The Prevalence and Most Frequent Forms of Self-Harm in Adolescents

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ABSTRACT

Self-harming behaviour is a relatively frequent form of high risk behaviour in adolescents and has undergone major changes during the last decades. These mainly include the prevalence, comorbidity and a wider range of the forms of self-harming behaviour. The main objective of this study is to provide some up-to-date preliminary findings related to the prevalence of self-harm in the population of 12 to 18-year-old adolescents in Slovakia. Using The Self-Harm Inventory, the authors have examined the prevalence of the individual forms of self-harm and analysed them with regard to age and sex. The results indicate a high prevalence of self-harm among adolescents (59.11%), with a higher prevalence in women, the absence of a correlation with age and the presence of cross-gender differences in the forms of self-harming behaviour. The conclusions indicate a need for a clearer definition of the term self-harm and in particular of the forms of behaviour which may be considered as a type of this high risk behaviour. In the context of the DSM-5 proposal for the diagnostics of Non-Suicidal Self-Injury, the study discusses the many diverse definitions of self-harm and especially the importance of studying the indirect psychological forms of self-harming behaviour.

Keywords: self-harm, prevalence, forms, adolescence

Introduction

Self-harming behaviour as a relatively common form of high risk behaviour in adolescents has undergone major changes over the last few decades (Buresova 2016). These changes have taken place in many areas – a decrease in the age when this type of behaviour occurs during the development of an individual, an increase in its prevalence in the population, the emergence of new forms and motivations for this type of behaviour as well as new purposes (Klonsky, Victor & Saffer, 2014). The need to study this phenomenon in a new context has escalated, particularly due to the alarming increase in its prevalence, since self-harm has been, until recently, in psychology and psychiatry in particular, associated with the diagnosis of borderline personality

disorder (Glenn & Klonsky, 2013), mental retardation, autism, or it was well-known behaviour that occurred, for instance, in victims of sexual abuse (Klonsky, Victor & Saffer, 2014), and it was not generally considered to be a wide-spread form of high risk behaviour in the non-clinical population. The current changes in the situation are reflected in the most recent (fifth) revision of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5, 2013), in which "Section III – Emerging Measures and Models" proposes diagnostic criteria for "Non-Suicidal Self-Injury" disorder. However, it is still not clear how accurately the proposed diagnostic criteria reflect the present state. For instance, the criteria do not mention mental self-harm, which can occur in children and adolescents, so it is still uncertain to what extent this diagnosis covers the observed phenomenon. In order to understand and correctly define the notion of self-harm, it is first and foremost necessary that we obtain the most up-to-date data about the prevalence and forms of this undesirable behaviour.

The data regarding the prevalence of self-harm in the adolescent population as reported in scientific publications differs; it ranges from 1.7% (Madge et al., 2008) to 69% (Hallab & Covic, 2010). Most other studies report a prevalence that falls within this range – e.g., Muehlenkamp and Gutierrez (2004) in the United States report a prevalence of 15.9%; González-Forteza et al. (2005) found, from a sample of more than 2,500 adolescents in Mexico, a prevalence of self-harming behaviour of 7.2%. In Norway, the lifelong prevalence reached 9.3% (Tormoenet al., 2013), in England – 10% (Hawton & Harriss, 2008), and in Australia – 8% (Moran et al., 2012). In those countries near to Slovakia, the values range from: 25.6% in Germany (Plener et al., 2009), through 19.96% in the Czech Republic (Hrubá, Burešová & Klimusová, 2012) to 1.7% in Hungary (Madge et al., 2008). These marked differences in prevalence may be ascribed to a variation in the methodologies or the samples but more specifically to the fact that there is no single definition of exactly what (behaviour) belongs under the notion of self-harm. Those studies reporting a prevalence greater than 50% usually include self-abasing thoughts or the abuse of alcohol, that causes self-harm, as forms of self-harming behaviour (Buresova 2016), while others only consider recurrent physical self-inflicted intentional damage to the body. Thus, in order to identify the prevalence of this phenomenon and to clarify the other major correlations (aetiology, comorbidity etc.), first it is necessary to conduct fundamental research into the forms of self-harm and their occurrence, which would allow us to understand and define this phenomenon.

Various activities may be considered to be forms of self-harm – most frequently it involves cutting or burning (Muehlenkamp & Gutierrez, 2004), but it may also include hitting, banging or punching walls and other objects to induce pain, scratching, pulling hair, extensive rubbing or even breaking bones, ingesting toxic substances and interfering with the healing of wounds

(Whitlock, Eckenrode & Silverman, 2006). Other forms can be characterized as those that potentially lead to self-harm – this includes various forms of risk taking both consciously and intentionally or of purposefully engaging in a dangerous situation with the intention to suffer harm – e.g., dangerous driving, climbing etc. In addition to these physical forms of self-harm (i.e. that lead or may potentially lead to an injury), mental self-harm also occurs among adolescents – lowering self-esteem, torturing with self-defeating thoughts, engaging in emotionally/sexually abusive relationships, setting up a relationship in order to be rejected etc. (Sansone & Sansone, 2010). However, not all the studies that have observed the prevalence of self-harm have included these forms, which brings us back to the need for a study to consider the individual forms and their prevalence.

Objective

The main objective of the study was to provide preliminary data relating to the existing forms of self-harming behaviour and their prevalence in adolescents between the ages of 12 and 18. The secondary aims included a deeper analysis of the occurrence and prevalence of different forms with regards to age and sex.

Method

From the various standard methods for registering self-harming behaviour, we selected The Self-Harm Inventory (SHI – Sansone & Sansone, 2010), as it contains a relatively wide range of forms of self-harm. It is a self-assessment questionnaire that contains 22 questions to assess the existence (13 questions also assess the frequency) of individual forms of self-harming behaviour. The items are preceded by the phrase “Have you ever intentionally, deliberately to cause yourself harm…” followed by the different forms of self-harm: “cut yourself, burned yourself, hit yourself, scratched yourself,” etc. In addition to these items, the questionnaire also includes three items connected to eating disorders (i.e. “exercised an injury on purpose”, “starved yourself to hurt yourself”, “abused laxatives to hurt yourself”), two items with a high level of lethality (i.e., “overdosed”, “attempted suicide”), and three items relating to medical issues (i.e. “prevented wounds from healing”, “made medical situations worse on purpose”, “abused prescription medication”) [15; p. 18]. Three items were deleted from the original questionnaire as the survey was conducted using a sample that included children from 11 years old, specifically: “engaged in sexually abusive relationships” and “lost a job on purpose” (this is hardly relevant for the younger age groups) and “driven recklessly on purpose” (as only people over the age of 18 years may drive a motor vehicle unsupervised in Slovakia). On the other hand, two additional items were added

to the questionnaire, which tend to occur as a form of self-harm in the adolescent population: "not slept enough to hurt yourself" and "over-exercised to hurt yourself ". The modified form of the questionnaire thus included 21 questions. After answering the questions in the questionnaire, the subjects could also list other forms of self-harming behaviour which they had engaged in but were not mentioned in the questionnaire. The questionnaire was a part of a more extensive test battery, which inter alia asked for the subjects' age and sex.

Subjects

The subjects were Slovak adolescents attending primary or secondary school. 38 (3.8%) questionnaires out a total of 1,004 questionnaires were excluded due to the incomplete or incorrect completion of the test battery. 966 subjects between 12 and 18 years of age (mean age 15.04) participated in the research, of whom 579 (59.9%) were women.

Results

The prevalence of self-harming behaviour in the whole sample was 59.11%. Of the 571 adolescents who indicated a certain form of self-harm in the SHI questionnaire, the most frequent behaviour was deliberate (to cause self-harm) "Abused alcohol to hurt yourself" (N=248; 25.7%), followed by "Not slept enough to hurt yourself" (N=241; 24.9%) and "Tortured yourself with self-defeating thoughts" (N=192 (19.9%). The prevalence of the remaining forms observed is presented in Table 1. 26.8% (N=153) of adolescents have only used one form of self-harm in their history of self-harming behaviour. The two most frequent forms of self-harming behaviour in this group align with those in Table 1 – adolescents hurt themselves most frequently through alcohol abuse and sleep deprivation. However, the third most frequent form is "Over-exercised to hurt yourself", followed by "Banged your head on purpose" and "Tortured yourself with self-defeating thoughts". In the group of individuals who only indulge in a single form of self-harming behaviour, the forms "Attempted suicide", "Abused prescription medication", "Set yourself up in a relationship to be rejected", and "Engaged in emotionally abusive relationships" are not reported. Engaging in two of the observed forms of self-harm are reported by 107 adolescents (18.7%) and 85 adolescents (14.9%) report engaging in three forms. Less than a quarter (21.5%) of the subjects reported engaging in five or more different forms of self-harm.

Table 1: The prevalence of the individual forms of self-harm in the adolescent population who self-harm

Have you ever intentionally, or on purpose, done any of the following:			
[Form of self-harm]:	%	[Form of self-harm]:	%
Abused alcohol to hurt yourself	43.4	Made medical situations worse on purpose (e.g., skipped medication)	12.6
Not slept enough to hurt yourself	42.2		
Tortured yourself with self-defeating thoughts	33.6	Burned yourself on purpose	10.0
Hit yourself	31.7	Engaged in emotionally abusive relationships	9.6
Scratched yourself on purpose	30.5	Attempted suicide	8.1
Cut yourself on purpose	28.9	Distanced yourself from God as a punishment	6.5
Exercised an injury on purpose	25.0	Been promiscuous (i.e., had many sexual partners)	5.6
Banged your head on purpose	21.7	Abused prescription medication	5.3
Over-exercised to hurt yourself	21.5	Overdosed	4.0
Prevented wounds from healing	14.9	Set yourself up in a relationship to be rejected	3.2
Starved yourself to hurt yourself	14.4	Abused laxatives to hurt yourself	2.3

The highest tendency to repeat self-harming behaviour was observed in those individuals who harm themselves through sleep deprivation (25% of those who reported this have repeatedly

engaged in this behaviour), followed by "Hit yourself" (repeated by 18.7%) and "Cut yourself on purpose" (18.2%). On the other hand, certain forms of self-harming behaviour were (allegedly) never repeated by anyone in the observed groups. This included, for instance, "Prevented wounds from healing", "Abused prescription medication", or "Set yourself up in a relationship to be rejected". Of the 46 adolescents (8.1% of the total sample) who reported an attempted suicide, more than a quarter had attempted it more than once (28.3%).

If we take a look at the prevalence and forms of self-harming behaviour in the individual sexes, it turns out that 54.3% of men engage in self-harm and 62.3% of women. The significance value of the correlation between sex and the occurrence of self-harm (sig. = .012) in all sample subjects indicates that there is a statistically significant correlation between sex and the occurrence (the overall prevalence) of self-harming behaviour. The cross-gender differences in the prevalence of the individual forms of self-harm are indicated in Table 2.

Table 2 clearly shows that there are differences between men and women as to the preferred form of self-harm and its extent. For example, while "Tortured yourself with self-defeating thoughts" is the seventh most common form, occurring in 21.9% of self-harming men, it was the second most common form in women, with a prevalence of 40.4%. On the other hand, "Been promiscuous" had the 2nd lowest prevalence (19th place) in the case of women, whereas in men it came in the middle of the prevalence of forms of self-harm (11th-12th place). Thus, subsequently we considered whether and for which forms there was a statistically significant correlation between sex and the prevalence of a specific form of self-harming behaviour. The results of the Chi-square test for the correlation between sex and specific forms of self-harming behaviour indicate that it is higher for the following items: "Tortured yourself with self-defeating thoughts", "Scratched yourself on purpose", "Cut yourself on purpose", "Exercised an injury on purpose", "Prevented wounds from healing", "Starved yourself to hurt yourself", "Made medical situations worse on purpose", "Engaged in emotionally abusive relationships" and "Been promiscuous" where there is a statistically significant correlation. At the same time, the prevalence of all forms were higher in the female group than the male group, with the exception of "Been promiscuous".

Table 2: The prevalence of the individual forms of self-harming behaviour and their percentage ranking in the self-harming population of men and women and the significance values of the correlation between sex and the prevalence of the given form of self-harming behaviour

Forms of self-harm	Prevalence in men (%)	Order	Prevalence in women (%)	Order	Chi-Sq. sig.
Abused alcohol to hurt yourself	44.8	2.	42.7	1.	.625
Not slept enough to hurt yourself	47.1	1.	39.3	3.	.069
Tortured yourself with self-defeating thoughts	21.9	7.	40.4	2.	.000**
Hit yourself	34.3	3.	30.2	7.	.311
Scratched yourself on purpose	24.8	4.	33.8	5.	.024**
Cut yourself on purpose	18.1	8.	35.2	4.	.000**
Exercised an injury on purpose	14.8	9.	31.0	6.	.000**
Banged your head on purpose	25.2	6.	19.7	9.	.120
Over-exercised to hurt yourself	26.2	5.	18.8	10.	.390
Prevented wounds from healing	9.5	11.-12.	18.0	11.	.006*

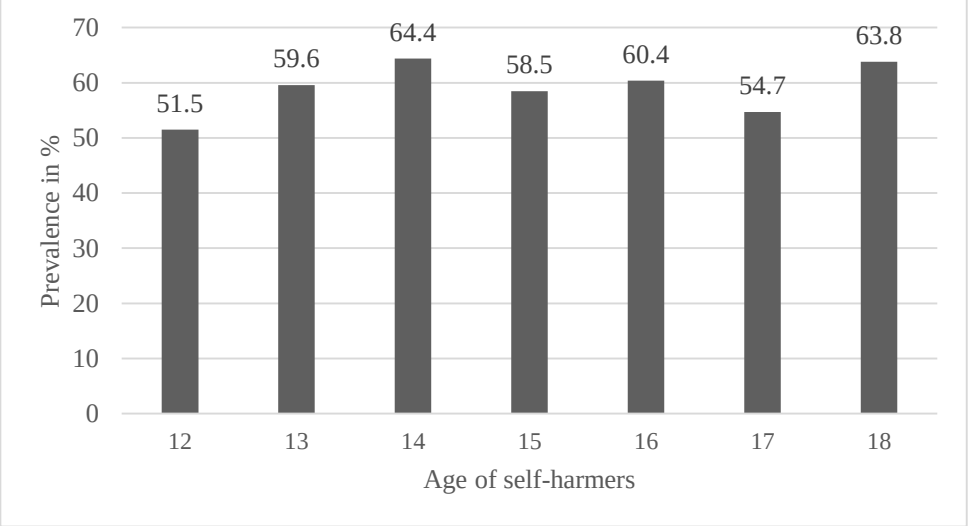
Starved yourself to hurt yourself	3.3	20.	20.8	8.	.000 **
Made medical situations worse on purpose	5.7	13.-15.	16.6	12.	.000 **
Burned yourself on purpose	10.0	10.	10.0	14.	.992
Engaged in emotionally abusive relationships	5.2	16.-17.	12.2	13.	.007 *
Attempted suicide	5.7	13.-15.	9.4	15.	.117
Distanced yourself from God as a punishment	5.7	13.-15.	6.9	16.	.571
Been promiscuous	9.5	11.-12.	3.3	19.	.002 **
Abused prescription medication	5.2	16.-17.	5.3	17.	.990
Overdosed	4.8	18.-19.	3.6	18.	.496
Set yourself up in a relationship to be rejected	4.8	18.-19.	2.2	21.	.093
Abused laxatives to hurt yourself	1.9	21.	2.5	20.	.669

Note: The prevalence of a specific form of self-harm statistically significantly correlates (on the level of p< 05; ** on the level of p< 005) with the respondent's sex*

The analysis of age and prevalence of self-harm found no significant trends. Figure 1 indicates that from the age of 12, the prevalence of self-harming behaviour rises only moderately, but from

the age of 14 the curve fluctuates. At the age of 18 the prevalence (63.8%) almost reaches the maximum level which was reported at the age of 14 (64.4%).

Figure 1: The ratio of self-harming individuals in the sample studied by age



An observation of the correlation between age and the number of forms of self-harming behaviour found no correlation between these variables (sig. = .678). The number of forms of self-harming behaviour in adolescents does not rise (they do not include new forms in their inventory) or fall (the development of self-harm over time does not tend to limit the degree of variability or the preference for smaller number of forms of self-harming behaviour) with increasing age.

Discussion

The prevalence of self-harm in our study sample of adolescents was 59.11%, which is higher than the majority of the reported studies (e.g., Hawton, Saunders and O´Connor (2012) – 10%; Moran et al. (2012) – 8%; Hrubá, Burešová & Klimusová (2012) – 20%; Plener et al. (2009) – 26%). However, it is comparable to the data from Hallab and Covic – 69% (2010) who included forms such as self-defeating thoughts and "Abused alcohol to hurt yourself" into the forms of self-harming behaviour they observed. Again this highlights the need for a clear definition of what should be considered as self-harm (and considered in any research) and at the same time, it serves as an impetus for further research. Unless the forms of behaviour included in the definition of self-harm are unambiguously categorized, it is not possible to propose an accurate prevalence of this phenomenon or to compare the data from individual studies.

A closer look at the nature of our sample shows that the higher prevalence of self-harming behaviour may be ascribed to the higher proportion of women in the sample (they comprised 60%). Our results as well as the results of other studies (Hawton & Harriss, 2008; Moran et al., 2012; Bresin & Schoenleber, 2015 etc.) clearly show that the prevalence of self-harming behaviour is higher in women than in men, especially in adolescence. Moreover, women are psychologically more likely to verbalise their problems and are more willing to share them with others, men might keep this high risk behaviour secret, to a greater extent than women, and this should also be taken into consideration. A tendency to communicate one's problems with others is also closely linked to extraversion, thus, it would be beneficial to observe this variable in correlation with the reported extent of self-harm in further research.

The most frequent forms of self-harming behaviour in our sample were deliberate (and with a purpose to harm him/herself) "Abused alcohol to hurt yourself" (N=248; 25.7%), followed by "Not slept enough to hurt yourself" (N=241; 24.9%) and "Tortured yourself with self-defeating thoughts" (N=192 (19.9%). The nature of these types of behaviour clearly do not lead to damage to the skin, which is one of the criteria applied by some authors to define the notion of self-harm. Thus, our sample predominantly consists of forms which would be excluded from other statistics. This has two consequences – the first one is that if damage to the skin is the criterion for a form of behaviour to be considered self-harming, the prevalence values in our sample would also significantly decrease. The second is subject for further discussion, whether, for example, deliberate torturing with self-defeating thoughts with the intention of causing self-harm (or other forms of mental self-torture) should in fact be excluded from the definition of self-harm. We assume that this type of behaviour is truly a form of self-harm and it may even have a greater long-term negative impact on an individual's mental health than cutting or burning (building healthy self-esteem takes longer than healing a cut). In this context, it would certainly be beneficial to initiate a discussion in the scientific community on the tendency for the fifth edition of DSM-5 to define non-suicidal self-harm as a form of behaviour leading to: "self-inflicted damage to the surface of his or her body of a sort likely to induce bleeding, bruising, or pain" [4; p. 803]. Our sample equally proves that forms of mental self-harm are common and the spontaneous responses of adolescents who listed other forms of self-harming behaviour (not included in the questionnaire) clearly show that there are more types of self-harm (e.g., "I strongly underestimated myself", "I provoked negative feelings by listening to sad music" etc.) and that even the individuals themselves consider them to be forms of intentional self-harm. A decisive aspect in the discussion of whether alcohol abuse or reduced self-esteem are forms of self-harming behaviour is the identification of the purpose of such behaviour, so that it is not confused with similar types of high risk behaviour (e.g., starved to lose weight, over-exercised to

rapidly increase muscle mass etc.). Provided that the motive of such behaviour is primarily an effort to harm oneself and the form is a mere tool and not the goal, we believe that this type of behaviour can be defined as self-harming. In this respect we suggest that further studies to observe the forms and prevalence of self-harm should also monitor the motivation for such behaviours, which would facilitate the differential diagnosis of similar forms of high risk behaviour. On the other hand, it should be emphasized that the subjects in our sample completed the SHI questionnaire after the clear instruction that they should select only those activities which they had done "...intentionally, deliberately to cause self-harm...". Moreover, those studies that observe the prevalence of the individual forms of self-harming behaviour should provide space for spontaneous responses, so that other forms are not hidden in the result of the research (e.g. In our sample: "Intentionally causing frostbite", "choking", "vomiting", "walking on hands and knees through pins", ...) and the prevalence of these forms may subsequently be studied.

In the context of differentiating the physical and mental forms of self-harm, it appears that individuals that indulge in mental forms of self-harm differ psychologically from individuals who cause physical self-harm (St Germain & Hooley, 2012). The analysis of this phenomenon may provide the impetus for further studies and may aid in the understanding of the motivation and purpose, as well as the specificities of self-harming behaviour in adolescents. Sex may be one of the specificities – our study sample equally showed that certain forms of self-harm are more typical of women (e.g., "Tortured yourself with self-defeating thoughts") while others are more typical of men (e.g., "Been promiscuous"). Another issue which may trigger future research is whether cross-gender differences in the individual forms of self-harming behaviour show any trend towards direct or indirect (e.g., psychological) forms of self-harm, such as in the case of attempted suicide (Tsirigotis, Gruszczynski & Tsirigotis, 2011).

Conclusions

The presence of a high level of self-harming behaviour in the sample of adolescents shows that this type of high risk behaviour requires the attention of specialists. However, to grasp this problem in a scientific way and provide adequate professional help and care to adolescents, firstly, it is necessary to identify its incidence in the population, relating to the comorbidity and aetiology, gender and other specifics. These steps are currently hampered by the very vague definition of what should be considered as self-harming behaviour. The next steps taken in the research into this issue should therefore clearly lead to 1/ the identification of the forms of high risk behaviour and their occurrence; 2/ a suggested definition for the concept of self-harming behaviour that would cover all the common forms of self-harm; 3/ the creation of a methodology

that would enable the mapping (measurement) of the occurrence of the various forms of self-harm, and 4/subsequent research into the various relevant issues (e.g., aetiology, comorbidity, possible categorization, but also in prevention and treatment).

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