Non-suicidal self-injury: clinical presentation, assessment and management

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Abstract
Non-suicidal self-injury is a common behaviour in adolescents and young adults, and may be associated with mental health disorders, risk of suicidal behaviour (ideation and attempts), and a need for clinical services. Nurses, in particular those working in emergency departments and mental health settings, have a crucial role in the assessment, treatment and care of individuals who have self-injured. It is essential for nurses to assess an individual's risk of more serious harm or accidental death, regardless of intent. It is also important to understand the variations in non-suicidal self-injurious behaviour in terms of its presentation, features and functions, to provide appropriate person-centred care. Nurses should assist individuals in identifying the triggers or cues for their behaviour, exploring treatment options, and monitoring their behaviour and risk in the long term. This article describes the profile of people who self-injure, and the issues related to assessment and management of such patients presenting in emergency departments. A description of who self-injures and why, and how people self-injure; developmental aspects of these behaviours, including short and long-term outcomes; and the available treatments is presented.

Keywords
emergency care, harmful behaviour, mental health, non-suicidal self-injury, self-harm, self-injury, suicide

NON-SUICIDAL SELF-INJURY REFERS to the direct, deliberate damage of one’s own body tissue in the absence of suicidal intent (Nock 2010). It is distinguished from behaviour where immediate tissue damage is not present, such as excessive alcohol consumption or disordered eating, and from behaviour where harmful consequences are unintended or accidental, such as cancer as a result of smoking. Non-suicidal self-injury is also differentiated from suicidal behaviours, where the prevalence, correlates, course, and response to treatment differ (Nock 2010). A classification system for self-injurious thoughts and behaviour is presented in Figure 1.

It is important to note that non-suicidal self-injury is considered a harmful behaviour that can serve intrapersonal functions, such as the regulation of aversive thoughts and feelings, and interpersonal functions, such as help-seeking (Nock 2009b), rather than a symptom of a mental health disorder. Behaviour within social and cultural norms, such as tattooing or body piercing, is not regarded as non-suicidal self-injury.

The physical harm that may be caused by non-suicidal self-injury varies significantly. Common methods of non-suicidal self-injury include cutting (Langbehn and Pfohl 1993, Nock et al 2006), burning, scratching (Whitlock et al 2006), hitting oneself, biting, and hindering wound healing (Klonsky and Olino 2008). In a large study of a non-treatment sample, severe scratching of the skin was the most commonly reported form of non-suicidal...
self-injury (Whitlock et al 2006). Most individuals who self-injure use multiple methods (Gratz 2001, Whitlock et al 2006), and the frequency and severity of the behaviour varies across populations. Studies using school-based or community samples of adolescents and young adults report that most individuals only self-injure a few times – fewer than 10 lifetime episodes (Whitlock et al 2008). In contrast, studies using inpatient psychiatric samples report that most of those who have self-injured have done so significantly more frequently – 50 episodes in the past year (Nock and Prinstein 2004). The severity of physical injury also varies across samples, as well as by the method of non-suicidal self-injury used; however, it is estimated that up to 55% of people who self-injure report moderate to severe tissue damage (Whitlock et al 2008).

Nurses, especially those working in emergency departments, are usually the first point of contact for patients presenting with non-suicidal self-injury. To be able to provide effective, timely and appropriate care to such patients, nurses should have the knowledge to understand non-suicidal self-injury, its causes, manifestations, and appropriate assessment and treatment. However, evidence suggests that nurses often lack the necessary preparation to provide care for patients presenting with self-injury (Happell et al 2003, Crawford et al 2007). This lack of preparation could contribute to staff having negative attitudes towards this group of patients, which in turn could affect the quality of care provided (McCann et al 2007, Patterson et al 2007, Egan et al 2012). Patients who have engaged in non-suicidal self-injury might be perceived as troublesome (Watkins 1997) or attention-seeking (Dower et al 2000), and nurses might feel that providing care to them is time-consuming and unrewarding (Sanders 2000). These attitudes are not always concealed from these individuals, who often find nurses and other staff unsupportive or unsympathetic (Harris 2000, McHale and Felton 2010).

Appropriate training and support should be provided so that nurses are able to understand the complexities of non-suicidal self-injury. Specifically, nurses need to be able to assess the risk accurately, understand the functions served by non-suicidal self-injury, recognise its manifestations, and provide appropriate person-centred care. This article aims to provide a review of the research on who self-injures and why, and how people self-injure. Developmental aspects of non-suicidal self-injury behaviours, including short and long-term outcomes, assessment of non-suicidal self-injury and treatment options are discussed.

**People who self-injure**

Approximately 7% of pre-adolescents (Hilt et al 2008), 14-46% of adolescents (Ross and Heath 2002, Lloyd-Richardson et al 2007, Brunner et al 2013), 12-20% of young adults (Whitlock et al 2006, Gollust et al 2008) and 1-6% of adults (Klonsky and Olino 2008, Klonsky 2011) reported having self-injured at least once. It is not known whether the lower occurrence of non-suicidal self-injury in adults indicates an increase in non-suicidal self-injury among adolescents, or if reporting biases among adults lead them to deny engagement in this behaviour.

A significant theme identified from the literature is that there is no one...
‘self-injurer’. Some research has found that adolescent and adult women are 1.5-3 times more likely to self-injure than adolescent and adult men (Whitlock et al 2006); however, other studies have suggested that the gender-gap might be smaller. For example, Heath et al (2008) found no significant gender difference in the prevalence of this behaviour in a sample of college students. In terms of methods of self-injury, women are more likely to use cutting; men are more likely to use self-hitting or burning (Klonsky and Muehlenkamp 2007, Andover et al 2010).

Findings in relation to ethnicity are inconclusive. While some studies suggest that Caucasians are more likely to self-injure (Muehlenkamp and Gutierrez 2007), other research indicates similar high rates in minority groups (Laye-Gindhu and Schonert-Reichl 2005, Whitlock and Knox 2007). There is some evidence to suggest that rates of non-suicidal self-injury might be higher among those who report same-sex attraction (Whitlock et al 2006). In particular, those reporting bisexual or questioning sexual orientations might be more likely to engage in non-suicidal self-injury (Whitlock et al 2006, 2011).

Aetiology

Most individuals who self-injure begin doing so in early to mid-adolescence, with the average age of onset between 12 and 16 years (Nock and Prinstein 2004, Whitlock et al 2006, Muehlenkamp and Gutierrez 2007). A US study examining non-suicidal self-injury in university students found that approximately 5% of students indicated they commenced this behaviour before the age of 10 years (Whitlock et al 2006). Non-suicidal self-injury is a complex behaviour influenced by a range of factors that can contribute to difficulty in regulating one’s emotional and/or cognitive state or influencing one’s social environment, for example negative childhood experiences, genetic predispositions to high emotional reactivity and difficulties in interpersonal communication. It is also influenced by factors specific to the individual, such as social modelling, implicit identification and a desire for self-punishment, which influence the decision to engage in non-suicidal self-injury (Nock 2009b, 2010).

Healthcare professionals might assume that people who self-injure have experienced child abuse, in particular sexual abuse, and that this leads to non-suicidal self-injury. However, a review of 43 studies found the relationship between childhood sexual abuse and non-suicidal self-injury to be relatively small (mean weighted aggregate phi=0.23) (Klonsky and Moyer 2008). The authors concluded that, although childhood sexual abuse may have a role in non-suicidal self-injury for some individuals, many people who have been abused do not go on to self-injure, and many people who self-injure have not experienced childhood sexual abuse.

Although mental health disorders are not infrequent among individuals who self-injure, the presence of non-suicidal self-injury does not imply the presence of any particular diagnosis. Individuals who self-injure may experience a range of mental health disorders (Klonsky and Olino 2008) including anxiety, depression and borderline personality disorder. Furthermore, in contrast to conventional wisdom, anxiety may be more strongly related to self-injury than depression (Klonsky et al 2003). It has been suggested that this is because anxiety is similar to the emotional arousal or pressure that often prompts non-suicidal self-injury (Nock 2010).

Non-suicidal self-injury and suicide

The relationship between non-suicidal self-injury and suicidal behaviours is complex, and not understood fully (Dhingra et al 2016). Although non-suicidal self-injury and suicidal behaviour are both forms of self-injurious behaviour, they have been differentiated by intention, frequency and lethality (Guertin et al 2001, Muehlenkamp and Gutierrez 2007). However, the differences between non-suicidal self-injury and suicidal behaviours do not preclude them from co-occurring; they are often found to do so (Dhingra et al 2015, Victor et al 2015, Dhingra et al 2016).
Research indicates that 40% of those who engage in non-suicidal self-injury have thoughts about suicide while inflicting the injury (Klonsky and Olino 2008), and it is estimated that 30-70% of people who injure themselves have attempted suicide at least once during their lifetime (Nock et al 2006, Muehlenkamp and Gutierrez 2007).

Non-suicidal self-injury might also be an important risk factor for suicidal behaviour. Klonsky et al (2013) found that non-suicidal self-injury was more strongly associated with a history of suicide attempts than other established risk factors for suicide, such as depression, anxiety, impulsivity and borderline personality disorder. Moreover, there is longitudinal evidence that non-suicidal self-injury is a better predictor of future suicide ideation and attempts compared with other risk factors (Asarnow et al 2011, Bryan and Bryan 2014). Consequently, it is essential to assess routinely the intent or motivation underlying an individual’s non-suicidal self-injury as well as any underlying psychopathology.

The reasons why non-suicidal self-injury and suicidal behaviour may be associated have not been explored fully. However, it is possible that there is something specific about non-suicidal self-injury that may increase suicide risk. Joiner (2006) theorised that some suicidal individuals may acquire the capacity to engage in suicide by engaging in increasingly severe non-suicidal self-injury over time.

**Reasons why people self-injure**

Non-suicidal self-injury most commonly serves temporarily to alleviate overwhelming negative emotional states. Intense negative affect, such as anger, anxiety and frustration, precedes non-suicidal self-injury, and engaging in this behaviour can lead to reduced feelings of distress, as well as increased feelings of calm and relief (Klonsky 2007). Approximately half of individuals report that they self-injure as a form of self-directed anger or self-punishment, suggesting that self-criticism has a causal role (Klonsky 2007). Non-suicidal self-injury can also serve to influence others, for example by increasing social support or removing undesired social demands and responsibilities. It can also be used as a physical sign of emotional distress in a minority of individuals who self-injure, as well as a means of reducing or stopping feelings of emotional numbness or dissociation (Klonsky 2007).

Identifying the functions of non-suicidal self-injury for an individual can inform their treatment. For example, it might be appropriate to focus on developing emotion regulation skills when non-suicidal self-injury is used primarily to cope with negative or overwhelming emotions. When interpersonal functions are more evident, it might be more appropriate for treatment to focus on developing interpersonal-effectiveness skills and alternative ways of responding to the interpersonal situations prompting this behaviour. The functions of non-suicidal self-injury can also inform treatment in other ways. Nock and Prinstein (2004) found that those using non-suicidal self-injury for emotion regulation, such as ‘to stop bad feelings’ or ‘to feel relaxed’, were more likely to have attempted suicide recently and to experience feelings of hopelessness.

Once someone has engaged in non-suicidal self-injury as a coping strategy or means of emotional self-regulation, there are several reasons why they are likely to continue. A primary reason that people continue is that, for them, self-injury is effective; it regulates or improves emotional and/or social experiences. For example, non-suicidal self-injury can be reinforced psychologically by the experience of relief from distress. Non-suicidal self-injury might also be socially reinforced through the responses that are intentionally or unintentionally elicited by the behaviour. For example, it might be that following physical injury, a feeling of euphoria results from the release of endogenous opiates (endorphins) (Nock 2010).

**Clinical presentation and assessment**

Although common among adolescents and young adults, non-suicidal self-injury is often not identified in healthcare settings.
such as emergency departments. However, nurses are well positioned to assess for non-suicidal self-injury, because tissue damage or scars may be visible. The arms, hands and forearms opposite the dominant hand are common sites of injury, as well as the legs and stomach; however, there may be evidence of self-injury anywhere on the body. Other signs of non-suicidal self-injury include: inappropriate dress for the weather, for example wearing long sleeves in hot temperatures; numerous ‘accidents’; wearing jewellery or wrist bands or coverings; reluctance to participate in activities that require less body coverage, such as swimming; and the frequent use of plasters and bandages. It is important that questions about injuries are asked in a non-threatening, emotionally neutral and non-judgemental manner.

It is important for nurses to develop a trusting therapeutic relationship with the patient, conveying a sense of respect and a non-judgemental attitude, when caring for someone with a history of non-suicidal self-injury (Walsh 2012). According to Walsh, if an effective rapport is not established between the patient and the nurse, the individual might offer socially acceptable reasons for engaging in non-suicidal self-injury, or minimise the frequency or severity of their behaviour. A judgemental and negative attitude towards the behaviour, for example disapproval or disappointment, can discourage the patient from being open and honest during the assessment, to prevent further expressions or indications of disapproval. Excessive expressions of support are also discouraged, because they might be perceived as excusing or even encouraging non-suicidal self-injury (secondary reinforcement). If non-suicidal self-injury is identified, the nurse should explore and address:

- **Infection risk** – wounds should be assessed for signs of infection. In cases where wounds are not yet healed, patient education should be provided by discussing how to care for wounds.
- **Severity of non-suicidal self-injury** – most injuries caused by non-suicidal self-injury are superficial and do not require medical treatment (Nock et al 2009).

The lifetime frequency of non-suicidal self-injury behaviours in combination with the number of methods used, and the likelihood that the methods used will cause severe tissue damage, is directly associated with the risk of an adverse outcome, such as suicidal behaviours (Kerr et al 2010). High severity cases, namely those with greater than 50 lifetime episodes or more than one self-injury episode per day; injury in the past 6 months; use of methods likely to inflict high levels of tissue damage and/or use of three or more methods; and of those who are younger than 12 years at onset (Whitlock et al 2008) require a thorough assessment. This should focus on identifying existing support from the family and health and social care services; referral to specialist services might be necessary if this support is inadequate. This is particularly important in instances where non-suicidal self-injury is used to manage or prevent suicidal thoughts and behaviours to reduce risk.

- **Support system** – has the individual disclosed their non-suicidal self-injury to anyone? If so, how supportive is that person? Is the individual currently undergoing psychological therapy? If not, referral to specialist services might be required, particularly for high severity cases.
- **Comorbid mental health difficulties or maladaptive behaviour** – this might include disordered eating, substance use, depression, anxiety, post-traumatic stress disorder, symptoms of borderline personality disorder and substance misuse. Presence of one or more of these is common among individuals who engage in self-injury and may increase the risk of suicide (Whitlock et al 2006, Muehlenkamp et al 2011).
- **Risk of suicide** – although non-suicidal self-injury is not a suicidal act, it can indicate the presence of suicidal thoughts and should prompt a risk assessment. Features of non-suicidal self-injury that might indicate increased suicide risk include: a long-standing history of non-suicidal self-injury;
use of multiple non-suicidal self-injury methods; a lack of pain experienced at the time of non-suicidal self-injury; and use of non-suicidal self-injury for intrapersonal functions such as emotion regulation (Nock et al 2006, Klonsky and Glenn 2009). It is also important to understand the individual’s social context during non-suicidal self-injury, to assess their risk of suicide. Individuals who self-injure in isolation are more likely to engage in suicidal behaviour (thoughts, plans, and attempts) than those who self-injure occasionally or frequently in the presence of others (Glenn and Klonsky 2009).

Misconceptions about non-suicidal self-injury
Non-suicidal self-injury is a suicide attempt or failed suicide attempt
Research has indicated that there are significant differences between individuals who attempt suicide and those engaging in non-suicidal self-injury. Many studies have also found that non-suicidal self-injury is often used as a means of preventing suicide (Klonsky 2007).

Non-suicidal self-injury functions primarily to elicit attention or reactions from others
For some, non-suicidal self-injury is used to elicit a response from others (Klonsky 2007). In such cases, it is important to honour the intent; the individual is communicating what they need. Nock (2009b) suggested that this behaviour might represent a high intensity social signal, which is used when other communication strategies, such as speaking, yelling and crying, have failed. However, most people who self-injure conceal their behaviour and associated injuries; for them, non-suicidal self-injury is a way to alleviate intense negative emotions quickly (Klonsky 2007).

Non-suicidal self-injury is a symptom of mental illness, including borderline personality disorder
Non-suicidal self-injury has been categorised exclusively as a criterion of borderline personality disorder since the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) (American Psychiatric Association 1980). However, studies have shown that non-suicidal self-injury occurs in individuals who do not meet the criteria for a psychiatric diagnosis (Nock et al 2006). For this reason, the fifth edition of the DSM (DSM-V) (American Psychiatric Association 2013) classified non-suicidal self-injury as a separate diagnosis for further study. Research supports this, finding that (Glenn and Klonsky 2013):

- The co-occurrence of non-suicidal self-injury disorder and borderline personality disorder is moderate, and similar to the co-occurrence of borderline personality disorder and mood and anxiety disorders.
- Non-suicidal self-injury disorder is associated with suicide ideation and attempts, emotional dysregulation, and loneliness greater than a diagnosis of borderline personality disorder.

People who self-injure enjoy the pain or are unable to feel it
Non-suicidal self-injury usually hurts those who engage in the behaviour. An individual might report that feeling physical pain is the reason for engaging in the behaviour; they might harm themselves to reconnect with their body or ‘just to feel something’ (an anti-dissociation function) (Klonsky 2007).

Treatment and management
Guidelines produced by the National Collaborating Centre for Mental Health (2004) recommend that all individuals under 16 years presenting with self-injurious behaviour, irrespective of their intent, should be admitted to a child and adolescent mental health ward overnight and assessed by a child and adolescent mental health specialist. However, there are no rigorous randomised controlled trials showing that inpatient admissions reduce the risk of subsequent self-injury. Moreover, some individuals might increase their self-harm behaviour once in inpatient care (Huey et al 2004).
If inpatient treatment is necessary, planning for discharge should start at the point of admission and contingencies should be examined to reinforce alternatives to non-suicidal self-injury, such as seeking social support. Before discharge to the community, links to outpatient treatment should be made.

Treatment options for non-suicidal self-injury are not empirically supported, efficacious or well established (Nock 2010). However, the most promising psychological approaches include dialectical behaviour therapy, emotion-regulation group therapy, manual-assisted cognitive therapy and dynamic deconstructive psychotherapy (Turner et al 2014). The most promising medications include atypical antipsychotics (aripiprazole), naltrexone hydrochloride, and selective serotonin re-uptake inhibitors, with or without cognitive behavioural therapy (Turner et al 2014). Turner et al (2014) cautioned that current knowledge about treatments for non-suicidal self-injury is insufficient and further research is required to investigate the efficacy of treatments for non-suicidal self-injury.

An important aspect of the treatment and management of non-suicidal self-injury is to assist individuals in identifying the triggers or cues for their behaviour. These triggers might include: peer conflicts, intimacy problems, negative emotions and dissociation. Recognition of these triggers can then be used to develop a safety plan, which involves identifying the steps an individual may take in response to these triggers or cues instead of self-injuring. Alternative actions may be to seek social support, avoid objects that could be used to self-injure and use self-soothing techniques (Alexian Brothers Behavioral Health Hospital 2014, Walsh 2012).

Conclusion
Non-suicidal self-injury is common among adolescents and young adults, and nurses are uniquely positioned to identify this behaviour, assess its severity, and assist individuals in caring for their wounds and referring them for psychological and/or medical treatment. An effective way to approach non-suicidal self-injury might be to try to understand the behaviour from the individual’s perspective, by investigating the functions it serves for the individual. Such careful assessment of the functions served by the behaviour and the factors underlying engagement in non-suicidal self-injury can provide insight and guide treatment. Central to effective treatment of non-suicidal self-injury is the ability to form an empathic, non-judgemental therapeutic relationship with the individual.

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