Understanding the Social Functions of Nonsuicidal Self-Injury in Community Adolescents
Comprendre les fonctions sociales de l'automutilation non suicidaire chez les adolescents vivant dans des communautés

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ABSTRACT

The objective of this article is to provide clinicians with an overview of various social functions of nonsuicidal self-injury as they relate to recent cross-cultural literature, in order to ultimately inform effective treatment planning. Evidence is presented supporting Nock's (2008) social theory of nonsuicidal self-injury, indicating that self-injury acts as a means of communication, often relating to unreceptive environments or through skill deficits. Further evidence is presented suggesting self-injury acts as a way of avoiding undesirable tasks or increasing group belonging and closeness in relationships. Although the media may influence self-injury, the relationship is complex and remains unclear. Given the above findings, practitioners should focus on addressing skill deficits, including family members in treatment, investigating the role of the Internet in relation to self-harm, and developing an appropriate professional response in order to reduce contagion.

RÉSUMÉ

Le présent article a pour objet de fournir aux cliniciens un aperçu des diverses fonctions sociales de l'automutilation non suicidaire en lien avec la récente littérature interculturelle, au fin ultime de favoriser la planification efficace du traitement. On y présente des éléments de preuve à l'appui de la théorie sociale de Nock (2008) sur l'automutilation non suicidaire, qui indiquent que l'automutilation sert de moyen de communication, souvent en lien avec des milieux peu réceptifs ou des déficits de compétence. Selon d'autres éléments de preuve présentés, l'automutilation sert de moyen d'éviter des tâches indésirables ou d'accroître le sentiment d'appartenance au groupe et de proximité dans les relations. Bien que les médias puissent influencer l'automutilation, la relation est complexe et reste confuse. À la lumière des observations décrites, les praticiens devraient aborder les déficits de compétence, l'inclusion des membres de la famille dans le traitement, l'examen du rôle d'internet et son lien avec l'automutilation, et l'élaboration d'une réponse professionnelle appropriée afin de réduire les risques de contagion.

Nonsuicidal self-injury (NSSI) is a growing concern in community adolescent populations around the world. Despite the knowledge accumulated regarding various aspects of self-injury, the social functions of self-injury are understudied and undervalued in their importance in treating self-harm (Nock & Prinstein, 2004). Through examining recent cross-cultural empirical evidence in relation to selected

aspects of Nock's (2008) social theory of nonsuicidal self-injury and clinically relevant avoidance functions, three major social functions emerge. Adolescents may resort to self-harm in an effort to communicate distress or receive increased attention. Self-injury may also allow adolescents to avert unpleasant situations or interactions. Further, self-injury may act as a means of fostering relational closeness between peers.

The purpose of this article is to integrate conceptual and current empirical knowledge to describe selected social functions of nonsuicidal self-injury, in particular, those outlined by Nock's (2008) social theory of nonsuicidal self-injury. This article will also examine literature relating to earlier work by Nock and Prinstein (2004), which suggested that social negative reinforcement functions could also potentially influence nonsuicidal self-injury. By discerning the various social functions of nonsuicidal self-injury, as well as the impact of family environment, skill deficits, and Internet-based interactions, practitioners experience greater competency in effectively intervening with adolescent populations who self-harm.

Nonsuicidal self-injury continues to be a growing concern in populations of adolescents in the community not currently seeking treatment. Nonsuicidal self-injury refers to "the direct, deliberate destruction of one's own body tissue in the absence of suicidal intent" (Nock & Favazza, 2009, p. 9) and typically refers to methods of self-injury such as "self-poisoning or overdosing, cutting, burning, scalding, head banging, and hair pulling" (Balcombe, 2011, p. 14). International studies of community rates of adolescent nonsuicidal self-injury indicate that between 13.9% and 46.5% of adolescents engage in self-harm at some point in their life (Jacobson & Gould, 2007; Lloyd-Richardson, Perrine, Dierker, & Kelley, 2007; Plener, Libal, Keller, Fegert, & Muehlenkamp, 2009; Ross & Heath, 2002; Zetterqvist, Lundh, Dahlström, & Svedin, 2013). Given these high rates, counsellors face continual challenges to understand the underlying factors behind the behaviour's onset and maintenance. Although researchers have gathered a lot of information about self-injury (Nock, 2012), much of this information pertains to the correlates, associated characteristics, and constructs relating to self-harm, which has limited practitioners' ability to intervene and effectively treat self-injury (Nock & Prinstein, 2004).

Despite the multitude of explanations addressing nonsuicidal self-injury, ranging from psychodynamic theories to connections with various psychiatric disorders (Nock, 2009), few models provide the concrete direction necessary to understand and ultimately target self-harming behaviour. Earlier work of behaviourists arguably laid the necessary groundwork to uncover the connection between interpersonal events and self-injury several decades ago. In 1965, Lovaas, Freitag, Gold, and Kassorla conducted experiments with self-injuring schizophrenic children in an attempt to understand the functional relationship between self-harm and external reinforcement through the processes of operant conditioning. In the first of three studies, the child was given social approval for appropriate behaviour, and social approval was withheld when there was self-destructive behaviour; in the

second study, the child was praised when pressing a wooden bar; in the third study, the child was given "empathetic and reassuring communication" (Lovaas et al., 1965, p. 76) after each episode of self-harm. The results of the studies confirmed the authors' theory that self-destructive behaviour was highly socially motivated: it increased in the presence of social positive reinforcement, in both frequency and magnitude, and could be weakened when the positive social responses were removed (Lovaas et al., 1965).

Only recently has there been a return to developing functional models of self-harm, which include interpersonal influences producing and maintaining self-harm. The most promising approach comes from the work of Nock and Prinstein (2004), which suggests that nonsuicidal self-injury or self-mutilative behaviour is maintained by interpersonal and intrapersonal reinforcements that often overlap (Nock & Prinstein, 2004, 2005). Models such as the four-function model (FFM) proposed by Nock and Prinstein (2004, 2005) conceptualize self-injury as maintained by four distinct varieties of reinforcement based on the type of reinforcement (automatic or social) and its effect on affective or cognitive states or events through either decreasing the unwanted or increasing the desirable (Bentley, Nock, & Barlow, 2014).

Automatic negative reinforcement functions to reduce negative affect or "bad feelings" (Nock & Prinstein, 2004). For many adolescents self-injury functions as a means of relieving or escaping unwanted feelings (Heath, Ross, Toste, Charlebois, & Nedecheva, 2009). Automatic positive reinforcement serves to do the opposite; instead of lessening negative feelings, it instead functions to increase positive affect. In this instance, self-harm is a way to feel better, relaxed, or potentially feeling something at all (Nock & Prinstein, 2004).

Unlike automatic reinforcement, social reinforcement aims to impact the environment outside of the individual (Nock & Prinstein, 2004). Social negative reinforcement refers to avoiding an unwanted situation, which may entail adolescents using self-harm as a means of avoiding school, work, or punishment (Lloyd-Richardson et al., 2007). In contrast to escaping the undesirable, social positive reinforcement of self-injury involves eliciting a desirable response from others through gaining a reaction, eliciting help, or gaining attention (Nock & Prinstein, 2004).

Through delineating the functions of self-harm along these four dimensions, Nock and Prinstein's (2004) empirically supported functional model (Bentley et al., 2014) accounts for the antecedents and consequences of self-injury and differs from other models in that it considers the reasons and causes of self-harm, as well as specific factors and social functions of self-injury (Bentley et al., 2014). Although this model of self-injury addresses automatic reinforcement functions, it also integrates social reinforcement functions to differentiate reasons why adolescents self-injure into distinct categories (Nock & Prinstein, 2004).

Nock (2008) later expanded on the social functions of self-injury to describe a theory of "how and why many people escalate to the use of self-injurious behaviours as a means of influencing the behaviour of others" (Nock, 2008, p. 159).

Nock combined influences in psychology, evolutionary biology, and cultural anthropology and posited a social theory of self-injury that suggested self-harm is partly reinforced through interpersonal processes. These processes include social signalling through communicating distress, attracting attention from others, and fostering group membership (Nock, 2008). Nock's theory has been highly influential in conceptualizing the interpersonal functions of self-harm and may provide a useful framework to assist practitioners in understanding the various interpersonal functions of self-harm.

Although nonsuicidal self-injury serves affective, physiological, and social functions (Nock, 2008), the interpersonal functions behind nonsuicidal self-injury remain significantly understudied (Muehlenkamp, Brausch, Quigley, & Whitlock, 2013), possibly due to the use of retrospective self-reports that reflect social desirability biases, tend to minimize social aspects of self-harm, and overemphasize the emotional regulation functions (Nock, 2008). This may lead practitioners to undervalue the importance of considering the interpersonal functions of self-injury. Through only a partial understanding of the functions of self-injury, practitioners are limited in their ability to intervene effectively. Therapists must therefore fully understand the various aspects of behaviour so that interventions do not accidentally strengthen maladaptive behaviour (Tarbox et al., 2009).

Although some authors use the term *function* to refer to the motivation behind self-harm (Nickels, Walls, Laser, & Wisneski, 2012), this article will use the term *function* to refer to those specific factors directly related to the existence of a behaviour (Nock, 2008). It is largely assumed that adaptive and nonadaptive behaviour is developed and maintained through external events such as the antecedents that precede it and the consequences that follow, which have the potential to maintain, increase, or decrease behaviour (Cormier, Nurius, & Osborn, 2009). In this manner, the social functions of nonsuicidal self-injury are understood to influence behaviour in a similar manner: each social function taken separately influences the occurrence of self-injury. It is for this reason that understanding what reinforces self-harm is necessary to inform targeted interventions. Given the concerning prevalence of self-harm in adolescent populations, it is crucial that counsellors develop a more complete understanding of the social functions of nonsuicidal self-injury to intervene with this population more effectively.

SELF-INJURY AS A MEANS OF COMMUNICATION

One possible function of nonsuicidal self-injury may be that it serves as a form of interpersonal communication. Nock (2008) suggested that behaviours such as self-injury are able to relay powerful messages not otherwise deliverable through language and act as a means of signalling distress. When caregivers fail to respond to escalating distress signals, individuals resort to crying and later self-injury (Nock, 2010). Self-harm may elicit a response that reinforces the behaviour when other forms of communication fail, either through an unreceptive environment or due to other factors such as communication or social skill deficits (Nock, 2008).

Within recent literature addressing the social functions of nonsuicidal self-injury, several studies lent preliminary support to Nock's (2008) distress signalling hypothesis. For example, Laye-Gindhu and Schonert-Reichl (2005) examined the type, functions, and risk factors associated with self-harm in a sample of 424 community adolescents and found a significant percentage endorsed interpersonal functions of self-harm: 30% of the sample endorsed using nonsuicidal self-injury to communicate desperation, and 39% used self-injury to communicate anger at their parents or guardians. In fact, using self-harm to communicate one's pain may be a prevalent function of self-injury in adolescents. Heath et al. (2009) also indicated that 48% of their sample endorsed using self-injury to communicate their pain.

In addition to signalling distress (Nock, 2008), some adolescents report using self-injury to communicate other messages, such as a need for attention or seeking help. Much like signalling distress, it is probable that self-injury is maintained at least to some degree by social positive reinforcement due to eliciting the desired response: as caregivers or friends give adolescents attention or provide help when they self-harm, they inadvertently strengthen the behaviour. In fact, preliminary studies indicate self-injury may positively affect relationship quality with fathers (Hilt, Nock, Lloyd-Richardson, & Prinstein, 2008). Hilt, Nock, et al. (2008) examined 508 Grade 6–8 students from the United States in a longitudinal study and found young adolescents who self-harm perceived an increase in relationship quality with their fathers over time.

Zetterqvist et al. (2013) included 3,060 Swedish adolescents aged 15 to 17 years in a study to assess the rates, characteristics, and functions of self-harm in a community sample of adolescents. The authors found that 21.5% reported using nonsuicidal self-injury to obtain a reaction, and 14.5% of the participants endorsed using self-injury as a way of seeking help. Although nonsuicidal self-injury falls under Section III of the fifth edition of *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) as a condition requiring further study before being classified as a distinct diagnosis (In-Albon, Ruf, & Schmid, 2013), Zetterqvist et al. assessed adolescents as meeting the criteria for a nonsuicidal self-injury disorder as per criteria from the DSM-5 and found that almost half of this group used self-injury to obtain a reaction and almost half endorsed using it for seeking help. Despite the use of a large sample size, Zetterqvist et al.'s study suffered from using retrospective self-reported data, which others have cited as problematic due to the fact that adolescents lack awareness of the function of their behaviour (Nock, Prinstein, & Sterba, 2009).

Other researchers suggested similar findings. Lloyd-Richardson et al. (2007) studied the characteristics and functions of minor and severe nonsuicidal self-injury in a sample of 633 community adolescents in the southern and midwestern United States. A significant number of participants endorsed social positive (obtaining attention/support) functions, with 22.9% of the minor self-injury group and 32.2% of the moderate to severe self-injury group reporting they used self-harm to receive increased attention from family and friends (Lloyd-Richardson et al., 2007). The

strengths of the Lloyd-Richardson et al. study included the diversity of both the geographic area as well as the sample, in which more than half the participants were African American, Asian American, and Latino. Although like most studies on nonsuicidal self-injury that suffer from social desirability bias (Nock, 2008), the Lloyd-Richardson et al. study suggests the tendency for adolescents' self-harm is reinforced through increased attention from those close to them.

Self-Injury, Communication, and Unreceptive Environments

One reason that individuals may use self-injury instead of language to communicate is due to communication failure on the part of the receiver (Nock, 2008). In fact, findings from recent studies indicated that there seems to be a link between specific family environments or relationships and the emergence of nonsuicidal self-injury. For example, researchers examining parent–child relationship quality, family support, and the development of nonsuicidal self-injury indicated family environments characterized by lower perceived family support, poor relationship quality, and insecure attachment are connected to self-harm (Martin, Bureau, Cloutier, & Lafontaine, 2011; Tatnell, Kelada, Hasking, & Martin, 2014). Other researchers have indicated that low parental support and high conflict (Adrian, Zeman, Erdley, Lisa, & Sim, 2011) and high parental psychological and behavioural control combined with low support pose a significant risk to the development of nonsuicidal self-injury (Baetens et al., 2014). Bureau et al. (2010) assessed the dimensions of the parent–child relationship and found that participants engaging in self-harm reported poor parent–child relationship quality, including feelings of fear, alienation, and low parental trust combined with higher perceived parental control (Bureau et al., 2010). Other researchers implicated parental criticism in the increased frequency of nonsuicidal self-injury, which indicated that parental alienation is a salient factor in the development of nonsuicidal self-injury (Yates, Tracy, & Luthar, 2008).

Self-Injury and Skill Deficits

Although specific familial environments may make clear communication challenging, adolescents who resort to using nonsuicidal self-injury may also lack the necessary skills to navigate their environment successfully (Nock, 2008). Recent research indicated that adolescents engaging in self-injury may experience skill deficits in communication, as well as interpersonal and problem-solving skills. Hilt, Cha, and Nolen-Hoeksema (2008) assessed the functions of nonsuicidal self-injury in a community sample of 94 adolescent girls in the United States and found that the girls who were lacking interpersonal communication skills tended to be more likely to use self-harm when there were high levels of negative peer interactions. Adolescents engaging in nonsuicidal self-injury suffer from social skill deficits and experience relational challenges with parents and peers (Claes, Houben, Vandereycken, Bijttebier, & Muehlenkamp, 2010). Further, Nock and Mendes (2008) examined processes believed to maintain self-injury, such as heightened physiological arousal following stressful events and social problem-solving skill

deficits. In their sample of 92 adolescents and young adults, Nock and Mendes found that those who self-injured experienced increased physiological arousal and deficits in social problem-solving skills, especially during times of distress.

<div align="center">AVOIDANCE</div>

At times, self-injury may also function as a means of avoidance or escape. Although social negative reinforcement functions of self-injury are not explicitly discussed as a central aspect of Nock's (2008) social theory of nonsuicidal self-injury, they are one type of reinforcement in the aforementioned four-function model outlined by Nock and Prinstein (2004). Despite the bulk of literature supporting the maintenance of self-harm through social positive reinforcement (i.e., gaining a reaction, gaining attention), some researchers suggest social negative reinforcement also influences the behaviour, although to a lesser degree (Laye-Gindhu & Schonert-Reichl, 2005; Lloyd-Richardson et al., 2007). In addition to avoiding people and situations, social negative reinforcement allows individuals to escape from demands, including avoiding negative consequences or punishment, which has been found to reinforce self-harm in 12% of adolescent inpatients (Nock & Prinstein, 2004). Community studies including social negative reinforcement of self-harm have indicated rates may be much higher: Lloyd-Richardson et al. (2007) found that between 28% and 30% of participants used self-injury to avoid school, work, or other activities; between 17% and 24% used self-injury to avoid people; and between 17% and 27% used self-injury to avoid punishment or consequences. Other studies of community adolescents have indicated far fewer numbers of adolescents reported avoidance functions of nonsuicidal self-injury, at only 16% (Laye-Gindhu & Schonert-Reichl, 2005). This discrepancy and the low number of studies in which researchers investigated the avoidance function of self-injury indicates that further research is necessary to have a better understanding of how self-injury influences others (Nock, 2009).

<div align="center">PEER INFLUENCE, CLOSENESS, AND BELONGING</div>

Many adolescents experience a strong desire to identify with and be accepted by others in their peer group. Where caregivers have formerly been of central importance in adolescents' life, a significant shift in identity development and the growth of independence marks a new importance that adolescents place in their peers. The newly discovered peer group serves as a powerful impetus of reinforcement and influence, driven by the intense desire to belong (American Psychological Association, 2002). In particular, younger adolescents may be expressly concerned with peer acceptance and may be heavily influenced by their peer group (American Psychological Association, 2002). This time perfectly coincides with the average of onset for self-injury, usually between ages 12 and 14 (Nock, 2009), which has led some to suggest that self-injury may function as a means of bonding or connecting with others (Nock, 2008).

There are several concerning findings regarding the relationship between self-injury and adolescents' peer group. Research has frequently indicated that many youth who self-harm also have friends who self-harm (Hasking, Andrews, & Martin, 2013; Heilbron & Prinstein, 2010; Prinstein et al., 2010). In one of the few Canadian studies examining the social functions of nonsuicidal self-injury, Heath et al. (2009) used retrospective reports from 23 university students regarding various aspects of the social factors and influences relating to nonsuicidal self-injury. The authors found significant evidence confirming the tendency of those who self-harmed to be influenced by their peers, finding 74% of participants who self-harmed also reported that they had at least one friend who self-harmed, and 17.4% had engaged in self-injury in front of friends. Small sample size and self-injury discussed in relation to stress and coping limited the generalizability of these findings.

Not only do adolescents who self-harm seem to have friends who self-harm, but it also appears they get the idea at least partly from their friends. Similarly, Deliberto and Nock (2008) examined onset, cessation, and correlates of nonsuicidal self-injury behaviour in a community and outpatient sample of 94 adolescents ages 12 to 19 years old. Self-reports from this study indicated that 38.3% of the adolescents got the idea to engage in self-injury from their peers and 13.3% 0got the idea from the media.

The shared similarities of peers who engage in self-harm may be explained in terms of one or both selection and socialization processes: peers gravitate toward those who share something in common, thus selecting each other, or influence each other through association (Kandel, 1978). Like other learned behaviours, self-injury may develop as a result of watching or learning from others (Nock, 2010). According to Bandura's (1977) social learning theory, learning happens through watching important people in one's environment model how behaviour is performed and later drawing on this information as a guide in response to new situations. Consequently, through watching peers or other significant individuals model self-injury and the associated reactions elicited through self-injury, they become influenced and the behaviour is reinforced through relationships (Nock, 2009).

Some studies lend support for socialization processes, whereas other studies support both selection and socialization processes. Researchers examining both selection and socialization effects found that having a friend who engaged in nonsuicidal self-injury predicted adolescents' engagement in self-harm, and friendship groups longitudinally predicted adolescents' self-harm frequency (You, Lin, Fu, & Leung, 2013). You et al. (2013) examined the influence of peer group on NSSI on 5,787 Chinese community adolescents. The authors found that adolescents tended to join peer groups where others were already engaging in nonsuicidal self-injury, even when accounting for vulnerabilities toward self-injury, such as depressive mood and impulsivity. Limitations included lower rates of self-harm at 12.7%, the inclusion of low-intensity self-harm behaviours, and excluding from the study those who left school. Due to specific demographics and cultures of the sample, You et al. also raised questions regarding the generalizability of the findings.

Longitudinal studies from Western cultures also show support for the socialization and selection effects of self-injury; however, the relationship was moderated by gender and age (Prinstein et al., 2010). Prinstein et al. (2010) found that for Grade 6 girls, having a best friend who engaged in self-harm was a powerful future predictor of participants' engagement in self-harm, more so than for older grades. The relational closeness created between friends who self-harm may not only serve as behavioural reinforcement but may also produce an intimate bond with friends or elicit care and attention from others (You et al., 2013). Having a friend who self-injures seems to increase the risk of initiating self-injury, but peer exposure may also maintain the behaviour, particularly when there is closeness in relationship (Hasking et al., 2013).

Nonsuicidal self-injury may be further motivated and maintained through the appeal of social status: self-injury in girls was found to be positively associated with peer status, suggesting there may be "a growing belief among adolescents that self-injury represents a marker of social status or membership in a valued subculture" (Heilbron & Prinstein, 2010, p. 411). When asked about relational motivations for engaging in self-harm, Lloyd-Richardson et al. (2007) reported that between 10% and 21% of participants in their study indicated they engaged in self-injury "to be like someone you respect" and between 13% and 26% said they self-injured "to feel more a part of a group" (p. 119). These significant numbers suggest that some adolescents may engage in self-harm to conform to group norms (You et al., 2013).

SELF-HARM, POSITIVE REINFORCEMENT, AND THE INTERNET

The idea that self-injury represents a kind of social status may come from the media, which has been blamed for recent increases in the occurrence of nonsuicidal self-injury (Nock, 2010). The media relays powerful messages that may normalize or influence self-harm through providing an extensive network of models that serve to shape viewers' behaviour (Whitlock, Purington, & Gershkovich, 2009). Pervasive media influence, which continues to convey images and content about self-harm, has been accused of priming adolescents to the idea of self-harm in much the same way that it is argued to prime individuals toward aggression (Whitlock et al., 2009).

Similarly, the Internet continues to be a significant source of influence for many adolescents, which may positively reinforce their self-harming behaviour through attracting attention and peer support (Whitlock, Powers, & Eckenrode, 2006). Many individuals turn to online message boards to increase their social support through meeting like-minded individuals who they can relate to, as well as sharing their experiences with others (Whitlock et al., 2006). The relationship between increased social support and online self-harm discussion groups is complex: although talking about self-harm can trigger its reaction in others, including between students or friends (Walsh & Muehlenkamp, 2013), some researchers also indicated that online communities increase feelings of social support and

reduce the frequency of self-harm for some who frequent online message boards (Johnson, Zastawny, & Kulpa, 2010). For example, Johnson et al. (2010) found that of the 67 individuals who responded to questions relating to their self-harm on two online self-harm message boards, 46.3% indicated they accessed the online community for social support, and more than half reported a decrease in their self-harm over time. This finding is consistent with other studies, which indicated social support was protective against nonsuicidal self-injury, and limited social support increased the risk of self-injury (Wichstrøm, 2009). Additional studies supported using Internet message boards as a method for adolescents and young adults to find social support and reduce isolation for those "struggling with intense shame, isolation, and distress" (Whitlock et al., 2006, p. 415).

Despite the positive effects of social support, increased exposure to like-minded individuals may come at the cost of potentially reinforcing the behaviour. Some Internet message boards expose adolescents to graphic images and encourage sharing experiences rather than focusing on recovery (Lewis, Heath, Sornberger, & Arbuthnott, 2012). Other message boards act as a substitute for developing necessary skills and relationships outside of self-injury (Whitlock, Lader, & Conterio, 2007).

IMPLICATIONS FOR CLINICAL PRACTICE

Understanding the interpersonal functions of nonsuicidal self-injury has several implications for clinical work with community adolescents. Although the functions of communication, avoiding situations, and connecting with peers have been discussed as discrete entities above, it is important to note that various interpersonal functions of self-injury can occur at the same time (Nock, 2008). It is also important to note that the functions of self-injury may change over time (Darosh & Lloyd-Richardson, 2013), and interpersonal factors may be less influential in the maintenance, rather than the onset, of nonsuicidal self-injury (Tatnell et al., 2014). For this reason, practitioners must constantly revisit and refine their assessments of the social functions maintaining self-injury and continue to ask what the behaviour does for each individual client, as even social functions may vary considerably between clients.

Address Skill Deficits

Practitioners must also consider the specific social functions of self-injury to help guide interventions such as increasing substitute behaviours through skill development (Darosh & Lloyd-Richardson, 2013). Given that self-harm serves multiple functions (Klonsky, 2007; Nock et al., 2009) and many adolescents engaging in nonsuicidal self-injury experience specific skill deficits (Claes et al., 2010; Hilt, Cha, & Nolen-Hoeksema, 2008; Nock & Mendes, 2008), therapeutic interventions should target multiple deficits related to interpersonal functions. To this end, problem-solving cognitive-behaviour therapy (CBT) and dialectical behaviour therapy (DBT) interventions may be effective and have been argued to

show promise in treating nonsuicidal self-injury in adult populations (Muehlen-kamp, 2006). Although there remains a lack of empirically supported adolescent self-injury interventions (Shapiro, Heath, & Roberts, 2013), DBT may be effective in treating self-injury, as it is one of the only empirically studied behavioural interventions for nonsuicidal self-injury, and it focuses heavily on skills acquisition to target self-injurious behaviour as a priority of treatment (Lynch & Cozza, 2009). DBT evolved from the work by Linehan (1993) as a treatment for borderline personality disorder, which is commonly associated with self-harming behaviour. DBT's framework combines concepts from behaviour therapy and mindfulness to enhance thinking that balances acceptance and change increasing dialectical over rigid thinking (Dimeff & Linehan, 2001). DBT in particular focuses on reducing unhelpful behaviours such as self-injury early in therapy and addressing concerns that are associated with the behaviour, such as invalidating environments (Muehlenkamp, 2006). Among other skills, clients learn problem-solving, coping, emotion regulation, distress tolerance, and interpersonal skills, which directly target self-harm (Dimeff & Linehan, 2001). A general guideline for practitioners treating nonsuicidal self-injury is to ultimately work toward "increasing effective expression of one's emotions, promoting empathy, and enhancing effective communication skills" (Turner, Chapman, & Layden, 2012, p. 15).

Include Family Members

Therapists may consider using a number of modalities to treat adolescent nonsuicidal self-injury, such as individual therapy, family therapy, and group skill-building sessions. Despite their choice of modality, therapists should consider including family members and caregivers as part of treatment. This allows practitioners to target adolescents and their immediate environment effectively, which is essential because adolescents who started engaging in self-injury for social reasons reported stopping for social reasons, such as attracting unwanted attention, seeing self-injury as an unhealthy behaviour, or upsetting family and friends (Deliberto & Nock, 2008). In particular, family members would benefit from discussions identifying how individual and family patterns may be tied to the adolescent's self-harm, particularly if reactions of specific family members serve to maintain the behaviour either through increasing positive attention after episodes of self-injury or the removal of punishment or consequences. Models of family therapy based on short-term focused behavioural interventions such as functional family therapy (FFT; Alexander & Parsons, 1973) address such a task. Through including both the adolescent and the caregivers, the FFT therapist is able to identify problematic relational patterns and develop behavioural alternatives to using self-injury (Alexander & Parsons, 1973). Parents with new awareness of their family pattern and interactions may also be taught how to assess the adolescent's needs and provide emotional validation before instances of self-injury so that they may provide attention before instances of self-harm, thus altering the social positive reinforcement tied to self-injury. Therapy sessions can also reduce the social negative reinforcement of self-injury though modelling appropriate par-

enting strategies regarding following through on consequences and implementing punishment in a relational manner utilizing parent skills training. Additionally, although adolescents are often able to offer reasons for their self-injury, clinicians are also encouraged to include members of their client's social environment, who may provide a clearer picture of how interpersonal influences and events influence each adolescent's self-injury.

The evidence presented earlier regarding unsupportive parental relationships and self-injury indicates that one significant aspect of treating self-injury involves improving the quality of the parent–child relationship (Bureau et al., 2010). Therapists may encourage parents to spend time with their teen, practice active listening, set healthy boundaries, and take an active interest in their lives. Finding ways to increase family support is particularly important due to the finding that family support has been strongly linked to self-injury cessation (Tatnell et al., 2014). Further, including the primary caregivers allows the therapist to reduce feelings of blame that they may experience (Miller, Rathus, & Linehan, 2006). If an adolescent's self-harm acts as a message of distress or seeking help and is reinforced through the caregiver's response of providing attention, then interventions may aim at increasing the communication skills between the adolescent and caregiver. Again the FFT model is an appropriate fit for addressing family skill deficits and allows the family to learn direct ways of communicating feelings and needs through psycho-education, modelling, and role play. This allows the adolescent to communicate his or her need in a clear manner prior to acts of self-injury, as well as supports the caregiver in hearing the message before the adolescent resorts to self-harm, thus avoiding the potential reinforcement of self-injury. Practitioners are cautiously reminded that communication skills are intended for the adolescent to communicate the feelings and needs that underlie self-injury and to carefully evaluate family communication about episodes of self-injury, as it is possible that discussing self-injury may reinforce the behaviour through acting as a means of increased attention.

Another intervention may be to increase the relational closeness of the caregiver and adolescent so that the adolescent's attention needs are met prior to the adolescent engaging in self-harm, therefore eliminating the need for self-harm. Targeting family members as part of adolescent self-harm interventions may further reduce other environmental risks, as families of youth engaging in nonsuicidal self-injury have been found to have higher rates of risk behaviours, including suicidality, violence, and substance abuse (Deliberto & Knock, 2008). Where it is not possible to involve family members, youth should be connected with positive mentors outside their peer group and family, as youth who know a safe adult may be less lonely and therefore less likely to self-harm (Nickels et al., 2012).

Investigate the Role of the Internet

Although the Internet provides interaction with peers and can potentially serve as a source of support, practitioners must cautiously investigate the role of the Internet in influencing self-injury in each adolescent's life (Whitlock et al.,

2007). Many therapists neglect to ascertain the reinforcing value of online communities and "typically take medical, family, and relationship histories; however, they frequently overlook assessment of Internet use and impact" (Whitlock et al., 2007, p. 1139). Practitioners must consider that exposure to online images and the discussion of self-injury have both risks and benefits: the benefits include providing access to communities potentially comprising supportive and recovery-focused messages. Online communities may also act as an outlet for emotional expression and social interaction, which fosters recovery (Johnson et al., 2010). Hopeful messages may have more impact if they come from peers (Lewis et al., 2012). For many adolescents, seeing scars or marks and communicating about self-harm is implicated in triggering the behaviour (Walsh & Muehlenkamp, 2013). Ultimately, practitioners should thoroughly investigate clients' Internet use and its impact and relationship to recovery (Whitlock et al., 2007).

Professional Response and Reducing Contagion

Professionals must remember their response to each client's disclosure of self-injury matters greatly, especially because most adolescents do not find their conversations with health professionals to be helpful, and parents and peers are only slightly more helpful (Muehlenkamp, Brausch, Quigley, & Whitlock, 2013). Parents and peers often do not know how to cope with disclosures, and often react in unhelpful ways, increasing adolescents' feelings of isolation (Adler & Adler, 2005). Therapists must therefore work to cultivate a balance between forming an open supportive relationship and avoiding accidentally reinforcing self-harm through excessive attention.

Clinicians must also be aware of clients' vulnerabilities (i.e., age and gender), which may make these clients more susceptible to peer effects. Depending on the scope of their role and professional setting, practitioners can take on various roles in addressing the social transmission of nonsuicidal self-injury. Professionals working in school or community settings may implement specific protocols designed to limit the spread of self-injury. Walsh and Muehlenkamp (2013) outlined a number of methods for addressing the concerning spread of self-injury in schools through directly addressing how staff and mental health professionals can respond to students engaging in self-injury, in order to prevent social contagion. The authors suggest a number of steps that can be taken, including educating school personnel about what constitutes self-harm, training mental health professionals to differentiate suicide from nonsuicidal self-injury, and assessing for risk of suicide in cases of self-harm. Workers are also asked to assess the severity of self-injury and respond with calmness to avoid reinforcing the behaviour (Walsh & Muehlenkamp, 2013). Walsh and Muehlenkamp identify ways to reduce the contagion of nonsuicidal self-injury, such as reducing communication about self-injury between students through encouraging students to tell staff about suspected self-harm, suggesting students cover their wounds or scars, and implementing modalities of therapy that reduce the likeliness of social contagion (Walsh & Muehlenkamp, 2013). Individual treatment and group skills training executed with strict limits against

sharing details or experiences offer ways to address self-injury while limiting the possibility of social contagion (Walsh & Muehlenkamp, 2013).

Another intervention aiming to reduce the use of self-injury as a means of fostering relational closeness or belonging is to address this function through the therapeutic relationship, which "may provide a significant corrective experience for the client, and may be an effective intervention on its own" (Muehlenkamp, 2006, p. 181). The nonsuicidal self-injury treatment literature emphasizes forming a strong, collaborative relationship with the client, as well as the importance of being able to join with the client without fear (Muehlenkamp, 2006). Therapists must model sensitive and empathetic relational skills to support adolescents' growth and adaptation of new relational skills. If they are successful, the thera-peutic relationship can be a place for youth to learn about relationships and their challenges while staying connected, even when they want to disconnect (Trepal, 2010). However, therapists must be prepared to be patient and persistent. Those engaging in self-injury may lack a number of supportive friends and face chal-lenges forming new relationships as well as maintaining existing relationships (Muehlenkamp et al., 2013). Although individuals may have used self-injury to create closeness in some relationships, practitioners must remember they have also experienced various responses to their self-harm, ranging from support to shock and isolation (Adler & Adler, 2005), and may also have previously experienced loss and rejection (Muehlenkamp, 2006). Clients may try to disconnect or resort to other defenses to as a means of distancing themselves in the therapeutic relation-ship (Trepal, 2010). Particularly, clients who have grown up in an unsupportive environment may find the empathy and intense vulnerability overwhelming, so therapists must be flexible in their approach through understanding that the client may move from highly connected to disengaged (Trepal, 2010).

Considering Diversity

Despite the fact that rates of nonsuicidal self-injury are comparable in interna-tional samples (Muehlenkamp, Claes, Havertape, & Plener, 2012), practitioners must maintain a culturally sensitive approach when assessing social functions of self-injury. Some aspects of the social functions of self-injury, such as peer influ-ence, appear consistent in both Chinese adolescent community samples (You et al., 2013) and Caucasian community samples (Prinstein et al., 2010). Therapists are urged to consider contextual factors such as age, gender identity, cultural con-nectedness, and family history when investigating the potential social functions of nonsuicidal self-injury in clients. Most important, when treating nonsuicidal self-injury, therapists must regard each client and the functions of his or her be-haviour as unique.

AREAS OF FUTURE RESEARCH

The cultural diversity of studies included in the above discussion attests to the international interest in furthering practitioners' understanding of the functions of

nonsuicidal self-injury to prevent self-harm and to treat populations of adolescents suffering from self-injury in communities around the world. Future research in self-injury should extend to adolescent populations varying in culture, ethnicity, economic status, and sexuality.

Future directions would benefit by using other means of investigation, such as real-time monitoring, which are better able to assess function than using long-term retrospective self-reports (Nock et al., 2009). Bentley et al. (2014) indicated the use of objective assessment tools to address social desirability bias, as well as the use of objective measures to evaluate interpersonal skills contributing to the social reinforcement functions of self-harm. This would allow researchers and clinicians to develop a more accurate understanding of the rates and functions of self-injury in various populations. Other studies have indicated the need to understand the functional evolution of self-injury over time, implying the need for longitudinal studies (Lloyd-Richardson et al., 2007); as well as how peers influence self-harm (Heath et al., 2009). Understanding the role of interpersonal influences such as peers and family in the development of self-injury may enhance practitioners' knowledge of how to use these influences in treatment.

<div align="center">CONCLUSION</div>

In sum, recent cross-cultural research has confirmed various aspects of Nock's (2008) social theory of nonsuicidal self-injury. Despite the variance in research supporting interpersonal functions of self-harm, a great deal has yet to be learned regarding how nonclinical samples of adolescents learn to self-harm and why they continue to repeat the behaviour (Laye-Gindhu & Schonert-Reichl, 2005). Currently, a significant amount of research pertains to the tendency for nonsuicidal self-injury to function as a means of communicating the need for greater attention or support, while less research has explicitly addressed the social negative reinforcement function of avoiding unwanted demands or consequences. At this time, it is unknown whether this represents a deficit in the research base or reflects the greater tendency for self-injury to be an act of communicating an individual's increasing distress (Nock, 2008). It is hoped that the ideas presented in this article will influence clinicians to attend more closely to the multiple and complex functions that influence and sustain nonsuicidal self-injury so they are able to excel at effectively crafting interventions that eliminate self-injury, thus positively impacting the lives of adolescents and their families.

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