Non-suicidal self-injury in adolescence

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Abstract

This review will teach readers about non-suicidal self-injury (NSSI), which is a serious and common problem, particularly among adolescents. We shall begin by explaining what we mean by non-suicidal self-injury, and then move on to discuss the epidemiology, causes and outcomes. We shall finish by discussing assessment and treatment, as well as some important research issues. NSSI is meaningfully distinct from suicidal self-injury despite being closely related, and it presents in a variety of forms. Many factors have been implicated in the ontogenesis of NSSI, in particular poor family relationships, early abuse, affective instability and reactivity, impulsivity, psychological illness and distress. While the majority of cases of adolescent NSSI resolve on their own by adulthood, NSSI is associated with a number of adverse physical, psychological, and social outcomes. It is also a common cause of presentation to hospital that will be frequently encountered by paediatricians and emergency department doctors. There is only preliminary, unreplicated, evidence for specific treatments. The most practical approach may be to treat any underlying psychiatric illness, address environmental stressors, and provide a supportive and positive therapeutic environment. Anyone reporting NSSI should be assessed for risk of repetition and suicide, and any physical injuries should be treated.

Keywords adolescent; antecedent; non-suicidal; prognosis; self-harm; self-injury; suicide; treatment

Self-harm

Suicidal vs non-suicidal self-harm

Non-suicidal self-injury (NSSI) is any intentionally harmful self-inflicted behaviour where the individual does not have suicidal intent. There has been some debate over whether NSSI is meaningfully distinct from attempted suicide, however it is our opinion that there is an overwhelming body of evidence suggesting that it is. Some researchers point to the greatly elevated risk for suicide among those who engage in NSSI as evidence that the two are not meaningfully different, however there is an elevated risk for suicide in nearly all psychiatric disorders, and while the association between suicide and other disorders may not be as strong as it is for NSSI, increased risk of suicide does not mean that the behaviour is not distinct.

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Take substance abuse and eating disorders for example. Both are related to significantly increased risk of suicide as well as accidental death, and yet few if any researchers would argue that either substance abuse or eating disorder behaviours are fundamentally the same as suicide attempts, even if they result in death. Like substance abuse and eating disorder behaviours, NSSI usually stems from different motivations and is related to different psychological features than suicide and should therefore be considered distinct despite being closely related.

In the first place, there is, by definition, a manifest and important difference in the desired result of NSSI and attempted suicide. The majority of people who engage in NSSI never make a suicide attempt and many are explicit that they had no wish or intent to die when engaging in self-harm. As such, the two behaviours arise from different motivational pathways. Whereas the aim of NSSI is often intense pain, to distract or otherwise relieve the person engaging in NSSI from overwhelming distressing effect, many suicide attempts are planned to be as painless as possible. In fact, some patients report engaging in NSSI in order to reduce unwanted thoughts of suicide. Moreover, the typical degree of planning before NSSI and suicide attempts is generally different. The majority of people who engage in NSSI do so after only a few minutes of considering it, generally after little planning or consideration of consequences, particularly if NSSI is a highly repeated and habitual behaviour.

Conversely, suicide attempts are more likely to be preceded by careful planning, particularly where suicidal intent is high. There are, moreover, a number of other ways in which people making suicide attempts differ from those engaging in NSSI only: people who engage in suicide attempts are typically more impulsive, are more likely to have a psychiatric diagnosis or a family history of psychiatric illness, and show different neurobiology from people who engage in NSSI alone. For example, low cholesterol concentrations and low levels of essential fatty acids have been repeatedly linked to NSSI, whereas evidence for their relation to suicide is mixed.

Further, NSSI and suicidality have different associations with other psychiatric disorders: adolescents who only attempt suicide are more likely to have a concurrent clinical disorder of depression or post-traumatic stress disorder than those who only engage in NSSI, whereas those who only engage in NSSI are more likely to have features of borderline personality disorder.

Finally, there is a concern that the term “non-suicidal” trivialises the nature of the self-harm, and makes it seem unimportant compared to attempted suicide. This should by no means be the case, as NSSI can have serious and lasting consequences. The problem is with the trivialising, not with the label.

Types of NSSI

NSSI presents in a variety of forms and through various motivational, biological, and environmental pathways. Adolescents report engaging not only in more obvious forms of NSSI such as cutting, biting, scratching, and burning, but also report methods such as recklessness, eating disordered behaviours, and non-suicidal pill-abuse. Cutting is the most common form of NSSI, followed by hitting and poisoning (including pill abuse). Most studies show that NSSI is more common in females, although some more recent studies and meta-analyses have shown no gender difference; this change may be because more recent

studies are including more 'male-type' NSSI. Girls are more likely to engage in cutting, whereas boys may be more likely to engage in previously-overlooked forms of NSSI such as punching oneself or other objects, breaking bones, and risk taking behaviours. It is therefore imperative that a broad definition of NSSI be used in investigations of self-harm as failing to do so could lead to certain groups, such as males, being overlooked. It is also important to note that different psychological and motivational profiles have been found among people who engage in different types of NSSI. For example, overdosing is related to higher suicidality than cutting, whereas cutting is more likely to be engaged in impulsively than overdosing. As such, distinguishing between forms of NSSI may have significant prognostic and clinical implications.

Epidemiology

NSSI is both a serious problem, and a common one. Around a quarter of adolescents have engaged in NSSI at least once in their lives, and nearly a tenth have engaged in NSSI repeatedly. There has not been a significant increase in prevalence of NSSI over the past two decades, nor do there seem to be different rates across developed regions including Asia, Australia and New Zealand, Europe, the United Kingdom, Canada, and the USA. Rates of NSSI are highest among adolescents, and this is also the most common time of first incidence. In fact, 90% of cases of adolescent NSSI remit by young adulthood without intervention.

Particular relevance to adolescence

There are many possible reasons why NSSI is particularly prevalent in adolescence. Adolescence is a tumultuous phase during which people are undergoing significant social, physiological, and psychological changes. During this time, neurotransmitter levels and functionality are in flux, while the prefrontal cortex, responsible for problem solving and behavioural inhibition is still developing, and social structures are rapidly changing. It is no wonder therefore that adolescence is associated with high rates of, not only NSSI, but also a number of other psychological and behavioural problems, such as depression, anxiety, substance misuse, eating disorders, and risk taking, which are all in turn associated with NSSI.

Indeed, the risk for NSSI is closely linked to pubertal development, independent of age. This association may be mediated by the higher rates of depressive symptoms, substance use, and sexual activity that accompany pubertal maturation. After puberty however, age is inversely related to rates of NSSI.

If NSSI is exacerbated by the social and physiological changes inherent to adolescence, it is unsurprising that NSSI subsides in the relative stability of adulthood. Moreover, adulthood is associated with increased behavioural inhibition, better affective stability, and more stable emotional support systems, all of which are protective factors against NSSI. Finally, NSSI may be more socially acceptable in adolescence than in adulthood, possible because adulthood is associated with more responsibilities with which NSSI might interfere, greater emphasis on mature responses to distress, and more consequences of NSSI, such as employment difficulties resulting from visible scars or other wounds. Nevertheless, given the prevalence and malignancy of NSSI among adolescents, discovering the etiological and developmental processes of self-injurious pathways during this period is of paramount importance.

Risk factors for NSSI

Many factors have been implicated in the ontogenesis of NSSI, in particular poor family relationships, early abuse, and psychological illness and distress. We shall now discuss some risk factors in more detail.

Affective instability

Affective instability and reactivity have been linked to NSSI, with some studies even finding that emotional dysregulation and variability are predictive of NSSI regardless of the valence of those emotions. People who engage in NSSI often have problems with both regulating emotional responses and tolerating intense emotions. This combination of deficiencies means that they are more likely to experience extremes of affect, which are at the same time also more unpleasant for them than for other people. Indeed, most incidents of NSSI are preceded by negative affect and followed by relief therefrom. Getting relief from these overwhelming or intolerable emotions is frequently cited as one of the primary reasons for why people engage in NSSI. In addition, many people who engage in NSSI are alexithymic, showing difficulties in understanding, identifying, and expressing their emotions.

Impulsivity

Impulsivity and inhibitory control problems are also strongly associated with NSSI, particularly in response to strong affect. A number of impulse control related disorders are highly comorbid with NSSI, such as substance abuse, eating disorders, and other risk taking behaviours. In fact, impulsivity seems to account for much of the comorbidity between BPD and NSSI. Some researchers have even proposed that NSSI could be conceptualized as just one symptom or expression of a broader impulsivity disorder, or fundamentally as an impulse control disorder in its own right. Impulsivity may influence NSSI proximally by allowing people to act on these urges to engage in behaviours that have potentially serious and lasting consequences, or more distally by leading to increased exposure to adverse experiences. Indeed, many adolescents spend less than 5 minutes considering engaging in NSSI before doing so. However, findings have been mixed, with some researchers finding that only certain aspects of impulsivity are associated with NSSI, that only self-report and not behavioural measures of impulsivity are associated with NSSI, that impulsivity is associated with the severity but not the presence of NSSI, and that impulsivity is only associated with NSSI among females. These mixed findings may be due to the heterogeneity of the construct of impulsivity, they ways in which it is conceptualized, and how it is measured.

Trauma

Adverse experiences in childhood have been associated with a number of NSSI-related negative mental health outcomes, such as substance abuse, eating disorder behaviour, depression, and suicide attempts. Moreover, trauma in the forms of sexual and physical abuse has been robustly associated with NSSI among adolescents. Early adversity may predispose individuals to engage in NSSI through its role as a risk factor in the onset of