Relationship of non-suicidal self-injury and suicide attempt: a psychopathological perspective

M. Pompili[1], A. Goracci[2], G. Giordano[1], D. Erbuto[1], P. Girardi[1], E.D. Klonsky[3], R.J. Baldessarini[4]

[1] Department of Neurosciences, Mental Health and Sensory Organs, Suicide Prevention Center, Sant'Andrea Hospital, Sapienza University of Rome, Italy; [2] Division of Psychiatry, Department of Molecular Medicine, University of Siena School of Medicine, Siena, Italy; [3] Department of Psychology University of British Columbia, Vancouver, Canada; [4] Department of Psychiatry, Harvard Medical School, International Consortium for Mood & Psychotic Disorder Research, McLean Hospital, Boston, Massachusetts, USA

Summary

Non-suicidal self-injury (NSSI) is not uncommon in the general population, and is prevalent in association with a range of psychiatric disorders including major affective, personality and neuropsychiatric disorders. It often starts in childhood or early adolescence and involves repeated bouts of self-injurious acts, with similar risks among females and males. Such behaviours are distinguished from suicide attempts by an evident lack of lethal intent. Nevertheless, NSSI and suicidal behaviours occur frequently in the same persons, and NSSI can be a precursor of suicidal behaviour. NSSI typically seems to represent an effort to reduce overwhelming negative emotions, which can include dysphoric or depressive states. Indeed, the experience of immediate relief may contribute to the repetition of self-injurious behaviours. NSSI may also arise in response to a felt need for punishment or a desire to influence or seek help from others. NSSI behaviours occur far more frequently than suicide attempts, and usually are of low medical severity and rarely fatal. In addition to representing an important psychiatric syndrome in its own right, NSSI is a major risk factor for suicide that requires ongoing assessment of suicidal intent.

Key words

Non-suicidal self-injury • Suicide attempt

Introduction

Nonsuicidal self-injury (NSSI) can be considered as intentional damage of one's body tissue without clear suicidal intent, and usually performed to seek immediate relief of psychic distress [1]. Methods used by 70-90% of persons involve cutting, scratching, or scraping of the skin; less prevalent are banging, bruising and self-hitting in 21-44%, and burning in 15-35% [2]. Other forms of self-injury include biting, skin-picking, wound-excoriation, and uncommon bone-breaking. Most individuals with self-injuries use more than one method [1 2]. It is widely held that NSSI behaviours represent an expression of overwhelming negative emotions, and that they can be important antecedents of suicide [1 3]. The psychological function of NSSI appears to be independent of the self-harm methods employed, although the number of different methods used may predict the level of clinical distress and the potential suicidal risk [1 3].

There are many ways to categorise particular forms of NSSI. One approach is to divide NSSI into major, stereotypic and superficial or moderate types [4]. Major NSSI includes extremely severe self-injurious acts (such as amputation, castration, or eye enucleation), often with the use of an implement; such events appear to be limited to persons with an otherwise diagnosable psychotic disorder. Stereotypic NSSI is more frequent, and is often associated with a developmental disability or neuropsychiatric disorder, usually does not involve the use of an implement, and results in minor, superficial tissue damage; examples include repeated head banging, and biting of the tongue or hands. Superficial or moderate NSSI is most prevalent and includes a range of behaviours involving self-injury with different degrees of severity. Superficial or moderate NSSI can be further divided into compulsive, episodic and repetitive types [4]. Compulsive NSSI includes non-severe ritualistic acts, such as hair-pulling, and is not considered a form of NSSI. In addition, self-injurious acts associated with developmental neuropsychiatric disorders usually are considered different in aetiology and significance from NSSI. Episodic and repetitive NSSI involve similar behaviours, but vary in the frequency of acts. This type of NSSI is the focus of the present report.

NSSI and suicide attempts are dissimilar in their prevalence, evident intent and medical severity or potential lethality. By definition, NSSI is associated with nonlethal intent, and may sometimes function to avoid suicidal urges [5]. Suicide attempt involves lethal intent of varying intensity, although similar distressing affective states may

Correspondence
Maurizio Pompili, Department of Neurosciences, Mental Health and Sensory Organs, Suicide Prevention Center, Sant'Andrea Hospital, Sapienza University of Rome, 1035-1039, via di Grottarossa, 00189 Rome, Italy • Tel. +39 06 33775675 • Fax +39 06 33775342 • E-mail: maurizio.pompili@uniroma1.it

be present in both NSSI and suicidal behaviour. In contrast to suicide attempts, medical injuries are typically less severe and rarely life-threatening in NSSI. Compared to suicide attempts, NSSI is not only far more prevalent, but can be performed dozens or even hundreds of times by a single person [6]. Comparisons of NSSI and suicidal acts are considered further below.

We will provide a brief update of recent research on NSSI. Interest in the syndrome has increased markedly since modern epidemiological studies have documented its substantial prevalence in the general population and relative frequency in association with mood, personality and other psychiatric disorders. The inclusion of NSSI in DSM-5 also will be discussed.

Terminology

Historically, there has been confusion in the terminology used to refer to self-harm behaviours. The term self-mutilation was previously used for acts now considered as NSSI, although this term implied major self-injury with loss of the integrity or function of a body-part, such as a limb. The terms deliberate self-harm and parasuicide, as well as self-inflicted violence, self-abuse and even wrist-cutting are ambiguous in including self-injurious acts with or without suicidal intent. In addition, the older term suicidal gesture also is ambiguous about intent, is somewhat judgmental and implies more understanding of motivation than is likely to be known. Clear and consistent terminology and definitions are important both for research and treatment of persons with self-injurious behaviours. Some studies lack close consideration of lethal intent and so may include mixed samples of NSSI and suicidal behaviours [7]. In this overview, with the term NSSI we refer to intentional, physical self-harm without a clear suicidal intent and in contrast to suicide attempts, which involve varying degrees of intent to die.

Diagnostic Issues

NSSI was not included in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) nor in the tenth edition of the International Classification of Diseases (ICD- 10) as a discrete diagnosis, but appeared as a symptom commonly associated with the diagnosis of Borderline Personality Disorder as well as with other psychiatric disorders [3]. In recent years, there have been several proposals to include NSSI as a distinct diagnosis within classification systems [8 9]. Indeed, DSM-5 includes NSSI as a condition that needs further study to support its consideration as a discrete syndromal category, and proposes tentative diagnostic criteria for further discussion, which include: a) the presence of at least five self-injurious acts within the preceding 12 months; b) acts are preceded by negative emotions or thoughts, such as distress, anxiety, sadness, anger, self-criticism, or need for punishment; c) the self-injuries have an apparent psychological purpose, such as to reduce negative emotions or thoughts or to avoid unwanted social situations or consequences; d) the self-injurious acts cause clinically significant social and functioning impairment [10]. Despite its ambiguous diagnostic status, NSSI is clinically important as an indication of functional impairment, its status as a major risk factor for suicide attempts and as a problem requiring specific interventions and management [5 8 11].

Epidemiology

NSSI is an important public health issue. It is a prevalent phenomenon across a range of ages and populations. However, lack of general agreement on its definition and diagnostic criteria limit assessment of its epidemiology and its distinction from suicidal acts. Nevertheless, some information is available about its prevalence in specific age groups and clinical populations. Estimates of its lifetime prevalence range from 0.40-1.0 to up to 2.9% of the general population [1 4 12-14].

Occurrence in young people

NSSI is quite prevalent among adolescents and young adults, and the mean age-at-onset has been estimated at 16 years [1 14]. Rates are somewhat lower among prepuberal children [15], but cases have been identified at 4 years [16]; moreover, 5% of a sample of college students were found to have made self-injurious acts before age 10 [17].

In nonclinical samples of adolescents, 10-15% were found to have self-injured at least once [6, 18-20]. Among adolescents receiving psychiatric treatment, rates of self-injury have been far greater, sometimes over 50%, with more severe, primary psychiatric illnesses [21 22].

Occurrence in adults

NSSI beginning during adolescence often persists into college-age or young adult years, affecting 12-17% of college students [23 24]. In these samples, three-quarters of subjects reported having several episodes of NSSI, starting in late adolescence in approximately 39% of cases. In adults, 46% reported to have had five or more episodes of self-injury [1 14], and the prevalence of NSSI in community samples of adults in the US has been as high as 4% to 6% [1 14 25]. In psychiatric samples of adult patients, the risk of NSSI is as high as 25% [2]. In geriatric samples, rates of NSSI are probably lower than among adolescents and young adults, but estimates are complicated by the rarity of studies in older persons and by confusion between NSSI and suicide attempts at all ages.

In contrast to suicide attempts (predominant in females) and suicide (more frequent in males), sex-differences are minor in NSSI, although women are more likely to engage in cutting behaviours, whereas men are more likely to strike themselves [17].

Relationships of NSSI and suicide

The distinction of NSSI from suicide attempts is not always simple, as suicidal ideation may co-occur with NSSI, and as NSSI is a leading risk-factor for suicide, especially among psychiatric patients and those who have required hospitalisation [26]. A limitation of studies involving self-injurious behaviours is that they usually do not clearly differentiate the presence or level of suicidal intent, which makes it difficult to estimate rates of NSSI versus suicide attempts. Nevertheless, many studies indicate a consistent relationship between apparent NSSI and later suicidal behaviour. The association appears to be independent of sex, age and method of self-injury, and to increase with more frequent episodes of apparent NSSI (especially > 20), a longer history of NSSI, use of multiple (≥ 3) methods of self-injury, a reported lack of pain and of immediate relief of distress after a NSSI act; moreover, some clinical factors, such as severity of psychiatric illness and specifically of depressive features, also increase the association between NSSI and suicidal behaviour [26-29]. A recent study on a large sample of US Army members found that 40% of subjects with NSSI attempted suicide within two years of follow-up [30]. The long-term association of suicide attempts with NSSI may be as high a 70%, with a nearly three-fold greater risk of suicide attempts following a history of NSSI [3 31]. According to Sullivan et al. (2014) [32], there is an increased of NSSI risk in jails. Over the 5 years of their analysis, the total number of acts of NSSI increased by 24%. On the other hand, a few studies have failed to support indications of an association of more severe psychiatric illness among persons who have made self-injurious acts and have also been overtly suicidal [27 33 34].

Importantly, although it is clear that NSSI and suicide attempts are strongly associated [1 26 35], there are also clinically important differences between NSSI and suicide attempts. They differ in psychosocial predictors (in general, NSSI is associated with less depression, anxiety, stress, and suicidal ideation and more self-esteem and interpersonal support compared to suicide attempts) [17 28 36], emotional correlates (relief of discomfort and the experience of positive emotional changes are common in NSSI, whereas depression and guilt often worsen with suicide attempts) [37], motivations (NSSI is usually aimed at generating less abnormal feelings, to punish oneself, or to express anger) [38] and psychological effects [26]. These findings are summarised in Table I.

Psychopathological explanations for the relationship of NSSI with suicide

Spectrum of self-harm

An older view is that self-injurious acts, including NSSI and suicide attempts of varied severity and lethality, form a spectrum of behaviours without sharp distinctions between them [39]. This view has been encouraged by the common association between NSSI and suicide attempts and by the status of NSSI and suicide attempts as the strongest known predictors of eventual suicide [1 7 39 40]. Moreover, NSSI and suicide attempts are associated with similar disorders, particularly depression and personality disorders, so as to enhance their relationship [1].

Acquired suicidal capability theory

In order to end one's own life, an individual has to overcome the fear and pain associated with suicidal behaviour as a means of escaping intolerable psychic distress. One way to increase capability for suicide may be engaging in NSSI behaviour as a means of reducing negative emotions associated with self-harming behaviour and becoming more habituated to, and tolerant of self-inflicted violence [26 41 42].

Gateway theory

NSSI and suicidal behaviour can be considered as existing along a behavioural continuum of self-harm behaviour, ranging from NSSI to completed suicide. NSSI may precede the development of suicidal acts, and represent an escalation of suicidal intent. According to this view, NSSI represents a "gateway", tending to precede suicidal ideation or lethal intent [26].

Common variable theory

Sometimes, a common variable may account for the co-occurrence of suicide attempts and NSSI in the same person. NSSI almost certainly increases the risk for suicidal behaviour, but both may emerge from a psychiatric disorder such as a personality or major affective disorder. This possibility is consistent with evidence that both NSSI and suicide are associated with psychological distress, depression, low self-esteem and lack of social support [26]. Finally, it may be that all of the three preceding theories may contribute to the occurrence of NSSI [26]. In general, NSSI (like suicide) is associated with a broad range of psychiatric disorders, and sometimes with multiple diagnoses, particularly major affective, personality and substance abuse disorders [1 3].

Treatment

Pharmacological treatments

Many psychopharmacological agents have been tried in

TABLE I.
Comparison of suicide attempts and non-suicidal self-injuries (NSSI).

Factors	Suicide attempts	NSSI
Diagnostic criteria	Require lethal intent	Require lack of lethal intent
Median onset age	Mid-adolescence	Late latency, early adolescence
Prevalence		
Adults:		
General population	< 1%; lifetime; 0.10%-0.20%/year	2%-6% lifetime
Psychiatric disorders	20%-30% lifetime, 2%-4%/year	15%-25% lifetime
Adolescents:		
General population	< 1% lifetime	15%-20% total
Psychiatric disorders	10%-20% total, 1%-2%/year	35%-55% total
Sex risk-ratio	Female > male (attempts); Male ≥ female (4-fold; suicide)	Similar in females and males
Frequency per person	Very few lifetime acts	Many lifetime acts (≥50% of cases have ≥5 episodes; About 1% have hundreds)
Adverse medical outcome	Variable, uncommon if survived	Variable severity
Fatality risk		
General population	1/20-30 attempts (geriatric risk greater)	Rare
Psychiatric disorders	1/5-10 attempts	Very uncommon
Associated disorders	Mood disorders, borderline & other personality disorders	Mood, personality, obsessive-compulsive psychotic disorders
Associated emotional states	Severe depression, despair, anger, agitation, impulsivity	Dysphoria, guilt, depression typically less severe than with suicide attempt
Methods	Poisoning, firearms, jumping	Cutting, burning (especially females); hitting, burning (especially males); sometimes multiple
Psychosocial factors		
Predictors	Major affective disorder, depression, hopelessness, post-traumatic stress disorder, prior acts	Negative temperament, poor adaptive skills, pessimism, social isolation or contagion
Correlates	Hopelessness, overwhelming psychic pain	Depression, anhedonia, anxiety, frustration, anger
Motivations	Escape	Temporary relief of psychic distress, punishment
Consequences	May worsen guilt and depression	Rapid relief of psychic distress (encouraging more acts)
Biological factors	Uncertain	Uncertain

Data are based on references cited in the text.

the treatment of NSSI. Most of the relevant studies are anecdotal case reports or series, and well-designed, large, long-term, controlled trials are lacking [1 31 43]. Agents employed have included antidepressants of various types, older and modern antipsychotics including clozapine, mood-stabilisers including anticonvulsants and lithium, anxiolytics and the opioid antagonist naltrexone. None has yet emerged as clearly superior or as a treatment of first-choice.

Psychosocial treatments

Many forms of formal psychotherapies have been applied to the treatment of NSSI, largely in parallel with studies of suicidal behaviour, including cognitive-behavioural techniques (CBT) and dialectic-behavioural treatment (BDT). These approaches are reviewed critically and in detail elsewhere [1 31 44]. There has been particular interest in the use of DBT owing to evidence of superiority to dynamic, insight-oriented psychotherapy and to treatment by suicide experts, at least for reducing risk of suicide attempts in patients with borderline personality disorder [45]. Other interventions with promising beneficial effect in NSSI include psychoeducation, family therapy and physical exercise [1]. Treatment studies have rarely been continued for more than one year, and the long-term outcome and prognosis

in NSSI remains remarkably little studied. Such studies need to differentiate NSSI from suicidal behaviours, to consider specific clinical and age-groups and to pursue outcomes for at least several years.

Conclusions

The relationship between NSSI and suicide attempts is somewhat complex but important to understand. Historically, there has been a lack of clear distinction of self-injurious acts occurring without apparent suicidal or lethal intent (NSSI), and suicidal acts in which there is some degree of intent to die. NSSI and suicide attempts differ in important ways. By definition, NSSI is performed primarily to reduce overwhelming negative emotions without an explicit or conscious intent to die. NSSI is also performed more frequently and with less medical severity compared to suicide attempts, and has a different pattern of psychosocial correlates (Table I). These include, notably, apparent ability of NSSI acts to provide immediate, short-term relief of psychic distress that is not typical of suicide attempts; indeed, this beneficial effect probably reinforces and encourages more self-injurious acts. NSSI and suicide attempts can occur in the same person at different times, and both share causal or contributing factors, including negative self-concepts, depression, guilt, and behavioural disinhibition. Thus, NSSI is appropriately viewed clinically as behaviour that is distinct from suicide attempts in terms of its clinical meaning, to the extent that lethal intent is lacking, but as an important risk factor for suicide that requires ongoing assessment of suicidal intent. There is a pressing need for more, better-designed and longer treatment trials for NSSI.

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