



RESEARCH ARTICLE

The Psychosocial Characteristics Associated with NSSI and Suicide Attempt of Youth Admitted to an In-patient Psychiatric Unit

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Abstract

Introduction: The purpose of this study was to explore the prevalence of self-harm and the psychosocial factors associated with self-harming behaviours in youth admitted to an in-patient psychiatric unit. **Methods:** Cross-sectional surveys of standardized measures were administered to youth and a separate survey to their caregivers while the youth were in hospital. **Results:** The mean age of the 123 youth who participated was 15.74 (SD 1.51) years, and 90 of 121 (74.38%) reported being female. Of the 115 who completed this question, 101 (87.83%) indicated that they thought of injuring themselves and 89 (77.39%) did engage in NSSI within the past month, and 78 of 116 (67%) reported that they had made an attempt to take their life. Youth who reported that they had attempted suicide (lifetime) reported significantly less difficulty with emotion regulation than youth who engaged in NSSI only, or both NSSI and suicide attempts. **Conclusions:** These youth reported a very high prevalence of self-harm, and in general substantial difficulty with regulating their emotions, and difficulty with their interpersonal relationships. The psychosocial distinctions evident between groups may have practical utility.

Key Words: *child and adolescent, psychiatric in-patient, self-harm, emotion dysregulation*

Résumé

Introduction: Cette étude avait pour but d'explorer la prévalence de l'automutilation et des facteurs psychosociaux associés aux comportements d'automutilation chez des adolescents hospitalisés dans une unité psychiatrique. **Méthodes:** Des questionnaires transversaux de mesure normalisées ont été administrés à des adolescents et un questionnaire distinct a été administré à leurs soignants pendant que les adolescents étaient à l'hôpital. **Résultats:** L'âge moyen des 123 adolescents qui ont participé était 15,74 ans (ET 1,51 an), et 90 sur 121 (74,38 %) disaient être de sexe féminin. Sur les 115 qui ont répondu à cette question, 101 (87,83 %) ont indiqué qu'ils pensaient à se mutiler et 89 (77,39 %) se sont adonnés à l'automutilation non suicidaire (AMNS) le mois précédent, et 78 sur 116 (67 %) ont déclaré qu'ils avaient tenté de s'enlever la vie. Les adolescents qui déclaraient avoir tenté de se suicider (de durée de vie) indiquaient significativement moins de difficulté avec la régulation émotionnelle que ceux qui s'adonnaient seulement à l'AMNS, ou à l'AMNS et aux tentatives de suicide. **Conclusions:** Ces adolescents rapportaient une prévalence très élevée d'automutilation, et en général, une difficulté substantielle à réguler leurs émotions, et une difficulté avec les relations interpersonnelles. Les distinctions psychosociales manifestes entre les groupes peuvent avoir une utilité pratique.

Mots clés: *enfant et adolescent, patient psychiatrique hospitalisé, automutilation, dysrégulation émotionnelle*

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Introduction

Self-harm encompasses a wide range of suicidal and non-suicidal self-injurious behaviours such as attempted hanging, overdosing and cutting (Skegg, 2005). Non-suicidal self-injury (NSSI) refers to deliberate and purposeful damage to one's own body tissue without conscious suicidal intent and using methods that are not socially or culturally sanctioned (Favassa, 1998; Nock & Favassa 2009; Walsh, 2006). Self-cutting, burning, hitting and hair pulling are common NSSI behaviours. Furthermore, broader terms such as self-harm, deliberate self-harm (DSH), self-injurious behaviour (SIB) and parasuicide are often used interchangeably and refer to suicidal and non-suicidal behaviours; using such terms that lack this distinction may reflect an idea that youth may not be cognizant of their intentions. While there are differences between NSSI and suicidal behaviours, for this report, we will use the term self-harm to include NSSI and suicidal behaviour.

NSSI appears to be increasing in prevalence especially in adolescent clinical populations. From 1990 to 2000 a three-fold increase in NSSI was reported among in-patient adolescents (Olson, Gameroff, Marcus, Greenburg, & Shaffer, 2005). This recent increase is perhaps one factor that explains the wide variability in prevalence estimates. The rates among clinical samples of adolescents engaging in self-injury range from approximately 10% to 70% (Darche, 1990; Langbehn & Pfohl, 1993; Nijman et al., 1999). Though the rates of self-harm are higher in clinical versus non-clinical samples, they also appear to be increasing in non-clinical samples.

The relationship between self-harm and specific diagnostic categories is unclear for adolescents. For example, Ferrara and colleagues (Ferrara, Terrinoni, & Williams, 2012) reported a strong link between borderline personality disorder diagnoses and NSSI, and a positive correlation between depression scores and number of types of NSSI. Similarly, NSSI has shown to be a strong predictor of suicide attempt in clinical samples of adolescents with depression (Asarnow et al., 2011; Wilkinson, Kelvin, Roberts, Dubicka, & Goodyer, 2011). In adolescent samples, self-harm has been reported to frequently co-occur with psychiatric diagnoses including depression (Csorba, Dinya, Plener, Nagy, & Pali, 2009; Dougherty et al., 2009; Guerry & Prinstein, 2010; Prinstein et al., 2010; Tuisku et al., 2009), anxiety (Boxer, 2010; Tuisku et al., 2006), conduct and oppositional defiance disorder, post-traumatic stress disorder, thought disorders and adjustment disorder (Boxer, 2010; Csorba et al., 2009; Guerry & Prinstein, 2010) and substance use disorder (Tuisku et al., 2009).

Few data exist of child and adolescent clinical populations in Canada; only three studies appear to have been published. Preyde and colleagues (2012) reported 34% of children and adolescents accessing intensive mental health services (i.e., residential and intensive home-based) were identified by

clinicians at admission as self-harming. Nixon, Cloutier and Aggarwal (2002) found that adolescents admitted or participating in inpatient and acute youth partial hospitalization programs reported almost daily urges to self-harm, mainly to cope with feelings of depression and to release intolerable tension. Cloutier and colleagues (Cloutier, Martin, Kennedy, Nixon, & Muehlenkamp, 2010) sampled Canadian adolescents admitted to emergency crisis services during a one year period. These investigators found that 50 percent (234/468) had deliberately self-harmed within the previous 24 hours, of these youth 91% engaged in NSSI, 5% attempted suicide only, and 4% engaged in both. Furthermore, there is scant information about family and parental characteristics in Canadian studies of youth accessing intensive mental health services. For example, Cloutier and colleagues (2010) reported that patients in the suicide attempt only group were more likely to come from intact families and that more patients in the co-occurring suicide attempt and NSSI group had a history of involvement with a child and youth protection agency than youth in the other groups. Similarly, Preyde and colleagues (2012) reported that youth who were identified as self-harming by clinicians at admission were also identified as having poorer functioning in the home compared to youth who were not identified as self-harming.

There is scant research in which the psychosocial factors of adolescents accessing inpatient psychiatric care were examined according to youths' self-harming behaviour. In a retrospective chart review of an outpatient psychiatric clinic in the USA Jacobson and colleagues (Jacobson, Muehlenkamp, Miller, & Turner, 2008) reported that youth who attempted suicide only were more likely to be diagnosed with post-traumatic stress disorder and major depressive disorder than youth who engaged in NSSI only. As noted above, Cloutier and colleagues (2010) reported differences with the suicide attempt (SA) only group presenting with the highest level of psychopathology (depressive symptoms, suicide ideation and impulsivity). However, in a recent review (Andover, Morris, Wren, & Bruzzese, 2012), adolescents who engage in both NSSI and SA have generally been found to experience more severe symptomology than youth engaged in NSSI only or SA only. Wolff and colleagues (2013) examined cognitive and social factors in psychiatrically hospitalized adolescents and found that the NSSI+SA group reported less perceived familial support, and greater cognitive distortions, negative self-statements, and negative views of self, world and the future than either the NSSI or SA only groups. Collectively, these studies suggest that youth who attempt suicide may be distinguished from other youth with psychiatric illness including those who engage in NSSI only.

In the general population, self-harm appears to serve four main functions (Nock, 2010): an emotion regulatory function, self-punishment, social attention or reinforcement, and redirection of attention (e.g., attempt to prevent bullying).

As such it performs an intrapersonal function (e.g., decreased aversive state) and an interpersonal (e.g., increased attention or support) function (Nock, 2010). Youth reports indicate that the main reason they engage in NSSI behaviours is to regulate, especially decrease, painful emotions. NSSI may help youth suppress negative affect or cognitions such as anger, anxiety, depression, fear and tension (Chapman, Gratz, & Brown, 2006; Nock & Prinstein, 2005). This rationale for the use of NSSI suggests that youth have difficulty with emotional regulation. Klonsky (2007) identified seven superordinate functions via a literature search: affect regulation, antidissociation, anti-suicide, interpersonal boundaries, interpersonal influence, self-punishment and sensation seeking. In a prospective study with a university sample, Martin and colleagues (2013) identified four overarching functions: internal emotion regulation, social influence, external emotion regulation and sensation seeking.

Various investigations have been focussed on emotion regulation with clinical samples of youth with self-harming behaviours. Nixon and colleagues (2002) reported that inpatient adolescents used self-injuring behaviour as a means of regulating (to cope with dysphoric affect) their emotions and expressing their emotions, namely to express frustration, anger or revenge. Nock and Kazdin (2002) reported the presence of negative automatic thoughts, depressed mood, and hopelessness in psychiatric in-patient children and young adolescents with suicide-related outcomes. Sim and colleagues (Sim, Adrian, Zeman, Cassano, & Friedrich, 2009) examined emotional regulation skills, and these authors did report that emotional regulation processes mediated the role between family environment and frequency of self-harm in psychiatrically hospitalized adolescents females (not males). Adrian and colleagues (Adrian, Zeman, Erdly, Ludmila, & Sim, 2011) revealed the primacy of emotional dysregulation as an underlying process in female adolescents with NSSI who were admitted to a psychiatric hospital. These authors found that female adolescent psychiatric patients reported that their family and peer relationships were characterized by conflict and a lack of assistance for helping them to manage their emotions (Adrian et al., 2011), the results of which support the idea that invalidating or unsupportive social contexts foster the link between emotional dysregulation and self-harm (Crowell, Beauchaine, & Linehan, 2009). It has been suggested that treatment should effectively target emotional dysregulation (Gratz, 2007) or teach people to use language to describe emotions which may affect knowledge and experience of emotions (Lane, Ahern, Schwartz, & Kaszniak, 1997).

The understanding of the relation of the social environment to youth who self-harm is growing. There are few studies in which the characteristics of parents have been examined in relation to their child's symptoms. For example, Czyz and colleagues (Czyz, Liu, & King, 2012) reported that improved connectedness with family was related to less suicide ideation and less severe depression among adolescents

following psychiatric hospitalization. Engaging families in the treatment of children mental health problems has been deemed important though challenging (Gopalan et al., 2010), and perhaps especially so as the youth develops (ages) and may be attempting to gain autonomy from parents. Attachment theory (Bowlby, 1969) offers one conceptual paradigm of the relation between the family context and self-harm. Children who do not feel warmth and responsiveness from a parental figure may experience inconsistent or emotionally unavailable parenting, which can lead to maladaptive working models of attachment. In times of stress, such models could lead youth to consider interpersonal relationships as inadequate sources of support. Insecure attachment patterns could impede the development of emotion regulation skills. Thus, the relations between emotion regulation, perceived relationships, self-harm and clinical outcomes are complex.

The purpose of this study was to explore the quality of interpersonal relationships, emotion regulation and self-harm in children and adolescents admitted to the Child and Adolescent In-Patient (CAIP) Unit at Grand River Hospital. There were two main objectives for this report: 1) to examine the prevalence of self-harm; and, 2) the association of emotion regulation, depression, relationship with peers and attachment of youth admitted to an in-patient psychiatric unit by type of self-harming behaviour. Secondary objectives were to report the parents' experiences, and compare youth' and parents' ratings of youth symptom severity.

Methods

Youth admitted to the CAIP Unit have a mean length of stay of about five days. CAIP is classified as crisis assessment, stabilization and treatment, and therefore it is both a general child/adolescent and crisis unit. It is typical for caregivers (i.e., parents or legal guardians) to visit CAIP the day following admission and see the patient's social worker to provide intake information and to receive counselling.

Participants included all children and adolescents consecutively admitted to the CAIP unit who provided consent or assent. Adolescents who had been determined by medical staff to be incapable of consenting were not asked to participate. Parents or guardians made this determination for children less than 14 years of age (i.e., aged 13 years and 364 days and less). Children and adolescents were excluded if they had an unstable psychiatric condition, intellectual disability or pervasive developmental disability.

Adolescents (aged 14-18 years) who were admitted to the CAIP Unit were informed by medical staff that a research study was in progress and were asked by staff if they could give their first name to the research assistant (RA) to learn about the study. Staff gave the RA the first name and location of youth with capacity to consent. The RA obtained informed consent and asked consent for researchers to contact

their parent, caregiver or guardian to complete a survey on the parents' characteristics and family environment (this survey was to be completed by a caregiver living or previously living in same household, not a guardian/representative of the Children's Aid Society).

For children under 14 years of age, on caregivers' first visit the social worker informed them that a study on characteristics of youth accessing CAIP was in progress, the caregivers were given an informational sheet, and asked if they would like to speak with the RA to learn more about the study. For caregivers who agreed, the RA requested informed consent for their child to participate in the study, and obtained child assent. The RA also asked parents if they would like to participate in a survey. Research Ethics Board (REB) clearance was obtained from both Grand River Hospital and University of Guelph.

Measures

For youth emotional dysregulation was measured with the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). The DERS is a 36-item self-report measure used to assess characteristic patterns of emotional dysregulation. The DERS comprises six subscales: non-acceptance of emotional responses, difficulties engaging in goal-directed behaviour, impulse control difficulties, lack of emotional awareness, limited access to emotional regulations strategies, and lack of emotional clarity, rated on a 5-point likert scale. The scale was shown to have excellent internal consistency (0.93), good test-retest reliability, and construct and predictive validity (Gratz & Roemer, 2004). When tested with an adolescent population, internal consistencies were reported as good to excellent (alphas ranged 0.76 to 0.89) and construct validity was reported as excellent (Weinberg & Klonsky, 2009). This measure has been successfully used with youth admitted to a psychiatric unit (e.g., Adrian et al., 2011).

Depression has been strongly linked to self-harming behaviour, and it was measured with the Centre for Epidemiological Studies Depression Scale for Children aged six to 17 years (CES-DC; Weissman, Orvaschel, & Padian, 1980). The CES-DC is a 20-item self-report measure for which youth rate the items on a 4-point likert scale. This measure was shown to be valid and reliable (Faulstich, Carey, Ruggiero, Enyart, & Gresham, 1986) with excellent internal consistency ($\alpha=0.90-0.93$; Hilsman & Garber, 1995).

The quality of the relationship with the primary caregiver was measured with the Adolescent Unresolved Attachment Questionnaire (AUAQ; West, Rose, Spreng, & Adam, 2000). The AUAQ is a brief 10-item questionnaire in which youth rate the caregiving that they experienced. It is rated on a 5-point likert scale and has three subscales: Failed protection from parent (aloneness), anger/dysregulation toward parents' failure to respond to child, and fear (feeling unprotected and helpless). It has been shown to be valid

and reliable with youth in psychiatric treatment with satisfactory internal consistency (Cronbach's alpha ranged from 0.66 to 0.71; West et al., 2000). Higher scores reflect higher levels of failed protection, anger and fear.

Relationship with peers was measured with the Inventory of Peer Attachment (IPA; Armsden, McCauley, Greenberg, Burke, & Mitchell, 1991; Armsden & Greenberg, 1987). The IPA was used to assess adolescents' perceptions of the positive and negative affective/cognitive dimension of their relationship with close friends. It contains three subscales: alienation, communication and trust, and is a valid and reliable measure of perceived peer relationship (Armsden & Greenberg, 1987). Test-retest reliability (0.93) internal reliability (0.92) and construct validity have been reported as excellent (Armsden & Greenberg, 1987). For this report, statistical analyses were performed with the total mean score.

Psychological problems were measured with the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). The SDQ is a widely used self-report screen of 25 items for psychological problems in children and adolescents. Subscales include Hyperactivity-Inattention, Emotional Symptoms, Conduct Problems, Peer Problems and Prosocial Behaviours, scored on a 3-point likert scale. It has shown to be valid and reliable (Lundh, Wangby-Lundh, & Bjarehed, 2008; 2011) with good internal consistency (0.73; Goodman, 2001), and has been established as the most widely used instrument in mental health research with youth (Vostanis, 2006). The youth self-report symptom checklist, Pediatric Symptom Checklist for youth aged 11 years and older (Y-PSC; Jellinek et al., 1988) was also administered. It consists of 35 items rated on a 3-point scale (Never, Sometimes, Often). The measure has shown excellent test-retest reliability (alpha coefficients ranged from $r = 0.84 - 0.91$) and strong internal consistency (Cronbach alpha = 0.91) (Murphy & Jellinek, 1988; Murphy, et al., 1996). Youth were also asked to report their diagnosis; since this information was not obtained from clinical files or clinician ascertainment, these measures of psychological problems and symptoms were used to situate youth in clinical terms.

Self-harm was measured with the Ottawa Self-Injury Questionnaire (OSI; Nixon & Cloutier, 2005). The OSI is an in-depth measure of occurrence, frequency, types and functions of self-harm, and has been shown to be valid and reliable with excellent internal consistency scores of 0.67 to 0.87 (Martin et al., 2013) and is appropriate for use with clinical samples of adolescents.

Parents completed five measures. The Parental Stress Scale (PSS; Berry & Jones, 1995) is an 18-item measure of levels of stress experienced by parents and it includes items tapping into closeness, satisfaction and positive and negative aspects of parenting. It is rated on a 5-point scale ranging from strongly disagree to strongly agree and has shown excellent reliability and construct validity (Berry & Jones,

1995) the Centre for Epidemiological Studies-Depression (CES-D; Radloff, 1977) is a self-report measure of depression, 20-item scale with a 4-point response option (rarely or none of the time, most of the time). It has shown good internal consistency (0.85), and discriminant and construct validity (Radloff, 1977). The General Functioning subscale of the Family Assessment Device (FAD; Byles, Byrne, Boyle, & Offord, 1988; Epstein, Baldwin, & Bishop, 1983) is a 12-item measure of family functioning with good construct validity and internal consistency (range 0.71 to 0.92; Byles et al., 1988). A score of 2.0 has been specified to identify families that fall within the clinical range of unhealthy functioning (Miller, Epstein, Bishop, & Keitner, 1985). Parents' sense of perceived social support was measured with the Multi-dimensional Scale of Perceived Social Support (MDSPSS; Zimet, Dahlem, Zimet, & Gordon, 1988). The MDSPSS has 12-items rated on a 7-point scale with higher score indicating greater perceived support. It has shown good concurrent, construct and factorial validity, and excellent internal consistency (alpha coefficients ranging from 0.90 to 0.95) (Zimet, et al., 1988). The last measure was the parent version of the Pediatric Symptom Checklist (PSC; Jellinek et al., 1988) where the parent rated the youth who participated in this study. One intent for the PSC was to compare youth and parent ratings.

Data analysis and sample size

Descriptive statistics were used to present characteristics. Data were analyzed using a one-way Analysis of Variance (ANOVA) comparing self-harm status (i.e., NSSI only, SA only, both NSSI-SA) on psychosocial variables (i.e., difficulty with emotion regulation, depression, relationship with peers, unresolved attachment). Tukey's HSD was used to conduct post-hoc tests. T-tests were also used to explore differences in these psychosocial variables in youth who reported not engaging in NSSI within the past month to those who did, and youth who reported not attempting suicide to those who have reported (lifetime). A final statistical analysis was the comparison of parents' and youths' ratings of the youths' symptoms (PSC). Initially a paired-t-test was proposed; however, the REB did not approve the pairing of these data. Hence, an independent samples t-test was performed.

Approximately, 15 youth are admitted to CAIP each week, and only five to eight per month are repeat visitors. Exploring characteristics of youth would require a sample size of about 50 youth (Aldridge & Levine, 2001), and prevalence estimates in psychiatric or crisis units suggest that approximately 50% of youth engage in self-harming behaviour (Cloutier et al., 2010; Jacobson et al., 2008); thus, our sample size target was 100 youth.

Results

One hundred and twenty-three youth participated in the survey. Their mean age was 15.74 years (SD 1.51; range 7 to 18 years), and 90/121 (74.38%) indicated that they were female (Table 1). Males reported being older than females ($t=-2.1$, $p = 0.038$). The mean age of onset of self-harm was reported as 12.78 years (SD 2.33), and 16 youth reported being between seven and ten years old when they started self-harming. On average youth scored very high on DERS (mean 123.55, SD 22.5) which is presented as sum scores. A calculation of mean scores for the DERS subscales

Table 1. Youth characteristics

Characteristic	
Age, mean (SD)	15.74 (1.51)
Education, n (%)	
Grade 7 & 8	5 (4.07)
Grade 9 & 10	41 (33.34)
Grade 11 & 12	49 (39.84)
Fifth Year	4 (3.25)
Graduated	8 (6.50)
University	5 (4.07)
Not in school	1 (0.81)
Missing	9 (7.32)
DERS, mean (SD)	123.55 (22.51)
Nonaccept	19.19 (6.43)
Goals	20.05 (4.61)
Impulse	19.86 (6.23)
Awareness	19.29 (5.21)
Strategies	29.64 (6.44)
Clarity	15.38 (4.59)
CES-DC, mean (SD)	44.07 (10.66)
Strengths and difficulties, mean (SD)	23.87 (5.34)
Emotional symptoms	7.69 (2.15)
Conduct Problems	3.67 (2.44)
Hyperactivity/ Inattention	6.94 (2.16)
Peer relationship problems	5.54 (1.75)
Pro-social behaviour	7.89 (1.95)
Pediatric Symptom Checklist, mean (SD)	40.63 (9.86)
Relationship with parents, mean (SD)	27.17 (9.20)
Failed protection	10.78 (4.45)
Anger	8.29 (3.66)
Fear	8.23 (4.14)
Relationship with friends, mean (SD)	42.99 (14.37)
Communication	13.50 (4.65)
Trust	14.62 (5.39)
Alienation	11.51 (3.42)
<i>n</i> = ranges from 113 to 123	

	Primary diagnosis	Second diagnosis	Third diagnosis
Diagnostic label	n (%)	n (%)	n (%)
Depression	50 (40.65)	5 (4.07)	2 (1.63)
Anxiety	4 (3.25)	21 (17.07)	4 (3.25)
ADHD/ADD	4 (3.25)	3 (2.44)	
ASD	2 (1.63)		
Bipolar	2 (1.63)	2 (1.63)	
OCD	2 (1.63)		
PTSD	2 (1.63)	2 (1.63)	3 (2.44)
Anger management	1 (0.81)		
Panic attacks	1 (0.81)	1 (0.81)	
Psychotic	1 (0.81)		
Eating disorder		2 (1.63)	
BPD		1 (0.81)	

ASD = Autism Spectrum Disorder; OCD = Obsessive Compulsive Disorder;
PTSD = Post-traumatic Stress Disorder

suggested that youth had the most difficulty with engaging in goal-directed behaviours when upset (e.g., difficulty concentrating). Youth also reported very high depression scores (CES-DC mean 44.1, SD10.7); above 15 is suggestive of depressive symptoms. Youth scored in the abnormal range in general difficulties, though within the normal range on prosocial behaviours. Their score on the symptom checklist indicates moderate to serious impairment in psychosocial functioning. Youth reported a range of diagnoses (Table 2) though depression was by far most common.

Of the 115 youth who completed this question, 101 (87.83%) indicated that they thought of injuring themselves within the past month, and 89 (77.39%) youth reported that they actually did harm themselves. In the past six months, most youth thought about (97/115; 84%) and actually (90/115; 78%) self-harmed without suicide intent. Within the past year, 104/113 (92%) reported thinking about suicide. Lastly, 78/116 (67%) reported a lifetime prevalence of attempted suicide.

Of the youth who reported engaging in self-harming behaviour, 29 of 106 (27%) reportedly engaged in NSSI only, 12/106 (11%) SA only, and 65/106 (61%) engaged in both NSSI and SA (Table 3). The SA only group reported statistically less difficulty with regulating emotions than the other two groups. Though only a trend toward significance, the NSSI and SA group appears to have higher scores on depression ($p=0.056$) and unresolved attachment ($p=0.13$) – it is possible that these differences could have reached significant levels with a larger sample size. Of interest, youth who engaged in NSSI reported greater challenges with all constructs EXCEPT relationships with peers compared to youth who did not engage in NSSI (Table 4). Notably, youth

who attempted suicide reported greater unresolved attachment than youth who had not attempted suicide (Table 5).

Surprisingly, only 31 parents participated in this survey. Parents who completed the survey reported a mean age of 45 years (SD 5.86), were mainly female (25/30), and in a marital (15/30) or common-law (5/30) relationship. The mean household income was reported by 25 parents as 81,400 (SD 42,651.69, range 19,000 to 175,000). Of those who provided information on ethnicity ($n=15$), most parents self-identified as Canadian ($n=13$; 87%), one reported European (6.5%), and one reported Dominican (6.5%). Parents reported elevated levels of stress (Table 6), and a slightly elevated level of depression though their mean social support score (5.23) was not significantly different than the norm of 5.58 (Zimet et al., 1988). There was no statistically significant difference between youth and parent ratings of youth on the symptom checklist ($t= 1.50$; $p=0.1356$). No further analyses were conducted for this report since the sample size was quite small.

Discussion

The prevalence of self-harming behaviour of youth accessing this general and crisis intervention in-patient unit was quite high with nearly 80% reporting to engage in NSSI, and almost 70% reported attempting suicide (lifetime). Only 16 of 122 (13%) youth accessing CAIP reported not engaging in any self-harming behaviour. The prevalence figures for youth who reported not engaging in self-harming behaviour and NSSI only and SA only are similar to those reported by Wolff and colleagues (2013) who indicated that 20% (37/185) accessing a psychiatric inpatient facility reported no history of self-harming behaviour and 80% did. Naturally, our prevalence figures for engaging in self-harming

Variable	NSSI only (n=25-28)	NSSI – Suicide attempt (n=61-65)	Suicide attempt Only (n=11)	P value
DERS	132.42 (22.56)	126.91 (18.44)	105.36 (18.81)	0.001 ^a
Depression	43.91 (12.70)	46.59 (7.04)	39.09 (15.85)	0.059
Peers	3.37 (0.71)	3.28 (1.00)	3.62 (0.60)	0.538
Unresolved attachment	25.57 (8.22)	29.33 (9.27)	25.50 (11.04)	0.130
Symptom checklist	44.29(8.93)	41.28(9.01)	36.67(9.50)	0.107

DERS = Difficulty with Emotion Regulation Scale
^aSuicide Attempt only is statistically lower than NSSI only and Self-harm

Variable	No NSSI past month (n=22-26)	NSSI past month (n=78-85)
DERS	106.15 (20.27)	129.62 (19.64) ^b
Depression	38.92 (13.84)	45.97 (8.90) ^a
Peers	3.51 (0.71)	3.31 (0.94)
Unresolved attachment	23.69 (9.45)	28.38 (9.05) ^a
Symptom checklist	35.86(10.92)	42.89(8.72) ^a

DERS = Difficulty with Emotion Regulation Scale
^ap<0.05; ^bp<0.001

Variable	No suicide attempt (lifetime) (n=32-38)	Suicide attempt (lifetime) (n=71-77)
DERS*	124.64 (26.30)	123.66 (19.93)
Depression	42.40 (12.65)	45.49 (9.13)
Peers	3.39 (0.75)	3.33 (0.96)
Unresolved Attachment	24.29 (8.11)	28.73 (9.59) ^a
Symptom checklist	41.73.86 (10.72)	40.61 (9.15)

DERS = Difficulty with Emotion Regulation Scale ^ap<0.05

behaviours (106/122; 87%) are much higher than Cloutier and colleagues (2010) since these investigators measured self-harming behaviour within the last 24 hours of youth accessing emergency crisis services (234/468; 50%).

Youth rated themselves as very high in difficulty with emotions and most thought about and engaged in self-harming behaviour. A significant proportion also reported attempting suicide. In this sample, the SA only youth reported less difficulty with regulating their emotions than youth with a history of NSSI or NSSI and SA. The SA only youth (i.e., without a history of NSSI) may have been overall a healthier group and more likely to be reacting to a clear and overwhelming psychosocial stressor which precipitated the suicide attempt, but did not have the years of emotion regulation difficulties and psychosocial adversity often seen in the youth with NSSI. Verifying this reasoning should be the focus of future research.

There were distinctions between youth who engaged in NSSI and youth who did not, with NSSI youth reporting greater difficulty regulating emotions, higher depression scores and higher unresolved attachment scores. These differences are consistent with other research on NSSI. It was expected that NSSI youth would have greater difficulties with peers; however, this finding was not supported. It should be noted that three youth did not complete this measure of peer attachment and wrote on the questionnaire that they had no friends. Youth who attempted suicide were similarly distinguished from youth who did not on unresolved attachment. It should be noted that in this analysis, the youth who attempted suicide included those with and without a history of NSSI and this finding may prove useful for clinical practice particularly in relation to attachment histories. It seems further exploration into the ability to form personal relationships or attachment for these youth is warranted.

Demographic variables	n	Mean, (SD)
Age	30	45.20 (5.86)
Number of children	26	2.69 (1.23)
Household income (yearly in dollars)	25	81400.00 (42651.00)
Relationship status	30	Percent
Married	15	50%
Single	7	23%
Common law	5	17%
Engaged	1	3%
Psychosocial variables		Mean, (SD)
Parental stress	31	38.97 (9.61)
Parental depression	31	16.70 (8.92)
Parental social support	31	5.23 (1.62)
Family assessment device	31	1.95 (0.60)
Pediatric symptom checklist	31	37.23 (11.84)

Youths' scores on the DERS (mean score 123) were high even in comparison to other psychiatric in-patient adolescent samples; for example, Adrian and colleagues (2009) reported a mean score of 104.51 (SD 23.22) with a sample size of 140 and Schramm, Venta and Sharp (2013) reported a mean score 102.56 (SD 28.47), sample size 208. It may be interesting to compare responses elicited with the self-report measure, the DERS, and responses elicited through clinical interview. Would responses from this population be more accurate through clinical interviews which may allow for clarification to their responses regarding emotion than through a self-report measure? There may be difficulties obtaining youths' responses via clinical interviews. For example, youth may be susceptible to suggestivity (suggestion bias). There may also be the transference of the parent onto the role of the interviewer, and this and other factors may make self-reported data more useful. Youth who are used to denying their problems to authority figures (e.g., parents, teachers) may be unlikely to report these issues to an interviewer. Conversely, part of the clinical intervention with this population of youth who self-harm is to provide assistance with expanding their repertoire of emotional literacy in order to be able to differentiate between emotions such as sadness, anger, frustration, fear, and so forth. It may be that the basic defense of avoidance is what may lead this group to self-harm in the first place, and avoidance does not lend itself to an ability to respond in an informed way to a self-report questionnaire. However, investigators would need considerable resources to collect data via clinical interviews.

Parents' mean score for depression suggested they are at risk for clinical depression (i.e., above the cut off of 16), and they reported elevated stress though somewhat normative

social support. In this sample, only two parents reported a household income that would fall below the region's Low Income Cutoff for a four-person family, and the majority (78%) were in a spousal relationship. That there was no statistically significant difference in youths' and parents' scores of youth symptoms provides some confidence that youth did not inflate their scores.

One of the most significant discoveries from this study was the extreme difficulty in sampling or accessing parents of youth admitted to an in-patient clinic. In terms of the structure or operation of an inpatient unit, the availability of parents can be a significant issue. Visiting hours are outside of structured day time treatment during typical working hours for psychiatry, social work and team lead staff, so individuals facilitating the information gathering were not often available during visiting hours. Also, patients do not always have the best relationship with their parent or caregiver, so do not invite the parents to visit them. Many patients also did not consent to permit researchers to approach their parents. As a result there is a logistical issue that interferes with the involvement of parents and hence their participation in research. The patients themselves are a captive audience, so to speak, whereas the parents attend when both the structure of the unit and their child's decision permits. The other difficulty is the emotional and psychological burden that parents face during an admission of their child to a psychiatric unit which may impose as a challenge for staff to assess what is reasonable to ask of parents in this situation of very high stress. There is much information to be shared and support to be provided in a relatively short period of time on a brief stay unit, so to add a further request around research can be daunting for clinicians who may not want to overwhelm parents and also wish to keep them engaged

in the clinical process. It is a challenge at times to juggle a clinical imperative with an optional research opportunity. This finding is important for future research in an in-patient adolescent unit suggesting that not requiring parent consent may be preferable since youth are already situated in a setting with a high level of attention and expertise.

This difficulty in recruiting parents has implications for the conduct of research with the clinical adolescent and/or parent populations. Youth 14 and older without active psychosis or developmental disability were able to provide informed consent to participate without consent from their parents. The very small sample size of parents ($n=31$) reflects the challenge in contacting parents for research purposes including parents as participants and the children for whom parents must provide informed consent. Only five of the 123 (4%) youth who participated in this survey were under 14 years, and thus required parental consent according to the Research Ethics Board. There is no particular age of consent for medical treatment in Ontario (College of Physicians and Surgeons of Ontario; CPSO, 2006) (in Quebec, it is 14 years); the concept of maturity has replaced chronological age such that physicians must determine if the child is capable of understanding the nature of the proposed medical treatments, their effects, and the consequences of refusing treatment. However, guidance to principal investigators (Health Canada Research Ethics Board, 2009) is consistent with the CPSO (in Quebec, the child must be 18 years old to consent to participating in research), though in practice, investigators must often obtain parental consent for their adolescent children (e.g., under 16 years) depending on the circumstance. "Children under 16 years of age are able to give their full consent providing they have been counselled and do not wish to involve their parents and they have sufficient maturity to understand the nature, purpose and likely outcome of the proposed research" (Health Canada, 2009). The context (e.g., site of data collection – in this case youth were already in a psychiatric hospital), the risk of harm, and the characteristics of the youth (e.g., youth who have previously experienced abuse may require special consideration) are important factors in determining appropriateness of children providing consent to participate in research.

Implications for practice

The psychosocial variables associated with self-harm behaviours in this study may be useful for identifying youth at risk in clinical practice. Depression and attachment along with interpersonal functioning may be a new avenue for clinical and research exploration for youth with severe difficulties in regulating emotion and self-harming thoughts and behaviours. These findings, in addition to prior research in which participants high in alexithymia were also found to have impaired mentalizing abilities (Moriguchi et al., 2006), suggest that attention to mentalization is warranted.

Mentalization refers to the capacity or cognitive skills in understanding the thoughts and feelings of others, or that other people have beliefs, intentions and desires that can differ from those of the self (Frith & Frith, 2003). It has been speculated that adolescents use self-harm in response to relationship stress; when mentalization is compromised, youth experience negative cognitions with pronounced intensity, which leads to intense depression and a strong urge for distraction (Bateman & Fonagy, 2004). Furthermore, mentalization-based treatment for self-harm in adolescents was found to be superior to treatment as usual (Rossouw & Fonagy, 2012) and this finding was explained by reduced attachment avoidance. Thus, attention to mentalization and interpersonal skills may prove beneficial.

There were several limitations of this study. This was a cross-sectional study and no causal or long-term inferences can be made. The overall sample size of youth was adequate; however, the number in each self-harming group may not have been sufficient to identify group differences. It was enormously difficult to recruit parents and this challenge is reflected in this sample size which had implications for performing statistical analyses. Also, it should be noted that ethnic diversity was not reported by parents and as such the results may not generalize to diverse populations.

In conclusion, a significant proportion of this in-patient sample of youth reported engaging in self-harming behaviours, and they also reported significant levels of emotional dysregulation and depression. Moreover, some distinctions between groups with differing self-harming behaviours were evident. In the future, investigators may build upon these findings to advance knowledge that may inform intervention.

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