Non-suicidal self-injury among Northern Italian High School students: emotional, interpersonal and psychopathological correlates

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Summary

Non-suicidal self-injury (NSSI) is a common phenomenon in teenage society. Besides clinical literature shows significant correlations between NSSI and different psychopathologies, it is less known about non clinical population in the face of the important necessity to individuate at-risk population in order to plan efficacious preventive interventions.

Objectives

This study aims to better understand NSSI by taking a further investigation into Italian non-clinical population, recruiting 277 subjects (aged 13-19) of 4 different schools in Northern Italy.

Methods

The participants were given a question about NSSI frequency and a 6-self-report-battery composed by: Youth Self-Report 11-18, Child Behaviour Check List, Barratt Impulsiveness Scale, Toronto Alexithymia Scale, Children's Depression Inventory and Symptom Checklist-90-R.

Results

12.6% of our subjects declared to have admittedly harm themselves at least once and just 11.4% of them told about this episode to an expert. The inferential analysis shows connection between alexithymia, interenalizing/externalizing problems and NSSI. No association was found with impulsiveness.

Conclusions

These results have many interesting clinical and preventing implications: first of all, they help specialists to better understand the NSSI pathology and its precursors secondly they show NSSI-people inside world and way of thinking about others.

Key words

Non-suicidal self-injury (NSSI) • Impulsiveness • Alexithymia • Prevention • Teenagers

Background

Non Suicidal Self Injury (NSSI) is defined as "the deliberate, self-inflicted destruction of body tissue resulting in immediate damage, without suicidal intent and for purposes not culturally sanctioned [1].

NSSI is an interesting phenomenon, particularly common in adolescence, which is reaching not only the medical but also public attention. This tendency which is linked to its characteristic to stay hidden from parents, other significant and professionals particularly [3 4], moves the consequent fear in adults not to be able to properly know NSSI motivations and to act primary and secondary prevention. The international frequency of the phenomenon is very heterogeneous and sets between the 5.5% and the 30.7%; two recent reviews by Muehlenkamp, Claes, Havertape, et al. (2012) and Swannell, Martin, Page, et al. (2014) tried to minimize methodological factors (as tests used for assessment, anonymity, positive reinforcement) and found the controlled prevalence of respectively 18% and 17.2% [5 6].

Nowadays we can find an enormous number of articles about this topic with a specific regard to its prevalence and psychopathological correlates. In fact, NSSI was found to be associated with either internalizing (depression and anxiety) [7 8], and externalizing (conduct or oppositional defiant disorder) disorders [7 8]. Moreover, the international works enlarged this perspective by studying some behavioural tendencies which could play an important role in the onset and maintenance of the disorder, such as poor ability to regulate emotion, reduced self-awareness or absence of important relationships to others [9]. Within this prospective, alexithymia and impulsiveness were taken into account too; alexithymia was found to be frequently associated with self-injurious behaviours in most of the works worldwide [10-16] while the association between impulsiveness and NSSI was much more difficult to claim with certainty. As a matter of fact some works show the presence of this link [10 17 18] some others show no connection [19 20] also depending on clinical rather than healthy populations.

As a product of such great number of findings on NSSI psychopathological correlates, it was recently recognised

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as a disorder per se by all the medical community and as a matter of fact it was added in the third section of DSM-5 as a disorder which needs further investigations. Before the DSM-5 choice to include NSSI in its section, it was considered a symptom of Borderline Personality Disorder (BPD) and it was studied as its manifestation.

Despite the great quantity of works, the general overview is still fragmented because of the chosen provenience of the samples and/or studies' methodology. International literature is mostly focused on American subjects, lacking in non-American populations that still need further investigations. Since NSSI was seldom studied in Italian clinical [9 10] or non clinical sample [21 22] although referral because this issue is arising [23], we tried to deepen and add knowledge about this popular topic. Then, the purposes of this study are firstly to analyse NSSI prevalence in an Italian non-clinical sample of secondary school adolescents and, secondly, to investigate any differences between NSSI and not NSSI students in terms of psychopathological (Internalizing and Externalizing Problems) or emotive-behavioural (alexithymic and impulsive tendencies) traits. This investigation aims to individuate at risk population to plan efficacy preventive intervention, particularly making light on specific psychological and emotional characteristics that predispose an adolescent to being vulnerable to self harming, in line with the general aim of self harming field's research which is to prevent its acting [24].

Methods

Participants and procedure

The subjects involved in this study were 277, aged 12-19 years (M = 15.76; SD = 1.35), 184 females (66.4%) and 93 males (33.6%). They were recruited in five high schools in Northern Italy, three in Lombardy and two in Veneto (North Italy). The project had been presented to seven school and accepted by five. Then 14 classes were randomly chosen and submitted with an informed consent by students' and their parents, after a first permission received by the deans of the schools. All the subjects were asked to complete a 6-questionnaires-battery evaluating psychopathological features and behavioral traits which were thought to be important in the self-harming event. Just before the submission of this battery, participants were asked a dichotomous Yes/No question about self-harming ("Have you ever admittedly self-harmed yourself?"), and some other questions about frequency and social support pursued after the NSSI event.

Measures

The 6-questionnaire-battery was composed by: Youth Self-Report 11-18 (YSR), the Child Behavior Check List *6-18* (CBCL) by Achenbach, the Children's Depression Inventory (CDI), the Symptom Checklist-90-revised (SCL-90-R), the Barratt's Impulsiveness Scale (BIS-11) and the Toronto Alexithymia Scale (TAS-20). Five of the questionnaires were filled in by the adolescents themselves and one of them (CBCL) was given to be completed by their parents.

The Youth Self Report (*YSR)* and the Child Behavior CheckList *(CBCL*) questionnaires are both part of the assessment system by Achenbach called ASEBA (Achenbach System of Empirically Based Assessments) [25] and they are among the most commonly-used scales for rating juvenile behaviour, used internationally both in clinical and research settings [26 27]. YSR is a self report completed by the adolescent himself, while CBCL is to be filled in by the child's parents. Both questionnaires can be split in two different parts: the first section assesses the competences; the second one is composed by 112 items for YSR and 113 items for CBCL, assessing last 6 months psycho behavioural tendencies, that could represent the manifestation of a psychopathology. From the score on these items (-1, 0, 1) behaviours can be assessed as "normal", "borderline" or "clinical" on 8 specific syndrome scales which are in turn grouped into: internalizing problems (anxiety, depression, withdrawal, somatization); externalizing problems (aggressive and rule-breaking behaviour); and other problems (social problems, thought-related problems, attention problems). This study assesses particularly Internalizing Problems, Externalizing Problems and Total Problems (internalizing, externalizing and other problems).

The revised version of the Symptom Check List (SCL-90 R) [28] is a self-report scale evaluating the patients' clinical symptoms in the last week. It is composed by 90 items, each one describing the symptoms of a particular disorder on a 5 linkert scoring that assess 9 symptom dimensions: Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, Psychoticism and a Global Score describing a general rate of clinical disfunctioning. We considered SCL 90 R Interpersonal Sensitivity and Paranoid Ideation scales, over the Global score, because we were particularly interested in evaluating the adolescent's perception of the others and of the context.

The Children's Depression Inventory (CDI) [29] consists of 27 items assessing feelings, behavior and thoughts associated with depression in childhood and adolescence. Respondents choose one of three sentences that best describe how they have felt in the previous two weeks. Each answer is graded from 1 to 3, and the sum of the scores is calculated to obtain the total score (19 is the cut off over which is determinable the presence of depressive traits). The Italian version of the CDI was used in this study [30 31]

The Barratt's Impulsiveness Scale-11 (BIS-11) [32 33], meas-

uring impulsiveness, includes 30 items that are scored to yield three factors (attentional, motor, and non-planning impulsiveness) from which combined, a total score is obtained: the higher the score, the greater the level of impulsiveness identified. We used the Italian version of the BIS-11 for adolescents [34].

The Toronto Alexithymia Scale (TAS 20) [35] is a self-report questionnaire that measures the three factors defining alexithymia: "difficulty in identifying feelings", "difficulty in communicating feelings to others", and "externally-oriented thinking". Respondents were classified as non-alexithymic (scores < 51), borderline (scores 51-60), or alexithymic (scores > 61). We used the Italian validated version of the TAS-20 [36].

Data analysis

The descriptive statistics were calculated especially by gender, age and self-harming variables with a special regard for means, standard deviations and general frequencies.

Due to the significant difference between the two groups divided by self-harming variable, the inferential analysis was drawn through a non parametric test (Independent-samples Mann-Whitney U Test), which was rated on Total Scores of SCL-90-R, CDI, BIS-11, TAS-20, YSR and CBCL; regarding ASEBA questionnaires the scales Internalizing and Externalizing were taken into account too. We also specifically compared the two groups by two scales of SCL-90-R: Interpersonal Sensitivity and Paranoid Ideation.

The p value was set significant if less than .05 and it was always calculated two sides.

Descriptive and inferential analysis were drawn by the software SPSS (Statistical Package for Social Science, IBM® SPSS® Statistic 22.0 for Windows; International Business Machines Corp., Armonk, New York, USA).

Results

As far as descriptive analysis is concerned, 87.4% (n = 242) of the sample declared never having self-harmed, while 12.6% (n = 35) admitted self-harming at least once. In the self-injuring sample there are 27 females (77.14%) and 8 males (22.86%); only the 11.4% (n = 4) of those told about this event to someone else (familiar or health operator such as medical doctor or psychologist). 11.4% (n = 4) of the sample declared a self-injurious behaviour at least 5 days in the last year meeting the criterion A of the newly proposed DSM-5 category "Non-Suicidal Self-Injury". The majority of self-harming adolescents was aged ≤ 16 years (n = 27, 77.14%).

As far as the inferential analysis is concerned the results clearly show significant differences in scores distribution between self-harmers and no-self-harmers, regarding all the variables taken into account except from CBCL Externalizing Problems, and BIS-11 Total score (U-stand = .155, p = .877 and U-stand = 1.666, p = .096). YSR internalizing problems, YSR externalizing problems and YSR Total Problems scored respectively U-stand = 5.366, p < .05; U-stand = 3.421, p < .05 and = 5.119, p < .05; CBCL internalizing problems and CBCL Total problems scored U-stand = 3.844, p < .05 and U-stand = 3.284, p < .05; SCL 90 R Global Score scored U-stand = 6.133, p < .05; TAS-20 Total score scored U-stand = 3.461, p < .05; CDI Total Score scored U-stand = 5.072 p < .05; SCL-90-R Interpersonal Sensitivity and SCL-90-R Paranoid Ideation scored U-stand = 4.491 p < .05 e U-stand = 6.282, p < .05 (Table I).

Discussion

Our study is one of the first studies in Italy about NSSI, which was very poorly studied, especially in a normative population sample.

The prevalence found in our sample (12.6%) is slightly under the mean proposed in the recent reviews (18%, Muehlenkamp, et al., 2012; 17.2% Swannell, et al., 2014). This underrated result might be connected to the use a dichotomous Yes/No question about self harming, which could promote an underestimation of the prevalence [5 6]. Only 11.4% of our sample try to solve their self-injurious problems by referring to a medic or psychologist, confirming previous works [3]. This data opens a reflection about the possibility the physicians could have in enhancing the care provided to self-injures via the as-

TABLE I.
Results of inferential analysis (YSR, CBCL, SCL 90R, 20 TAS, CDI, BIS 11).

	U-stand	p value
YSR Internalizing problems	5.366	< .05
YSR Externalizing problems	3.421	< .05
YSR Total problems	5.119	< .05
CBCL Internalizing problems	3.844	< .05
CBCL Externalizing problems	.155	.88
CBCL Total problems	3.284	< .05
SCL 90 R Global score	6.133	< .05
TAS-20 Total score	3.461	< .05
CDI Total score	5.072	< .05
BIS-11 Total Score	1.666	.10
SCL-90-R Interpersonal Sensitivity	4.491	<.05
SCL-90-R Paranoid Ideation	6.282	<.05

sessment of risk, the understanding of the functions of the behavior, assisting the patient in identifying motivations for treatment and treatment options, and provision of long-term behavioral and risk monitoring [4 5 37 38]; awareness towards both medical doctor to detach the problem and to youths and familiars to seek medical counseling, should be then sustained. These are first steps to build a solid therapeutic relationships needed to work both with parents and children affected by psychological disease.

As far as the inferential analysis is concerned NSSI population seems to be clinically different from the group of non-self-injurers. As a matter of fact self-injurers show higher scores than controls in almost all the variables considered, except from CBCL Externalizing Problems and BIS 11 Total Score. Aside from being significantly different from the control sample, NSSI population's scores are often near or far beyond the clinical cut-offs. For example, mean score of NSSI population on TAS-20 questionnaire (60.11), places in the borderline range (52-60); self-injurers 'mean CDI Total score was 19.68 (cut off ≥ 19); ≥ mean results in some YSR and CBCL variables place in the borderline range or close to it (≥ 61 points): YSR Internalizing Problems = 68.34, YSR Total Problems = 63.86, YSR Externalizing Problems = 55.74, CBCL Internalizing Problems = 59.53, CBCL Total Problems = 54.67.

These tendencies highlight that the NSSI population often suffer from other psychopathologies either internalizing (depression and anxiety) or externalizing (conduct and oppositional-defiant disorders), with a specific regard for depression (CDI), confirming the literature [7 9] and supporting DSM 5 choice to consider NSSI a disorder per se [39-41]. In addition self-injurers show significant difficulties in expressing and recognising their and others' emotions: our data suggest alexithymia playing a fundamental role in adolescent onset of NSSI, according to international literature [12-15].

It worth here to mention some studies about alexithymia in different pathologic conditions such as headache [42], and the association between the latter and an increased risk of deliberate self-harm [43].

On the contrary, our results about impulsiveness place with works finding no association between this variable and the NSSI episodes [19 20].

An interesting outcome of our work is about the two SCL-90-R scales (Interpersonal Sensitivity and Paranoid Ideation) which we decided to pay particular attention to. Paranoid ideation typically means to have a biased perception of the world often exhibiting more hostile beliefs; while interpersonal sensitivity can refer to both how well one "reads" other people and how appropriately one responds. Both of these variables were significantly different between groups, showing a particular way of interacting with others: it seems self-injurers are over-sensitive to the outside world and also perceive it as aggressive and dangerous, suggesting that reasons for self-harm could deal with both interpersonal distress, and need for self-validation and achievement of a personal sense of mastery [44]. This result could be very useful for clinical purposes, justifying on one hand how hard could be to deal with self-injurers' attitude not to share their problems with others and to search for help [4 45], and on the other hand how important it is to pay attention, since the beginning, to promote a good working alliance with them, in line with that authors who suggest that seeking for help cannot be considered an a priori motivation for the clinical intervention but the first result of it, and to be reached considering specific techniques according to psychopathology [46-49].

Our study shows some limitations: firstly, the sample we enrolled was recruited in scientific and linguistic high schools, not considering vocational ones, and automatically excluding analysis on different cultural backgrounds. Secondly, the use of self reports can easily lead to answering bias; thirdly, our choice to use a direct Yes/No question to divide the groups in self-injurers and non-self-injurers could have lead to an underrating of the prevalence of the phenomenon [6].

Conclusions

It is possible to conclude with some reflections, involving research, prevention, diagnosis and therapy dimensions:

- in general, our results suggest that educational programs of primary and secondary prevention should be planned in every school to make NSSI early recognised and dealt. Moreover, being the family GP the person who could firstly become aware of the symptoms of NSSI, refresher courses aimed at medical doctors should be planned too;
- in particular, this study highlights a self-injurers' typical representation of others and outside world suggesting two clinical implications: it explains firstly the repulsiveness to share their problems with others and, secondly, their difficulty to build a solid diagnostic and therapeutic alliance;
- finally, our results stress the alexithymic trait as characteristic of self-injuring teenagers and suggest that, as far as a clinical and therapeutic point of view is concerned, it could be very useful for this population to work on emotional awareness, feelings expression and mentalization process' development.

Conflicts of interest

None.

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