

Suicide and Deliberate Self-injurious Behavior in Juvenile Correctional Facilities: A Review

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Abstract

Objective: Describe the rates of suicidal ideation, self-injury, and suicide among detained youth as well as risk factors and preventive measures that have been attempted. **Method:** Literature searches in PubMed, PsycINFO, and the Social Science Citation Index were undertaken to identify published studies written in English. Governmental data was also included from English-speaking nations. **Results:** The adjusted risk of suicide was 3 to 18 times higher than age-matched controls. The prevalence of lifetime suicidal ideation ranged from 16.9% to 59% while lifetime self-injury ranged from 6.2% to 44%. Affective disorders, borderline personality traits, substance use disorders, impulse control disorders, and anxiety disorders were associated with suicidal thoughts and self-injury. Screening for suicidal ideation upon entry was associated with a decreased rate of suicide. **Conclusions:** All youth should be screened upon admission. Identified co-morbid disorders should also be treated.

Key Words: *youth, suicide, self-harm, delinquent*

Résumé

Objectif: Décrire les taux d'idéation suicidaire, d'automutilation et de suicide chez les jeunes détenus ainsi que les facteurs de risque et les mesures préventives adoptées à l'essai. **Méthode:** Des recherches de la littérature ont été entreprises dans PubMed, PsycINFO, et le Social Science Citation Index afin d'identifier les études publiées en anglais. Des données du gouvernement de nations anglophones ont également été incluses. **Résultats:** Le risque corrigé de suicide était de 3 à 18 fois plus élevé que chez les témoins du même âge. La prévalence de durée de vie de l'idéation suicidaire allait de 16,9% à 59% tandis que l'automutilation de durée de vie se situait entre 6,2% et 44%. Les troubles affectifs, les traits de la personnalité limite, les troubles liés à l'utilisation d'une substance, les troubles de contrôle des impulsions, et les troubles anxieux étaient associés aux pensées suicidaires et à l'automutilation. Le dépistage de l'idéation suicidaire à l'admission était associé à un risque moindre de suicide. **Conclusions:** Tous les jeunes devraient subir un dépistage à l'admission. Les troubles comorbides identifiés devraient aussi être traités.

Mots clés: *jeunes, suicide, automutilation, délinquant*

Introduction

Suicide is the second leading cause of death among Canadian youth (Kutcher & Szumilas, 2008). Admission into a correctional facility is a highly stressful event, which can precipitate suicidal ideation and self-injury in youth. While reviews about suicide in adult correctional facilities exist (Matschnig, Frühwald, & Frottier, 2006; Mann et al., 2005)

there is little known about youth suicide. Liebling's (1993) review only included one youth study. We systematically examined published studies to describe the rate and risk factors for suicidal ideation, self-injury, and suicide among youth in correctional facilities. This review is guided by the PRISMA statement, which consists of evidence-based minimum criteria for reporting in systematic reviews and meta-analyses (PRISMA, 2012).

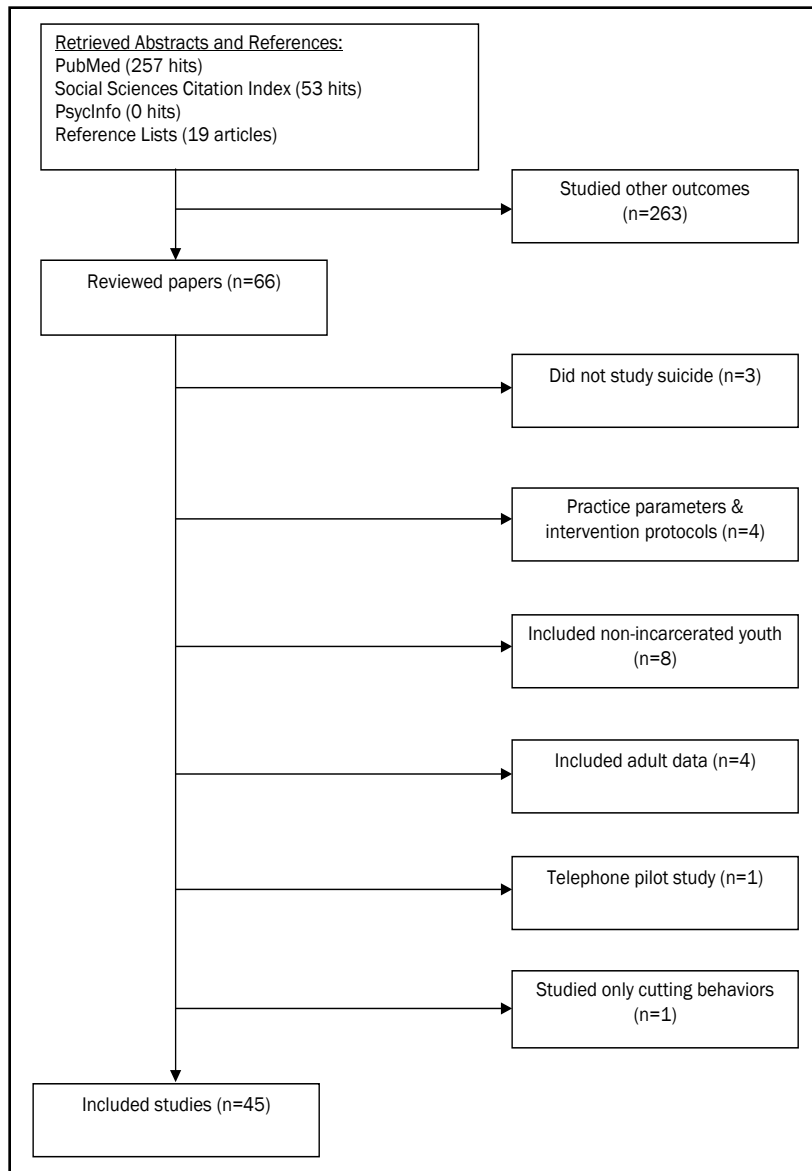
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Figure 1. Overview of study selection

Method

Information Sources and Search Strategy

Studies were retrieved through literature searches in the databases of PubMed, PsycINFO, and the Social Science Citation Index (January 1955 to November 2011). Searches combined the key words “youth,” “suicide,” “juvenile,” “jails,” “self harm,” and “correctional facility”. Articles were hand-searched and references were reviewed. A separate search was conducted in Google for grey literature from English-speaking nations. In total, 45 articles were identified, as shown in Figure 1. Two governmental articles were retrieved, including one each from the US and the UK. Practice parameters and intervention protocols were not included. Due to the heterogeneity of the population, we did not conduct a meta-analysis of the data.

Eligibility Criteria

Due to the paucity of articles retrieved, broad inclusion criteria were utilized to inform the review. The principal inclusion criteria were: 1) inclusion of information about suicidal ideation or self-injury which occurred in a correctional facility; and, 2) inclusion of youth only, as defined by an age between 11 and 22. Studies that met these criteria were included, regardless of primary objectives, design, or quality.

Study Selection

Abstracts were reviewed by the lead author and articles were searched for the eligibility criteria. Articles with clear relevance were included, while those with questionable reference were reviewed by the team and included based on consensus.

Types of Outcome Measures

This review intended to obtain information on suicidal ideation, self-injury, and suicide. The distinction was not made between non-suicidal self-injury (NSSI) and suicidal behavior though the function differs between them. Jacobson & Gould (2007) reported rates of NSSI in non-incarcerated youth between 13.0% to 23.2%. We were unable to distinguish between suicidal behavior and NSSI due to articles using the term “suicide” instead of “self-harm.” We therefore will use the term “self-injury” to capture both suicidal behavior and NSSI.

Consideration of Bias

As per PRISMA guidelines, assessment of the risk of bias at the study level and outcome level was undertaken (PRISMA, 2012). Reporting bias was a concern; although Mace et al. (Mace, Rohde, & Gnau, 1997) found good concordance on retesting, Putnins (2005) disclosed concerns about inconsistent reporting. Although attempts were made for complete inclusion, publication bias may have limited the inclusion of all relevant articles. The use of Google helped to reduce this bias and allowed the retrieval of relevant grey literature. Cultural bias may have also occurred; as noted by Hawton et al. (Hawton, Saunders, & O'Connor, 2012), youth suicide may be under-recorded by different countries and national rates should be interpreted with caution.

Results

Death by Suicide

Suicide in correctional facilities is the leading cause of death (Gallagher & Dobrin, 2006a). The suicide rate for incarcerated youth was 3 to 18 times higher than the age-matched general population (Gallagher & Dobrin, 2006b; Fazel, Benning, & Danesh, 2005). Most suicides occurred by hanging during regular waking hours by those who engaged in previous self-injury and had psychiatric illness; most were confined on nonviolent offenses (Hayes, 2009). Deaths were distributed fairly evenly over the confinement period with no seasonal differences (Hayes, 2009; Hockenberry, Sickmund, & Sladky, 2009). Increased rates occurred in facilities that did not screen all individuals within 24 hours of arrival, locked sleeping room doors, and were designed to screen for future placements (Gallagher & Dobrin, 2006b). Overcrowding was not a contributing factor (Hayes, 2009). Seventeen percent of youth were on suicide precaution status at the time of their death (Hayes, 2009).

Suicidal Ideation and Self-injury

Eighteen articles reported rates of suicidal ideation and 23 reported on self-injury. Studies examined current rates, lifetime rates, or a discrete time period (Table 1). Current suicidal ideation ranged from 9.6% to 52% (Wasserman, McReynolds, Lucas, Fisher, & Santos, 2002; Esposito & Clum, 2002). Suicidal ideation in the previous year ranged

from 20% to 68% (Lader, Singleton, & Meltzer, 2000; Alessi, McManus, Brickman, & Grapentine, 1984). Lifetime suicidal ideation varied from 16.9% to 58.3% (Ruchkin, Schwab-Stone, Kopolov, Vermeiren, & King, 2003; Freedenthal, Vaughn, Jenson, & Howard, 2007). Table 2 summarizes self-injury in incarcerated youth. Lawlor and Kosky (1992) found that 1% of residents incarcerated longer than seven days attempted suicide. The facility rate of report of a suicide attempt was just over 4% (Gallagher & Dobrin, 2006b). The report of self-harm by youth was higher, with 14.5% reporting engaging in self-injury (Kirikadis, 2008). Self-injury in the previous year ranged between 15% to 61% (Lader et al., 2000; Alessi et al., 1984) while lifetime self-injury ranged from 6.2% to 44% (Matsumoto et al., 2009; Lader et al., 2000). No studies confirmed self-harm acts by staff.

Risk Factors for Suicidal Ideation and Intentional Self-injury

Several mental disorders were associated with suicidal ideation and self-injury. Borderline personality disorder traits (Alessi et al., 1984), affective disorders (Plattner et al., 2007; Harris & Lennings, 1993; Abram et al., 2008; Miller, Chiles, & Barnes, 1982; Alessi et al., 1984; Rohde, Seeley, & Mace, 1997a; Gallagher & Dobrin, 2005; Penn, Esposito, Schaeffer, Fritz, & Spirito, 2003), substance use disorders (Morris et al., 1995; Freedenthal et al., 2007; Sanislow, Grilo, Fehon, Axelrod, & McGlashan, 2003; Chapman & Ford, 2008), post traumatic stress disorder (Plattner et al., 2007; Ruchkin et al., 2003; Suk et al., 2009; Chapman & Ford, 2008), social phobia (Plattner et al., 2007), anxiety (Abram et al., 2008; Penn et al., 2003), and attention-deficit hyperactivity disorder (Plattner et al., 2007; Miller et al., 1982; Putnins, 2005) increased the risk of suicidal ideation and self-injury.

Other risk factors for suicidal ideation and self-injury included sexual abuse (Morgan & Hawton, 2004; Esposito & Clum, 2002; Evans, Albers, Macari, & Mason, 1996; Matsumoto et al., 2009), female gender (Abram et al., 2008; Miller et al., 1982; Matsumoto et al., 2009), exposure to violence (Howard, Lennings, & Copeland, 2003), housing stress (Howard et al., 2003), white race (Kempton & Forehand, 1992; Alessi et al., 1984), impulsivity (Mace et al., 1997; Rohde et al., 1997a; Sanislow et al., 2003), anger (Putnins, 2005; Penn et al., 2003), a tendency to act out (Miller et al., 1982; Suk et al., 2009), younger age (Morris et al., 1995), and perceived negative parenting (Ruchkin et al., 2003).

When compared with incarcerated teens who did not engage in such behavior, self-harming youth had a greater number of offenses, were more disruptive in school, performed worse on a problem-solving task, and committed more rule violations (Suk et al., 2009; Chohanec, Josephson, Coleman, & David, 1991). Sanislow et al. (2003) compared self-injury in juvenile detainees to psychiatric

Table 1. Reported prevalence of suicidal ideation

Timeframe	Author(s) and country	Sample size and gender	Age	Reported prevalence
Current	Esposito & Clum, 2002 – US	200; 141 males, 59 females	12-17 years	52%
	Plattner et al., 2007 – Austria	319; 266 males, 53 females	14-21 years	21.6%
	Mace et al., 1997 - US	555; 458 males, 97 females	Mean age 15.3 years	14.2%
	Wasserman et al., 2002 – US	292 males	Mean age 17.04 years	9.6%
Previous month	Evans et al., 1996 – US	394; 334 males, 60 females	12-18 years	29.5%
Previous six months	Abram et al., 2008 – US	1829; 1170 males, 656 females	10-18 years	10.3%
Previous year	Alessi et al., 1984 – US	71; 40 males, 31 females	14-18 years	68%
	Lader et al., 2000 – UK	330; 314 males, 26 females	16-20 years	35% remand males, 20% sentenced males; 50% remand females, 34% sentenced females
	Suk et al., 2009 – Belgium	290; 228 males, 62 females	Males 16.3 years (mean) females 15.7 years (mean)	21.5% males, 58.1% females
Lifetime	Freedenthal et al., 2007 – US	723; 629 males, 94 females	Mean age 15.5 years	58.3%
	Morgan & Hawton, 2004 – UK	45; no information on gender	16-18 years	26.6%
	Morris et al., 1995 – US	1801; 1574 males, 219 females	21 and under	22%
	Plattner et al., 2007 – Austria	319; 266 males, 53 females	14-21 years	39.8%
	Rohde et al., 1997a – US	555; 458 males, 97 females	Mean age 15.3 years	33.7%
	Ruchkin et al., 2003 – Russia	271 males	14-19 years	16.9%
	Matsumoto et al., 2009 – Japan	301; 113 male, 22 female	15-17 years	21.2% males, 54.5% females
	Lader et al., 2000 – UK	330; 314 males, 26 females	16-20 years	46% remand males, 37% sentenced males, 59% remand females, 52% sentenced females
Kenny et al., 2008 – Australia	242; 223 males, 19 females	Males 17.2 years (mean), females 16.9 years (mean)	19.2%	

inpatients and found that while both groups reported similar elevated levels of distress, after controlling for depression and impulsivity, drug abuse remained associated only with self-harm among detainees.

Prevention of Suicide

Screening of youth upon entry varied. In a US governmental report, 84% of the 80% of facilities that reported suicide screening said that they evaluated all youth for risk (Hockenberry et al., 2009). Gallagher and Dobrin (2005; 2006b) found that only 60% of facilities screened all youth upon entry but those that did were less likely to report a suicide. Facilities differed in the level of suicide training; less than 38% of facilities that experienced a suicide provided annual suicide prevention training to its direct care staff (Hayes,

2005). Approximately 40% used neither mental health professionals nor counselors trained by mental health professionals to conduct suicide screening (Hockenberry et al., 2009). Levels of agreement about suicide risk by detention centre staff and mental health clinicians were weak (Stathis, Litchfield, Letters, Doolan, & Martin, 2008).

With regard to prevention, US governmental data indicated that between 21% and 85% of facilities placed high risk youth in locked observation rooms, removed risky items, used restraints, or used special clothing to prevent harm or identify youth at risk for suicide (Hockenberry et al., 2009). No article followed incarcerated youth prospectively to determine the impact of prevention measures.

Table 2. Reported prevalence of self-injury

Timeframe	Author(s) and country	Sample size and gender distribution	Age	Reported prevalence
While in custody	Kiriakidis, 2008 – UK	152 males	16-21 years, mean age 18.9 years	14.5%
Previous month	Wasserman et al., 2002 – US	292 males	Mean age 17.04	3.1%
Previous year	Alessi et al., 1984 – US	71; 40 males, 31 females	14-18 years	61%
	Evans et al., 1996 – US	394; 334 males, 60 females	12-18 years	24.4%
	Lader et al., 2000 – UK	330; 314 males, 26 females	16-20 years	15%/7% remand/sentenced males, 27%/16% remand/sentenced females
Lifetime	Kenny et al., 2008 – Australia	242; 223 males, 19 females	Males 17.2 years (mean), females 16.9 years (mean)	21.9%
	Abram et al., 2008 – US	1829; 1170 males, 656 females	10-18 years	11.0%
	Esposito & Clum, 2002 – US	200; 141 males, 59 females	12-17 years	33%
	Freedenthal et al., 2007 – US	723; 629 males, 94 females	Mean age 15.5	25.5%
	Hales et al., 2003 – UK	355 males	15-21 years	20%
	Harris et al., 1993 – Australia	47 males	15-19 years	40%
	Howard et al., 2003 – Australia	300; 270 males, 30 females	12-22 years	23.7%
	Kempton & Forehand, 1992 – US	51 males	11-19 years	30%
	Lader et al., 2000 – UK	330; 314 males, 26 females	16-20 years	27%/20% remand/sentenced males, 44%/37% remand/sentenced females
	Mace et al., 1997 – US	555; 458 males, 97 females	Mean age 15.3 years	19.4%
	Matsumoto et al., 2009 – Japan	301; 113 male, 22 female	15-17 years	6.2% male, 27.3% female
	Morgan & Hawton, 2004 – UK	45; no information on gender	16-18 years	15.6%
	Morris et al., 1995 – US	1801; 1574 males, 219 females	21 and under	16%
	Penn et al., 2003 – US	289; 234 males, 55 females	12-18 years	12.4%
	Putnins, 2005 – Australia	900; 810 males, 90 females	11-20 years	27.1%
Rohde et al., 1997b – US	60; 44 males, 16 females	Mean age 14.9	36.7%	
Rohde et al., 1997a – US	555; 458 males, 97 females	Mean age 15.3 years	19.4%	
Ruchkin et al., 2003 – Russia	271 males	14-19 years	17.6%	

Discussion

Several important findings are demonstrated in this study. Detained youth are at increased risk of suicide and suicidal ideation. There is significant morbidity and mortality in incarcerated youth and the rates of psychiatric disorder are elevated (Teplin, Abram, McClelland, Dulcan, & Mericle, 2002; Wasserman et al., 2003). Universal screening upon entry has been advocated (Penn & Thomas, 2005). Screening should be brief, easily administered, and used to identify those youth who require a comprehensive assessment (Cocozza & Skowrya, 2000). Work is underway to identify screening instruments (Galloucis & Francek, 2002; Grisso & Underwood, 2004), crisis assessment tools, and intervention models (Roberts & Bender, 2006) that can be used in youth correctional facilities.

Several limitations exist. One problem is the heterogeneity of the population. Rates of self-harm for males and females were often reported together in studies and the psychopathology and function of self-harm may have differed. A previous survey showed that the onset of puberty was related to self-harm, especially in girls and for self-cutting (Patton et al., 2007). Also, studies included individuals at different stages of the judicial process with a wide variety of charges. Another limitation was that of only studying youth residing in a youth correctional facility. Depending on the jurisdiction and nature of the crime, adolescents may have been placed in adult detention centers, which would limit their representation in our study. Another problem was that it was not possible to ascertain when in the incarceration process a youth developed maladaptive coping strategies to deal with stress, and whether suicidal ideation or self-injury occurred as a result of incarceration or preceded it.

There is much information that still needs to be discovered. One such area is distinguishing self-harm in older and younger juvenile adolescents. Dervic et al. (Dervic, Breut, & Oquendo, 2008) reported that youth suicides in those younger than age 14 was associated with cognitive immaturity/misjudgment, impulsivity, and availability of suicide methods, whereas older adolescents showed greater influence from depression and substance abuse. In adults, family history has been studied and suicidal behavior for manipulation versus ending life has been distinguished (Lohner & Konrad, 2006). By studying these areas in youth, prevention strategies can be implemented which may decrease the rates of self-injury and suicide.

Conclusion

Detained youth are at higher risk than the general population for suicidal ideation and self-injury. Psychiatric illness is common and more help is needed to identify and treat those at risk. It is recommended that all youth admitted to a correctional facility be screened on arrival. Those at risk should be closely monitored. Adequate training for staff is imperative. Further study is required to determine the

impact of prevention strategies on suicide and self-injury rates.

Acknowledgements / Conflicts of Interest

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