45 % (*n*)	χ^2
Criteria met for any disorder	95.0 (38)	80.0 (36)	4.23*
Criteria met for any disorder other than alcohol or substance abuse or dependence	77.5 (31)	43.7 (21)	8.48**†
Major depressive disorder (current or past)	40.0 (16)	22.2 (10)	3.15
Dysthymic disorder	0.08 (3)	0.04 (2)	--
Alcohol abuse or dependence	65.0 (26)	53.3 (24)	1.19
Non-alcohol substance abuse or dependence	80.0 (32)	53.3 (24)	6.7**
Panic disorder	27.5 (11)	11.1 (5)	3.72
Obsessive-compulsive disorder	15.0 (6)	0.04 (2)	--
Posttraumatic stress disorder	22.5 (9)	0.09 (4)	3.03
Generalized anxiety disorder	22.5 (9)	0.09 (4)	3.03
Antisocial personality disorder	55.0 (22)	24.4 (11)	8.32**†
Borderline personality disorder	37.5 (15)	15.6 (7)	5.32*

Note. NSSI = Non-suicidal self-injury. SCID = Structured Clinical Interview for Diagnosis of Axis I and Axis II Disorders. Chi-square is not reported when at least 20% of expected frequencies are less than 5.
† Statistically significant after Bonferroni correction ($p < .005$).
* $p < .05$. ** $p < .01$.

Participants were asked in the interviews if they had ever been formally diagnosed with a psychological disorder. Table 8 provides a comparison of men with and without a history of NSSI on self-reported mental health diagnoses. Chi-square tests were used to determine whether there were statistically significant differences between groups. A Bonferroni correction was calculated ($p = .05/5 = 0.01$) and applied. Participants who have a history of NSSI are more

likely to report having been diagnosed with an anxiety disorder, which remained significant after applying the Bonferroni correction. Given the small sample size for each mental health disorder, statistical significance was difficult to establish and several chi-square results could not be provided.

There are inconsistencies between the data obtained by the SCID and the information reported in the interviews (see Table 8). The SCID modules assess lifetime prevalence of psychological disorders in addition to current disorders; therefore, this could partially explain the observed discrepancies. Several of the participants may have met the diagnostic criteria for a mental health disorder at some point in their lives, but may have failed to seek help at the time, or past evaluations may have simply assessed them for current disorders. As a result, they may not have received formal mental health diagnoses.

Table 8

A Comparison of Participants With and Without a History of NSSI on Mental Health Diagnoses Based on Interview Data

Disorder Assessed by Interview	NSSI *N* = 41 % (*n*)	No NSSI *N* = 36 % (*n*)	χ^2
Ever diagnosed with a psychological disorder	82.9 (34)	66.7 (24)	2.73
Schizophrenia	43.9 (18)	30.6 (11)	1.45
Anxiety disorder (including obsessive-compulsive disorder)	26.8 (11)	2.8 (1)	8.43**†
Bipolar	19.5 (8)	13.9 (5)	0.43
Depression	19.5 (8)	16.7 (6)	0.10
Attention-deficit hyperactivity disorder	17.1 (7)	8.3 (3)	--
Antisocial personality disorder	17.1 (7)	5.6 (2)	--
Borderline personality disorder	12.2 (5)	--	--
Substance abuse disorder	2.4 (1)	--	--
Posttraumatic stress disorder	2.4 (1)	2.8 (1)	--
Other personality disorder	2.4 (1)	2.8 (1)	--
Impulse control disorder	--	2.8 (1)	--

Note. NSSI = Non-suicidal self-injury. Chi-square is not reported when at least 20% of expected frequencies are less than 5.
† Statistically significant after Bonferroni correction ($p < .01$).
* $p < .05$. ** $p < .01$.

Experience of a Head Injury

Participants were asked during the interview if they had ever experienced a moderate to severe concussion or any type of head injury that required stitches. Seventy-six percent of participants ($n = 31$) with a history of NSSI reported experiencing a past head injury compared to 69% ($n = 25$) of those who did not have a history of NSSI ($n = 21$ missing). A chi-square test revealed that this difference was not significant (χ^2 (1) = 0.37, $p > .05$), therefore experiencing a head injury was not associated with NSSI in this sample, although the rates were high for both groups.

Sexual Behaviour and Orientation

Participants were asked to report their self-identified sexual orientation and their sexual behaviour before and after entering the institution (see Table 9). Chi-square tests were conducted to determine whether there were statistically significant differences between men with and without a history of NSSI. Chi-square results were reported in cases where it was appropriate. A Bonferroni correction was applied ($p = .05/5 = 0.01$). There was only one statistically significant finding. Participants with a history of NSSI reported having sex with another male before entering the institution significantly more than those who had not engaged in NSSI; however, this was not significant after applying the Bonferroni correction. More heterosexual participants had not engaged in NSSI compared to those who had a history of such behaviour, though this relationship was not significant.

Table 9

Sexual Orientation and Behaviour of Participants With and Without a History of NSSI

	NSSI % (*n*)	No NSSI % (*n*)	χ^2
Sexual orientation	*N* = 39	*N* = 44	
Heterosexual	74.4 (29)	90.9 (40)	
Homosexual	2.6 (1)	--	3.37
Bisexual	15.4 (6)	2.3 (1)	
Other	7.7 (3)	6.8 (3)	
Sex with male before admitted to institution	*N* = 40	*N* = 45	
Yes	25.0 (10)	6.7 (3)	4.17*
No	75.0 (30)	93.3 (42)	
Sex with male after admitted to institution	*N* = 39	*N* = 45	
Yes	23.1 (9)	8.9 (4)	2.22
No	76.9 (30)	91.1 (41)	
Sex with female before admitted to institution	*N* = 40	*N* = 45	
Yes	87.5 (35)	91.1 (41)	0.04
No	12.5 (5)	8.9 (4)	
Sex with female after admitted to institution	*N* = 40	*N* = 45	
Yes	17.5 (7)	8.9 (4)	0.73
No	82.5 (33)	91.1 (41)	

Note. NSSI = Non-suicidal self-injury.
* $p < .05$.

Reasons for self-injuring. The OSIBI was used to determine the men's reasons for engaging in NSSI (see Table 10). Affect regulation (i.e., dealing with negative emotions) was the most common reason endorsed, followed by self-punishment, dissociation, and control (for more information regarding the reasons provided for engaging in NSSI by men in treatment centres see Power & Beaudette, under review). Note that many offenders provided multiple reasons for using NSSI.

Table 10

Reasons for Self-Injuring Based on Questionnaire Data

Reasons for Self-Injuring	*N* = 39 % (*n*)
Affect regulation	82.1 (32)
Self-punishment	66.7 (26)
Dissociation	61.5 (24)
Control	56.4 (22)
For a rush	46.2 (18)
Instrumental	46.2 (18)
Communication/Attention-needing	43.6 (17)
I really want to die	38.5 (15)
To stop me from killing myself	28.2 (11)
I am addicted to doing it	23.1 (9)
I don't know why I do it	15.4 (6)
I see/hear other people doing it	12.8 (5)

Note. NSSI = Non-suicidal self-injury.

Descriptive Analysis

Types of NSSI. Participants were asked during the interview and in the OSIBI questionnaire to describe what types of NSSI they had ever engaged in. Responses varied between the questionnaire and interview as participants were asked to freely recall all NSSI in the interview and in the OSIBI they were presented with a list of behaviours.

Table 11 outlines the types of NSSI reported by participants. Cutting was the most

common behaviour. Generally, the participants endorsed more types of self-injury in the questionnaire data as opposed to the interview data.

Table 11

Type of NSSI Ever Reported in Questionnaires and Interviews

Type of NSSI Reported	Questionnaires *N* = 39 % (*n*)	Interviews *N* = 41 % (*n*)
Cutting	74.4 (29)	82.9 (34)
Burning	48.7 (19)	14.6 (6)
Head banging	46.2 (18)	29.3 (12)
Ligature (neck)	28.2 (11)	9.8 (4)
Scratching	28.2 (11)	--
Inserting objects	23.1 (9)	2.4 (1)
Hair pulling	20.5 (8)	--
Swallowing objects	12.8 (5)	--
Plastic bag over dead	10.3 (4)	--
Ligature (body part other than neck)	7.7 (3)	--
Hitting inanimate objects	5.1 (2)	--
Hitting or slapping	5.1 (2)	12.2 (5)
Other [a]	5.1 (5)	22.0 (9)

Note. NSSI = Non-suicidal self-injury.

[a] Other includes biting, overdose, jumping off objects, auto-enucleation, and ripping off nails.

Type of NSSI reported in the questionnaires was further broken down into behaviours that were practiced before, after, and during the course of incarceration in a CSC institution (see Table 12). Cutting remained the most common form of NSSI. All behaviours were more common prior to being admitted to CSC compared to while in a CSC institution.

Table 12

Type of NSSI Reported in Questionnaires

Type of NSSI	Before Being Admitted Only *N* = 38 % (*n*)	Only Since Being Admitted *N* = 38 % (*n*)	Before and After Being Admitted *N* = 38 % (*n*)
Cutting	34.2 (13)	18.4 (7)	26.3 (10)
Scratching	10.5 (4)	7.9 (3)	10.5 (4)
Head banging	23.7 (9)	10.5 (4)	13.2 (5)
Burning	31.6 (12)	7.9 (3)	10.5 (4)
Hair Pulling	13.2 (5)	--	7.9 (3)
Ligature (Neck)	21.1 (8)	7.9 (3)	--
Ligature (Other than Neck)	5.3 (2)	2.6 (1)	--
Plastic Bag Over Head	7.9 (3)	--	2.6 (1)
Inserting Objects	15.8 (6)	2.6 (1)	5.3 (2)
Swallowing Objects	7.9 (3)	2.6 (1)	2.6 (1)
Hitting or Slapping	--	5.3 (2)	2.6 (1)
Hitting Inanimate Objects	--	--	2.6 (1)
Other	5.3 (2)	2.6 (1)	5.3 (2)

Note. NSSI = Non-suicidal self-injury. *N* refers to only those who reported engaging in NSSI in the questionnaires.

Body part injured during SIB. Table 13 presents the interview and questionnaire data on the body part participants cited that they most often injured. Note that the participants could endorse all the body parts they had ever injured in the questionnaire, whereas they were asked which body part they injured most often in the interviews. For both sources of data, the arms and wrists were the most commonly injured body part, followed by the hands and head.

Table 13

Body Parts Injured During Self-Injury Based on Questionnaires and Interviews

	Body Part Ever Injured (Questionnaires) *N* = 40 % (*n*)	Body Part Most Often Injured (Interviews) *N* = 41 % (*n*)
Arms or wrists	77.5 (31)	63.4 (26)
Hands	42.5 (17)	9.8 (4)
Head	37.5 (15)	9.8 (4)
Legs	35.0 (14)	2.4 (1)
Chest	22.5 (9)	--
Face	20.0 (8)	2.4 (1)
Neck	20.0 (8)	4.9 (2)
Feet	17.5 (7)	--
Abdomen	17.5 (7)	--
Eyes	15.0 (6)	--
Hips or Buttocks	15.0 (6)	--
Mouth	12.5 (5)	--
Back	10.0 (4)	--
Genitals	7.5 (3)	--
Other	7.5 (3)	--
Not Stated	--	7.3 (3)

Lethality. The potential lethality of NSSI was assessed in the OSIBI. The majority of men reported being treated by a nurse or doctor after engaging in self-injury. Participants were also asked about the severity of the injury and for almost half of the sample, medical attention was required; otherwise, damage caused by NSSI could have been fatal. These results, presented in Table 14, demonstrate the serious nature of the behaviour.

Table 14

Potential Lethality of NSSI

	N = 40 % (*n*)
Ever treated by a nurse or doctor after NSSI	
Yes	75.0 (30)
No	25.0 (10)
NSSI would have been lethal if you did not receive help	
Yes	45.0 (18)
No	55.0 (22)
Severity of NSSI usually	
Not bad at all (I don't need medical help)	25.0 (10)
Somewhat bad (I sometimes need medical help)	40.0 (16)
Very bad (I could die from the injury)	35.0 (14)

Note. NSSI = Non-suicidal self-injury.

Frequency. The men who had a history of NSSI were asked to report how often they had engaged in NSSI and suicide attempts over several time periods (see Table 15). The majority of men had not engaged in NSSI or attempted suicide in the month prior to completing the OSIBI.

Table 15

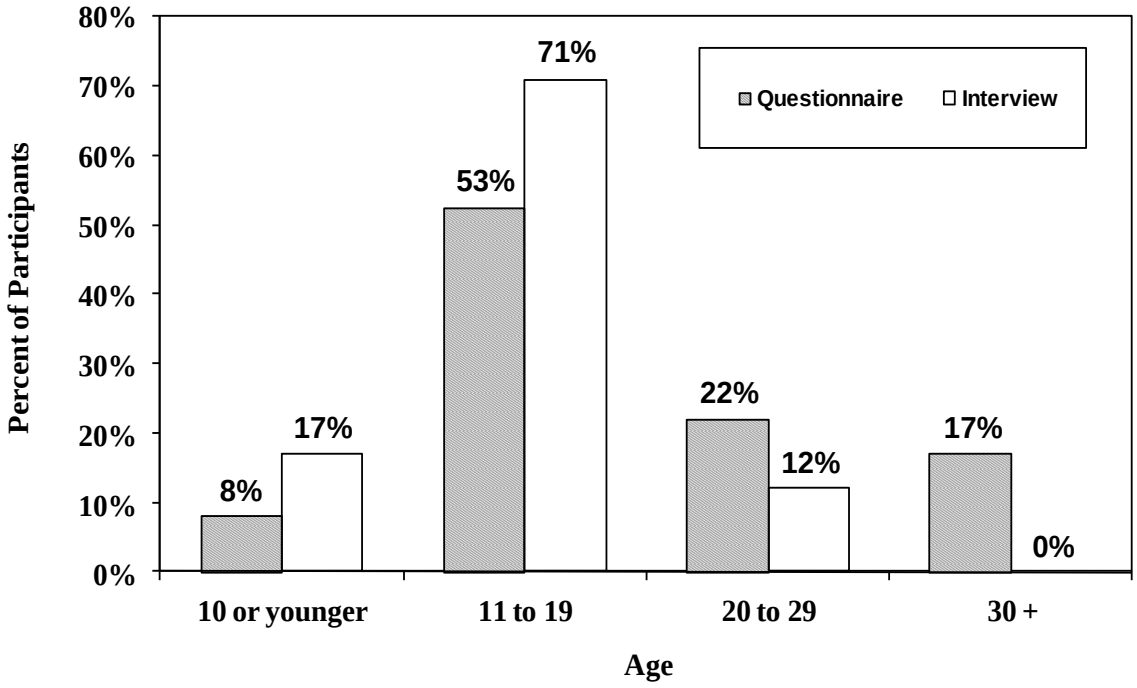
Number of Times Participants with and without a History of NSSI Engaged in Suicide Attempts and NSSI

	NSSI *N* = 40 %			
	None	1 - 2	3 - 5	More than 5
Number of suicide attempts in the past month[a]	85.0	7.5	2.5	2.5
Number of suicide attempts in the past year[a]	67.5	22.5	2.5	5.0
Number of suicide attempts ever[a]	17.5	25.0	22.5	32.5
Number of NSSI incidents in the past month	72.5	20.0	2.5	5.0
Number of NSSI incidents in the past year	62.5	10.0	12.5	15.0
Number of NSSI incidents ever	--	30.0	5.0	65.0

Note. NSSI = Non-suicidal self-injury.
[a]*n* = 1 missing.

Age at time of first NSSI. Participants reported at what age they engaged in their first incident of NSSI. Four participants with a history of NSSI did not answer this question on the OSIBI and 17 men did not respond to this question during the interviews. Figure 1 illustrates that the majority of participants began to engage in NSSI between the ages of 11 and 19.

Figure 1. Age at first non-suicidal self-injury incident.



Initiation of NSSI

Questions in the OSIBI were created to better understand how participants first conceived of the idea to engage in NSSI. Participants were asked to select an option that best described how they thought of the idea to initiate self-injury or they were given the option to describe it in their own words if the appropriate option was not listed. Four participants gave multiple explanations of how they originally had the idea to self-injure. Table 16 demonstrates that more than half the sample reported first coming up with the idea themselves. Only a small number of offenders stated that someone other than themselves or a media source led them to think of the idea to self-injure.

Table 16

Origin of the Idea to Engage in Non-Suicidal Self-Injury for the First Time

	N^a = 39 % (*n*)
I thought of it myself	56.4 (22)
From other offenders	10.3 (4)
Multiple sources	10.3 (4)
From movie or TV show	7.7 (3)
From friends	7.7 (3)
Other	7.7 (3)

[a] *n* = 6 missing

Types of Suicide Attempts

The methods used to attempt suicide were assessed in the interviews. Several participants reported engaging in more than one method, with overdosing and using ligature being the most common (see Table 17).

Table 17

Types of Suicide Attempts Reported

Type of Suicide Attempts	Interviews[a] (Suicide Attempts Ever) *N* = 31 % (*n*)
Overdose	48.4 (15)
Ligature	45.2 (14)
Cutting	25.8 (8)
Traffic	9.7 (3)
Gun shot	3.2 (1)
Other[b]	9.7 (3)

Note. Some men engaged in more than one type of suicide attempt, and therefore the total exceeds 100%.
[a] Includes suicide attempts ever occurred including those suicide attempts prior to CSC. [b] Other category includes drowning and jumping off a building.

Trajectories to NSSI

Childhood Abuse Model. The childhood abuse model posits that individuals who experience sexual abuse are more likely to develop certain psychological disorders such as substance abuse, depression, posttraumatic stress disorder, and borderline personality disorder, which can lead to NSSI (see Figure 2). Bivariate correlations for all the variables were calculated and presented in Table 18. To determine whether sexual abuse occurred, the sexual abuse subscale from the CTQ was used as an indicator. Substance abuse was measured by assessing whether participants met the diagnostic criteria for past or current substance abuse on the SCID-I. Additionally, the SCID data were used to establish the presence of past or current depression, the occurrence of posttraumatic stress disorder, and borderline personality disorder. NSSI was significantly correlated ($p < .05$) with all the variables except posttraumatic stress disorder.

Table 18

Bivariate Correlations for the Childhood Abuse Model

	NSSI	Childhood Sexual Abuse	Depression	PTSD	BPD	Substance Abuse
NSSI	--	0.24*	0.51***	0.31	0.26*	0.63***
Childhood Sexual Abuse		--	0.19	0.74***	0.48***	-0.01
Depression			--	0.06	0.39***	0.41***
PTSD				--	0.45*	0.14
BPD					--	0.03
Substance Abuse						--

Note. NSSI = Non-suicidal self-injury. PTSD = posttraumatic stress disorder. BPD = borderline personality disorder.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Path analysis. Path analysis can be conceptualized as a series of regression analyses conducted from left to right in the model to estimate the causal relationships between variables. First, simple regressions were conducted for each of the criterion variables (i.e., depression, PTSD, borderline personality disorder, and substance abuse) on childhood sexual abuse. For instance, depression was regressed on childhood sexual abuse (see Table 19)

The following steps include regressing each of the four former criterion variables on NSSI. In this instance, depression, PTSD, borderline personality disorder, and substance abuse

were regressed on NSSI (see Table 20). There were significant relationships between childhood sexual abuse and PTSD, borderline personality disorder, and from childhood sexual abuse to NSSI; however, no trajectories from childhood sexual abuse to NSSI were significant.

Table 19

Simple Regression Results for Childhood Sexual Abuse Predicting Non-Suicidal Self-Injury, Depression, Posttraumatic Stress Disorder, Borderline Personality Disorder and Substance Abuse

	Beta Weight (β)	B	SE	F	R^2
Non-suicidal self-injury	0.240*	0.015	0.007	4.97*	0.058
Depression	0.191	0.009	0.005	3.11	0.037
Posttraumatic stress disorder	0.739***	0.088	0.019	21.72***	0.547
Borderline personality disorder	0.480***	0.052	0.011	22.43***	0.230
Substance abuse	-0.007	-0.0003	0.006	0.004	0.000

Note. Predictor variable is childhood sexual abuse in each case.
* $p < .05$ ** $p < .01$ *** $p < .001$.

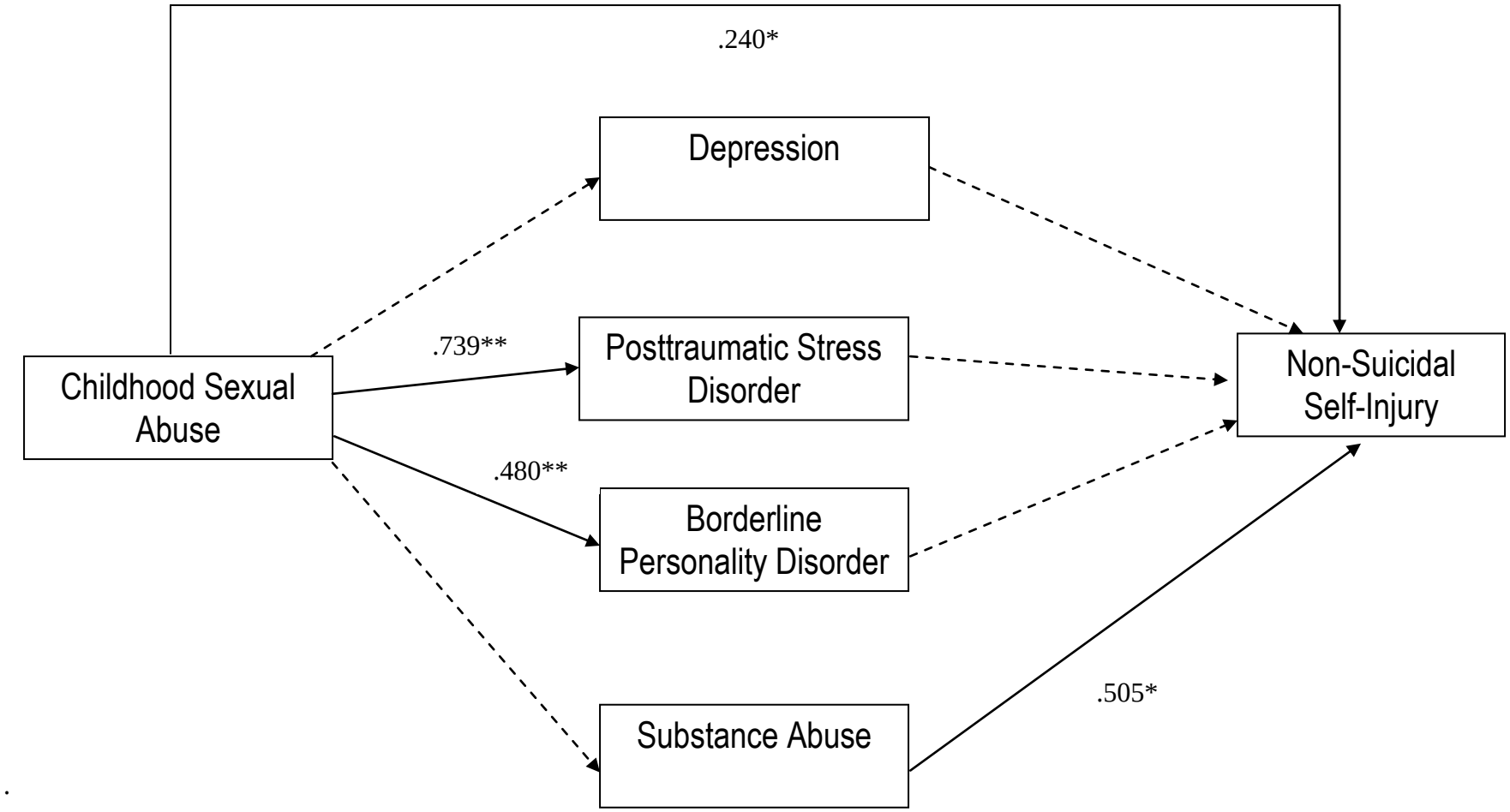
Table 20

Standard Multiple Regression Results: Regressing Non-Suicidal Self-Injury on Depression, Posttraumatic Stress Disorder, Borderline Personality Disorder, and Substance Abuse

	Beta Weight	B	SE	F	R^2
Depression	.390	0.417	0.226	--	--
Posttraumatic stress disorder	0.165	0.085	0.103	--	--
Borderline personality disorder	0.073	0.036	0.115	--	--
Substance abuse	0.505*	0.518	0.183	--	--
Model	--	--	--	5.120**	0.577

Note. Outcome variable is non-suicidal self-injury in each case.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 2. The Childhood Abuse Model. Paths that are significant at p < .05 are shown with a solid line. Non-significant paths are shown with a dashed line. * *p* < .05, ** *p* < .001.



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Impulsivity/anger/aggression model. This model posits that anger, aggression, and impulsivity are all factors that lead to NSSI (see Figure 3). Bivariate correlations were performed for the variables in this model (impulsivity, anger, aggression, and NSSI). The aggression variable was generated from scores on the physical aggression and verbal aggression subscales of the BPAQ. The anger subscale of the BPAQ provided a score for the anger variable and impulsivity variable scores were taken from the DFIA impulsivity indicators. Table 21 demonstrates that only anger and aggression correlated with NSSI ($p < .05$ and $p < .01$, respectively) and there was a strong correlation between scores on the aggression and anger subscales ($p < .001$).

Table 21

Bivariate Correlations for the Impulsivity/Anger/Aggression Model

	NSSI	Impulsivity	Anger	Aggression
NSSI	--	0.14	0.23*	0.33**
Impulsivity		--	0.11	0.09
Anger			--	0.68***
Aggression				--

Note. NSSI = Non-suicidal self-injury.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Path analysis. To complete the path analysis, NSSI was regressed on anger, aggression, and impulsivity. Results are presented in Table 22. Aggression and anger were predictive of NSSI ($p < .01$ and $p < .05$, respectively); however, the trajectory from impulsivity to NSSI was non-significant (see Figure 3). These results provide partial support for the model.

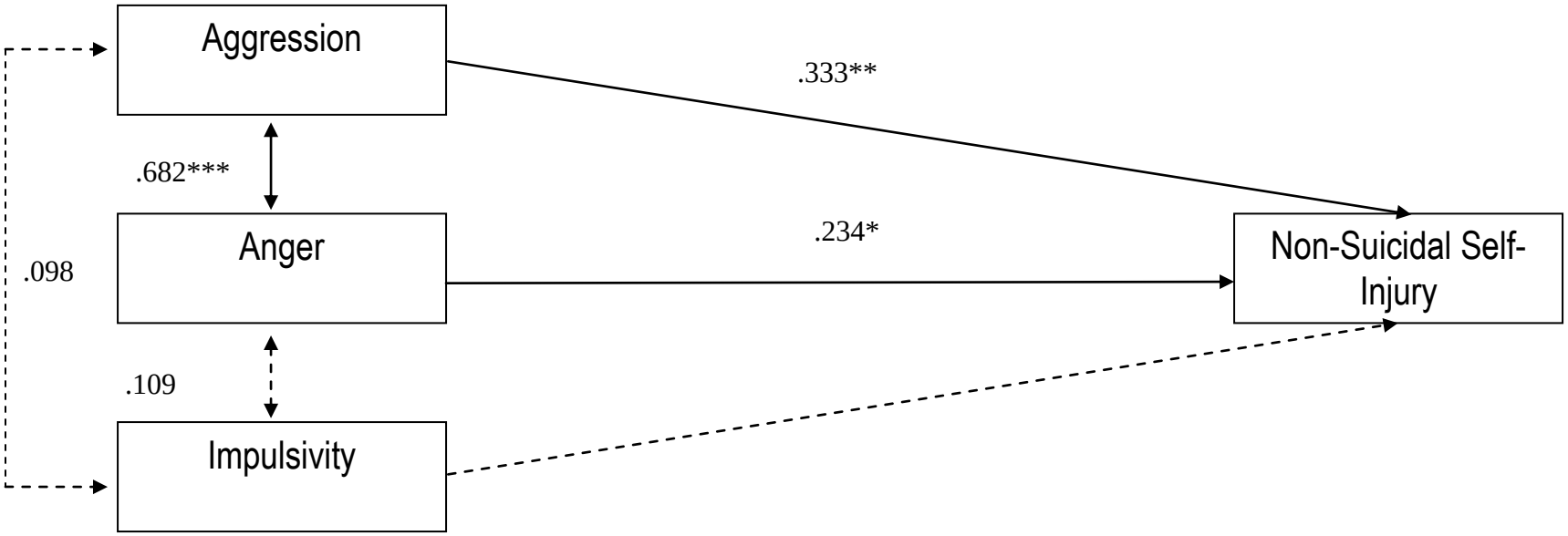
Table 22

Standard Multiple Regression Results: Regressing Non-Suicidal Self-Injury on Impulsivity, Anger, and Aggression

	Beta Weight (β)	B	SE	F	R^2
Impulsivity	0.144	0.022	0.016	1.74	0.021
Anger	0.234*	0.045	0.021	4.76*	0.055
Aggression	0.333**	0.025	0.008	10.26**	0.111

Note. Outcome variable is non-suicidal self-injury
* $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 3. The Impulsivity/Anger/Aggression Model. Paths that are significant at $p < .05$ are shown with a solid line. Non-significant paths are shown with a dashed line. * $p < .05$, ** $p < .01$, *** $p < .001$.



Discussion

This study improves our understanding of NSSI in federally sentenced men in treatment centres by providing a detailed exploration of the behaviour before and after being admitted to CSC. Data were obtained from semi-structured in-person interviews and questionnaires. Where applicable, data from multiple sources were compared to determine consistency among methods of data collection.

Participants most frequently reported using NSSI as a method of coping with negative emotions. This is referred to in the literature as the affect regulation model. The use of NSSI in this way has consistently been found in men and women federal offenders in Canada using interviews (Power & Beaudette, under review; Power, Beaudette, & Usher, 2012; Power & Usher, 2010), questionnaires (Power & Usher, 2011a; Power, Usher, & Beaudette, 2012), and archival data (Power & Usher, 2011d; Power, Usher, & Beaudette, 2012). The affect regulation model is also the most strongly supported reason for engaging in NSSI in the empirical literature (Klonsky, 2007). These findings were also supported in non-forensic populations living in secure facilities (Duperouzel & Fish, 2010). The reason for engaging in NSSI varied by participant (e.g., deal with everyday stressors, emotional expression), however, its use as a coping strategy was a reoccurring theme. Thus, while individuals engage in NSSI for a variety of reasons, research strongly suggests that NSSI is most commonly used by offenders as a method of coping with negative emotions.

Just over half of the study participants who had a history of NSSI first self-injured in the community. In previous research, the vast majority of women offenders (86%) reported first self-injuring in the community prior to incarceration (Power & Usher, 2011a), compared with 36% of men in non-treatment centre institutions (Power, Usher, & Beaudette, 2012). Overall, women appear to be least likely to initiate NSSI while in a correctional facility. In the present study, about 20% of the men with a history of NSSI first self-injured in a CSC institution compared to more than 40% of men not residing in treatment centres. While the initiation of NSSI in CSC institutions is very concerning, it appears that this phenomenon is most likely to occur in men, particularly in men in non-treatment centre institutions.

When asked about the severity of the NSSI, 25% of participants reported that they usually do not need medical help. This finding is similar to the 21% of men in the non-treatment

centre study who endorsed this option (Power, Usher, & Beaudette, 2012). However, considerably more (45%) women reported that they do not usually need medical attention (Power & Usher, 2011a). These findings are similar to those of a previous study of SIB in Canadian federal offenders, based on archival data, which found that 38% of women had no injury as a result of their SIB, compared to 22% of men (Gordon, 2010). Additionally, 3% of women had serious injury but none died as a result of their SIB, compared to 6% of men who had serious injury and 3% who died. Taken together, these studies suggest that among federal offenders in Canada, men are more likely to engage in more severe forms of SIB compared to women (i.e., they are more likely to experience serious medical injury or death). Despite a lack of comparative research (Claes, Vandereychekn, & Vertommen, 2007), it is widely believed that, compared to women, men use more violent means of NSSI (Hawton, 2000). However, a more recent study of NSSI among American college students (19 men and 29 women), found that women were significantly more likely to have experienced an injury requiring medical attention during their more recent or most severe incident (Andover, Primack, Gibb, & Pepper, 2010).

As with previous research (Power & Usher, 2011b, 2011c), participants with a history of NSSI were more likely to have a psychological disorder, as determined by the SCID I and II, when excluding abuse or dependence on alcohol or other substances. The alcohol and substance-related disorders were removed due to their high frequency, particularly among offenders without other psychological disorders. For the NSSI group, less than 20% of participants had alcohol and substance-related disorders alone (i.e., in the absence of another disorder assessed by the SCID in this study), compared to 36% of offenders in the non-NSSI group. Unlike previous research, however, the frequencies of other specific disorders were not significantly different between the groups. This finding is very likely due to the criteria applied for transfer to the treatment centres that usually is due to psychiatric symptoms.

Experiencing a head injury or trauma was not found to be related to NSSI in this study. Research on men in non-treatment centre facilities also failed to find a significant relationship between head injury and NSSI (Power & Usher, 2011b). Prior experience of head trauma has been linked to NSSI in research with male offenders in the United States (Lanes, 2009). A recent meta-analysis determined prevalence of traumatic brain injury to be 60% in offender populations (Shiroma, Ferguson, & Pickelsimer, 2012). The high rate of head injury in the general offender population may make it challenging to find differences between the groups on this factor.

At least three-quarters of the offenders who had engaged in NSSI also had attempted suicide at least once. A correlation between NSSI and suicide attempts has been found in inpatient adults (Andover & Gibb, 2010), adult drug users (Darke, Torok, Kaye, & Ross, 2010), outpatient young adults (Favaro et al., 2008), young adults in university (Whitlock, Muehlenkamp, & Eckenrode, 2008; Whitlock & Knox, 2007), inpatient adolescents (Nock, Joiner, Gordon, Lloyd-Richarson, & Prinstein, 2006), and adolescents in the community (Tang et al., 2011). The only three studies that have found this correlation have been longitudinal, all with inpatient or outpatient adolescent samples (Asarnow et al., 2011; Prinstein et al., 2008; Wilkinson, Kelvin, Roberts, Dubicka, & Goodyear, 2011). Two of these longitudinal studies (Asarnow et al.; Wilkinson et al.) found that NSSI predicted future suicide attempts even when history of suicidal behaviour was controlled for. While this relationship has been well-established, little research has focused on why or how the behaviours are linked. Hamza, Stewart, and Willoughby (2012) put forward an integrated model that encompasses three models previously proposed to explain the relationship between NSSI and suicide attempts: (1) Gateway Theory, (2) Third Variable Theory; and (3) Joiner's Theory of Acquired Capacity for Death. The Gateway Theory (Stanley, Gemeroff, Michalsen, & Mann, 2001) proposes that suicidal behaviours exist along a continuum from NSSI to completed suicide, as they are similar behaviours regardless of intent. Thus, NSSI may escalate into suicide attempts. Several studies have examined the relationship between NSSI and suicide by way of a third variable (Nock et al., 2006; Whitlock & Knox, 2007). The Third Variable Theory purports that another factor, such as a psychological disorder or psychological distress, actually increases the risk for both NSSI and suicide attempts (i.e., one variable causes NSSI and suicide attempts, rather than NSSI and suicide attempts causing each other). Joiner's (2005) Theory of Acquired Capacity for Death suggests that NSSI (along with other behaviours such as substance abuse and exposure to violence) allows an individual to habituate to the fear and pain associated with suicidal behaviours (see Hamza et al. for a review of the literature supporting or contradicting each model). While the reason for the association between NSSI and suicide attempts cannot be determined here, further understanding of how these two behaviours are related (and unrelated) could contribute to better prevention and treatment.

Conclusions and Future Directions

The relatively small sample size combined with the low prevalence rates of some disorders may have contributed to the lack of significant findings. Further research with larger samples would be required to determine whether some of the non-significant findings are actually non-significant or only appear so due to lack of statistical power. Despite the small sample size, some significant findings were evident. Previous studies examining men in non-treatment centres and women offenders suggest that there are clear gender differences involving NSSI behaviours. The findings from this study demonstrate that men residing in treatment centres have a unique profile in that they share some similarities with both men and women offenders while also possessing distinctive characteristics. It is possible that the women offenders are more similar to men in treatment centres due to their significant level of psychological disorders.

The application of a relapse prevention framework (also known as a self-management plan) may be beneficial for the treatment of NSSI. Relapse prevention is designed to teach individuals who are engaged in the habit-change process how to anticipate and cope with situations or circumstances associated with potential relapse through the use of behavioural and cognitive skills, and lifestyle change procedures (Marlatt, 1996). The principles of relapse prevention were originally (and most commonly) used with substance use behaviours and are currently applied in most CSC correctional programs. Strategies consistent with relapse prevention such as the identification of high risk situations and rehearsal of coping strategies could play an important role in the treatment of NSSI (Brown & Chapman, 2007). Future research could examine the utility of applying the relapse prevention framework to the treatment of offenders who self-injure.

The results of a study examining the NSSI behaviours of individuals with mild/moderate intellectual disabilities living in secure settings suggest that a uniformed approach to treatment may not be appropriate for many patients (Duperouzel & Fish, 2010). The authors report that although coping is the most common motivation for engaging in NSSI, there are several reasons for which an individual may decide to self-injure. Understanding the individual function of NSSI will ultimately allow staff to foster positive relationships with the population they are serving and to produce better outcomes. These findings are further supported by the research program at CSC examining NSSI in various offender populations (Power & Beaudette, under review;

Power, Beaudette, & Usher, 2012; Power & Usher, 2010, 2011a, 2011d; Power, Usher, & Beaudette, 2012). This research has demonstrated that offenders with a history of NSSI represent a heterogeneous group with various motivations for engaging in self-injury. Future research aimed at developing interventions to treat NSSI behaviours need to take into account multiple factors including: motivations for NSSI, gender, origins of NSSI, and psychological history of the targeted population.

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Appendix A: Semi-Structured Interview Schedule

I'd like to ask you some questions about your history before you entered the institution and about things that have happened since you came here. At the end of the interview I will ask questions about self-injury and attempted suicide.

Section A: Mental Health

Do you have kids?

I'm going to ask you some questions about your mental health.

Have you ever talked to a psychologist, counsellor, or doctor about psychological problems you were having?

When?

Why did this happen? (Possible prompts → you wanted to go, someone else made you go, something bad happened that you wanted to talk about)

How often did you speak with this person?

Have you ever been diagnosed with a psychological disorder?

Have you ever spent a night in a psychiatric hospital?

Have you ever experienced a head injury?

Possible prompts → in a car accident, fight, working, sports (hockey, football)

Possible prompts → did you have to go to the hospital/see a doctor, get stitches, lose consciousness?

Section B: History of Abuse

Now, I'd like to ask you some questions about your history and if you have ever experienced abuse. You don't have to go into detail.

Did you experience abuse as a child?

(Possible prompts → did anyone hit you, humiliate you, call you stupid, seriously

threaten you, touch you in an inappropriate manner, sexually abuse you)

What kind of abuse?

Who was your abuser? (Mom, Dad, Brother, Sister, teacher)

Have you experienced abuse as an adult?

(Possible prompts → did anyone hit you, humiliate you, call you stupid, seriously threaten you, touch you in an inappropriate manner, sexually abuse you)

What kind of abuse?

Who was your abuser? (Possible prompts → Could be from a partner, boss, etc)

Section C: Suicide Attempts & Self-Injurious Behaviour

Finally, I'd like you to answer some questions about any suicide attempts or self-injury that you may have done. This may be a difficult topic, however, you should talk about things in a way that you are comfortable with.

Have you ever hurt yourself on purpose? (Possible prompts → cutting, slashing, using a ligature/strangulation, inserting something under your skin, head banging)

Was it a suicide attempt (did you really think you wanted to die)?

What types of self-injury have you done?

What type do you do most often?

What part of your body do you usually injure?

Tell me about the first time you harmed yourself.

When did it happen?

How did you do it (type of self-injury)?

Why did you do it? Did something happen to trigger the event? Where did you get the idea?

How did you feel immediately before you did it?

How did you feel immediately after you did it?

What happened immediately after you did it?

Did anyone find you while you were doing it? Was it likely that someone would find you?

Did you seek help after you did it? Did you tell anyone about it?

Did other people know you self-injured? How did other people react to the event?

What about when you have injured yourself since the first time

How did you do it (type of self-injury)?

Why did you do it? Did something happen to trigger the event?

How did you feel immediately before you did it?

How did you feel immediately after you did it?

Did you seek help after you did it?

Did you tell anyone about it? If so, how did people react?

Do you self-injure sometimes more than other times?

(Possible prompts → living at home, in the institution, money problems, drinking alcohol, feeling stressed, having relationship problems)

When have you done it more?

When have you done it less?

How often do/did you self-injure?

(Possible prompts → how much in the last week/month/year)

Did you self-injure more or less before you were incarcerated?

Do the other offenders know you harm yourself? Do they talk to you about it?

When you injured yourself before you came into the institution, why did you do it?

What about since you came into the institution? Are the reasons different? Is the type of harm different?

Since you came into the institution, do you do it more or less?

How long ago since you last harmed yourself?

Do you do anything now instead of harming yourself?

How did you figure out what you could do instead?

Appendix B: Offender Self-Injurious Behaviour Inventory (OSIBI)

Below are a number of questions about social support, sexual orientation, self-injury and suicide. Please read them carefully and answer each question as best you can.

	Yes	No
1. When I was on the outside, if I was upset, there was someone who was there for me.	❍	❍
2. On the inside, if I am upset, there is someone who is there for me.	❍	❍

3. How would you identify your sexual orientation?

❍	❍	❍	❍
Heterosexual (Straight)	Homosexual (Gay)	Bisexual	Other

	Yes	No
4. Before you came into the institution, had you ever had sex with a female?	❍	❍
5. Before you came into the institution, had you ever had had sex with a male?	❍	❍
6. Since you came into the institution, have you had sex with a female?	❍	❍
7. Since you came into the institution, have you had sex with a male?	❍	❍

8. Have you ever ***thought*** about killing yourself?

❍ Yes
❍ No

9. Have you ever ***thought*** about injuring yourself?

❍ Yes
❍ No

10. How many times have you tried to kill yourself…

	Never	1-2 times	3-5 times	More than 5 times
…in the past month	❍	❍	❍	❍
…in the past year	❍	❍	❍	❍
…ever	❍	❍	❍	❍

11. Have you ever intentionally injured yourself *without* trying to kill yourself?

❍ Yes → **continue to next question**

❍ No → **Stop here**

12. How often did you injure yourself *without* trying to kill yourself…

	Never	1-2 times	3-5 times	More than 5 times
…in the past month	❍	❍	❍	❍
…in the past year	❍	❍	❍	❍
…ever	❍	❍	❍	❍

13. How old were you when you first intentionally injured yourself?_____

14. a) Did you injure yourself before you were incarcerated (anywhere)?

❍ Yes
❍ No

b) If yes, compared to when you were on the street, did you hurt yourself:

❍	❍	❍	❍	❍	❍
A lot more	A little more	About the same amount	A little less	A lot less	I have not hurt myself since I came in

b) Did you injure yourself before you came into CSC?

❍ Yes
❍ No

b) If yes, compared to before you came into CSC, do you hurt yourself:

❍	❍	❍	❍	❍	❍
A lot more	A little more	About the same amount	A little less	A lot less	I have not hurt myself since I came in

15. Do you injure yourself for any of the reasons listed below?

Yes	**No**	
☐	☐	To punish myself for feeling good
☐	☐	To punish myself for feeling bad
☐	☐	To punish myself for being a bad person
☐	☐	To punish myself for doing something bad
☐	☐	To do something that only I control and no one else can control
☐	☐	To stop me from killing myself
☐	☐	To protect people in my life
☐	☐	To reduce anxiety and despair
☐	☐	To feel less tense
☐	☐	To get a “high” like a drug high
☐	☐	For excitement
☐	☐	For sexual release (it feels good)
☐	☐	To get rid of sexual feelings
☐	☐	To feel something when I feel numb (to feel something real)

Yes	No	
☐	☐	To get moved out of my cell or unit
☐	☐	To express anger to people who have disappointed me
☐	☐	To stop feelings of being alone
☐	☐	To control the reactions and behaviours of others (such as staff or friends)
☐	☐	To stop feeling empty
☐	☐	To feel physical pain because the emotional pain is too bad
☐	☐	To keep bad memories away
☐	☐	I see/hear other people doing it
☐	☐	I really want to die
☐	☐	To get out of doing things I don't want to do
☐	☐	To avoid getting into trouble
☐	☐	To show others how tough I am
☐	☐	To get support or attention from staff
☐	☐	To spite staff or make staff angry
☐	☐	I am addicted to doing it
☐	☐	I don't know why I do it
☐	☐	Other: _____

16. Before you harm yourself, do you feel:

- ☐ Frustrated
- ☐ Depressed
- ☐ Angry
- ☐ Numb or unreal
- ☐ Other: _____

17. After your harm yourself, do you feel:

❍	❍	❍	❍	❍
A lot better	A little better	About the same	A little worse	A lot worse

18. Which events have made you hurt yourself?

Yes	No	
☐	☐	Loss of relationship (such as a break-up)
☐	☐	Denial of parole
☐	☐	Feeling threatened within institution
☐	☐	Increase in stress
☐	☐	Death of friend/family member
☐	☐	Occasion (such as Christmas)
☐	☐	Anniversary of a negative event (such as death of a loved one)
☐	☐	Anniversary of my crime
☐	☐	To get put in segregation (felt threatened, had a friend in there, needed quiet time)
☐	☐	Seeing another offender hurt themselves
☐	☐	None, I don't hurt myself for any of these reasons
☐	☐	Other: _____

	Never	Sometimes	Always
19. When you hurt yourself, do other people know?	❍	❍	❍

20. Where did you get the idea to hurt yourself the first time? (please check one)

- ❍ From friends
- ❍ From other offenders
- ❍ From other patients in a hospital
- ❍ From a book or magazine
- ❍ From a movie or TV show
- ❍ From the internet
- ❍ I thought of it myself
- ❍ Other: _____

21. Do you want to stop injuring yourself?

- ❍ Yes
- ❍ No
- ❍ I don't know
- ❍ I have stopped injuring myself

22. Have you ever been treated by a nurse or doctor after injuring yourself?

- ❍ Yes
- ❍ No

23. When you injure yourself, how bad is the injury *usually*?

❍	❍	❍
Not bad at all (I don't need medical help)	Somewhat bad (I sometimes need medical help)	Very bad (I could die from the injury)

24. The worst time you hurt yourself, how bad was the injury?

❍	❍	❍
Not bad at all (I don't need medical help)	Somewhat bad (I sometimes need medical help)	Very bad (I could die from the injury)

25. Have you ever injured yourself so badly that if you hadn't gotten help, you would have died?

❍ Yes
❍ No

26. Do you tell people after you injure yourself?

❍	❍	❍	❍	❍
Never	Rarely	Sometimes	Often	Always

27. Which parts of your body do you injure?

Yes	**No**	
☐	☐	Head
☐	☐	Eyes
☐	☐	Face
☐	☐	Mouth
☐	☐	Neck
☐	☐	Chest
☐	☐	Back
☐	☐	Abdomen (Stomach)
☐	☐	Hips/Buttocks
☐	☐	Genitals
☐	☐	Rectum/Anus
☐	☐	Arms
☐	☐	Hands

☐ ☐ Legs

☐ ☐ Feet

☐ ☐ Other: _____

28. What kinds of injury do you do? (check all that apply)

Now	**Before you entered the institution**	
☐	☐	Cutting (Slashing/Stabbing)
☐	☐	Burning
☐	☐	Tying something around my neck
☐	☐	Tying something around another body part (such as leg, arm)
☐	☐	Scratching
☐	☐	Hair Pulling
☐	☐	Plastic bag over head
☐	☐	Inserting objects and pulling them out again
☐	☐	Inserting objects and leaving them in
☐	☐	Swallowing things that are not food (pins, glass)
☐	☐	Head banging
☐	☐	Other: _____

Appendix C: DFIA indicators used for impulsivity measure

1. Has concentration problems
2. Has an unstable job history
3. Often shows up late for work
4. Has poor attendance record
5. Lacks initiative
6. Has quit job without another
7. Unaware of consequences
8. Impulsive
9. Manages time poorly
10. Has low frustration tolerance
11. Takes risks inappropriately
12. Thrill-seeking
13. Non-reflective
14. Is not conscientious

0 = no

1 = yes