

ICEEPSY 2014

Personality characteristic of adolescent self-harmers

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Abstract

The study, a part of a large-scale project “Validation of tools for screening of self-harm in early adolescents”, explored the associations between the occurrence of self-harm and adolescent personality. Out of the large sample of 1,026 respondents, 43.2% ($n = 443$) reported at least one experience with self-harm. The prevalence was somewhat larger in girls ($n = 139$, 31.4%) than boys ($n = 102$, 23.0%). The average age at the first experience with self-harm was 12.6 years.

The questionnaire, administered in a single session, contained the Self-Harm Behavior Questionnaire (Gutierrez, 1998), the Self-Harm Inventory (Sansone, Sansone & Wiederman, 1995), and a Czech adaptation of Eysenck’s personality inventory for children B-JEPI (Senka, 1994). The results suggested intriguing gender differences in the associations between self-harm and teenagers’ personalities. Girls scored significantly higher on neuroticism than boys in all self-harm frequency groups. Conversely, boys showed higher levels of psychoticism, regardless of self-harm experience. Both neuroticism and psychoticism correlated positively with the occurrence self-harm, which means that children’s personality may play an important role in transition from episodic to recurring self-harm. The interaction effects of either neuroticism or psychoticism and gender on self-harm were not significant, suggesting that the two traits are positively associated with self-harm behaviour in boys and girls more-or-less equally. Although the direction of causality cannot be inferred from the present data, levels of neuroticism and psychoticism can serve as important risk indicators and help target prevention and intervention strategies at young adolescents who are at the highest risk of developing self-harm.

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Peer-review under responsibility of the Organizing Committee of ICEEPSY 2014.

Keywords: personality characteristic; neuroticism, psychoticism, self-harm; adolescence; gender

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1. Introduction

For a long time, self-harm has been approached as a specific symptom of mostly suicidal behaviour. Any form of injury inflicted on one's own body used to be associated with a person's desire to end their own life. This stereotypical view led psychologists and psychiatrists to routinely subsume self-harm under the symptomatology of various mental disorders, the most widely diagnosed being the borderline subtype of emotionally unstable personality disorder (Suyemoto, 1998; Evren & Evren, 2005; Messer et al., 2008). More recently, however, research on non-clinical population has shown that especially in adolescents self-harm can be widely found as a completely independent phenomenon (Janis & Nock, 2008, etc.) with its own particularities and a complex biological, personality-based and social aetiology. In adolescence, the effect of these interacting negative factors can be further amplified by dramatic physical and psychological changes, and self-harm behaviour may become a part of the coping mechanism for relieving the tension resulting from these changes. That self-harm has become a major problem is especially documented by its high prevalence among adolescents, which is reported to be approximately 20-40%, depending on the methodology used.

Before adolescent self-harm can be understood more deeply, it needs to be distinguished from suicidal behaviour. Just like self-harm, adolescent suicidal behaviour is a serious problem which requires attention on the part of researchers, and many authors still link these two phenomena together (Hawton, Houston & Townsend, 2001), especially because many risk factors are identical for both problems. Yet, some of them are exclusive for either one or the other. Hawton et al. (2001) cite several risk factors of self-harm, some of which are also associated with suicidal behaviour (low socioeconomic status, parents' divorce, self-harm/suicidal attempts in family history, bullying (i.e. Slaninová, Haviger, Novotná et al.), interpersonal problems, etc.). However, self-harm also differs from suicidal behaviour in many respects. One of them is gender representation (self-harm is more prevalent among women while suicidal attempts are more frequent in men). Suicidal behaviour is also very rare in children and adolescents below 15 years of age; with self-harm, on the other hand, the boundary is much lower – around 12 or sometimes even less (Bertolote & Fleischmann, 2002). Still, some studies do not sufficiently distinguish between these two phenomena and treat acts of self-harm and suicidal attempts as members of the same category (Wong, Brower & Zucker, 2011). This approach might be rather confusing, as it follows from the very definition of self-harm that the behaviour is not aimed at ending one's own life, although it may precede suicidal attempts in some cases. For example, Klonsky (2009) in his study on social contexts of self-harm found that individuals who harmed themselves in private ran a higher risk of suicidal ideation and suicidal attempts later on. Moreover, Laye-Gindhu & Schonert-Reichel (2005), who studied non-suicidal self-harm in adolescents, reported that as much as 89% respondents who had previously attempted suicide were also self-harmers. For this reason, we consider it necessary to study the context of self-harm from as wide a perspective as possible to provide a solid groundwork for adequate preventive measures. Due to considerable terminological inconsistencies found in research literature devoted to self-harm, in the present study, we define self-harm as culturally unacceptable deliberate injury inflicted on one's own body without a conscious suicidal attempt (i.e. an intention to die, Burešová, Steinhäusel, & Havigerová, 2012).

2. Background

The differentiation between self-injurious behaviours with and without the intention to die brought considerably more light to the issue of self-harm and improved the accuracy of research findings. Suddenly, a group of people emerged who hurt their own bodies, but did not wish to take their own lives. This raised a logical question: What is the meaning and purpose of such behaviour? There are many studies dealing with the antecedents of self-harm (Suyemoto & MacDonald, 1995; Dervic et al., 2004; McMahon et al., 2010, etc.) and many dealing with its functions (Herpetz, 1995; Gross, 1999; Klonsky, 2009, etc.). But how much do we actually know about the personality profiles most susceptible to this maladaptive behaviour? Which traits impel people to take sharp objects and use physical pain as a means of relieving emotional pain? Research on factors influencing self-harm offers many alternative explanations, but no definite conclusions. One personality trait that is often mentioned in connection with self-harm is impulsivity (Gunter et al., 2011; Evren et al., 2005; Dir et al., 2012; Yusainy & Lawrence, 2014, and others), which leads to rush reactions and is also typically associated with the borderline personality disorder discussed above. Such a trait fits the profile of self-harm perfectly, especially in adolescence, a

period of dramatic changes. A number of authors view self-harm primarily as an impulsive reaction to emotional distress, providing an immediate alleviation. In our opinion, however, the issue should be explored more deeply, as self-harm behaviour probably has roots in many sources, including biological factors (abnormal psychophysiological response to damage, impaired metabolism of serotonin and endorphins, etc.), personality dispositions (temperament, alexithymia, trait depression, impulsivity, mental disorders, distorted body image, etc.), and social and environmental conditions affecting the adolescents during their particularly demanding developmental period (dysfunctional family, disrupted relationships with peers, academic underachievement, etc.).

Undoubtedly, adolescents use self-harm as a means of coping with a whole range of negative experiences like anxiety, depression, or stressful events (see Kvermo & Rosenvinge, 2009). Hawton et al. (1999) and Gunter et al. (2011) argue that anxiety, depression and hostility are the strongest risk factors and predictors of chronic self-harm. Self-harmers experience all of these negative emotions (especially anxiety, aggression, depressive mood and hostility) more frequently than non-self-harmers do (Brown, 2009): In fact, these experiences can become the leading cause of self-harming episodes, as self-injuries can momentarily mitigate the impact of emotional distress (Fliege et al., 2009). Nevertheless, how can one explain the self-harmers' lack of fear of pain they inflict on themselves? Even a single minor cut can startle a mentally healthy individual and discourage him/her from proceeding with deliberate self-injury. Do these people truly hurt themselves because it gives them pleasure and relief, or do they actually do this to simply *feel something* because they are emotionally empty? After all, alexithymia has also been associated with self-harm (e.g., Zlotnick et al., 1996; Paivio & McCulloch, 2004), and it has been suggested that self-harmers might be unable to deal with their emotions in any way other than self-injury. In accordance with this reasoning, Zlotnick et al. (1996) found relatively high prevalence of alexithymia in female self-harmers, while Evren & Evren (2005) reported that self-harmers had often problems identifying and describing their own emotions.

All of these personality-based correlates of self-harm have already been well-established by empirical research. However, a majority of studies focusing on self-harm from the personality perspective have been conducted on adult, mostly clinical population (Williams & Hassanyeh, 1983; Brown, 2009; Bahramizadeh & Ehsan, 2011). Research literature covering a sufficiently large body of data from children and adolescents is still lacking. If we use these findings on adult samples as an analogy for younger populations, we would expect the occurrence and chronicity of self-harm to be associated with the traits of psychoticism and neuroticism. The main objective of the preset study is to test this assumption, also from the perspective of potential gender differences.

3. Method

The study was a part of a large research project "Validation of tools for screening of self-harm in early adolescents". In accordance with the research objectives, what we were interested in were quantitative, exploratory data, best obtainable through a one-shot cross-sectional survey using self-report measures. The measures of self-harm included the Self-Harm Inventory (SHI; Sansone, Sansone & Wiederman, 1995) and the Self-Harm Behavior Questionnaire (SHBQ; Gutierrez, 2001). The original version of the SHI asks about the respondent's experience with 22 different forms of self-harm and the frequency of their occurrence in the respondent's personal history. With each item, the respondents indicate whether and how many times they have engaged in the given form of self-harm. For the purpose of our study, we excluded all items which were inadequate for the target population (e.g., "Lost job on purpose"). The final version was only 14 items long. The scale has a high reported internal consistency of about .89-.90 (Sansone et al., 1998; 2010). The SHBQ (Gutierrez, 2001) measures self-harm and suicidal behaviour. The author intended the questionnaire for young people of a nonclinical background. With respect to our research objective, only Scale I, measuring self-harm behaviour, was included in the survey. The other sections, which address suicidal behaviour, were omitted. The selected section contains screening items asking whether the respondents have ever hurt themselves, what their reasons were for doing so and how old they were at the time. The scale we used contained 11 items, some of which were yes/no questions, some were multiple choice questions, and one was a free response question. The author of the scale reported an internal consistency of .95. Other measures included a set of items addressing various issues relevant to the research focus described above.

As a personality measure, we used a Czech adaptation of the Eysenck Personality Inventory for children B-JEPI (Senka, 1994), consisting of 78 items. In addition to the three main scales measuring neuroticism, extroversion and

psychoticism, the inventory contains a Lie scale which partly measures dissimulation, indicated by the correlation between the L-scale and the N-scale. Because the correlation was generally low in the present sample ($r = -.19$, $N = 938$, $p < .01$), we did not find it necessary to correct for dissimulation by excluding respondents.

3.1. Data Collection

The data was collected through random sampling, with an increased emphasis on ethical issues involved. First, a pilot study ($N = 235$) was conducted, successfully validating basic psychometric properties of the research tools used. In the next stage, the questionnaire was administered to a large sample of 1,466 adolescent respondents aged between 11-16 years. Prior to the data analysis, the obtained sample was balanced in terms of age and gender, to contain an equal number of boys and girls, and an equal number of 13-, 14- and 15-year-olds. The pruned sample consisted of 1,026 respondents. Personal experience with self-harming behavior was self-reported in 43.2% respondents ($N = 443$); the average age at the time of first experience was 12.6 years.

4. Results

4.1. Occurrence of self-harm by gender and age

The information on the occurrence of self-harm obtained by the SHI Section IV was used to divide the respondents into three groups: respondents who had no experience with self-harm at all (“Non-self-harmers”), respondents who harmed themselves no more than 4 times (“Experimenters”), and respondents whose experience with self-harm exceeded 4 cases (“Self-harmers”). The distribution of the three types by gender is shown in Table 1.

Table 1: Occurrence of self-harm by age

	Gender	<i>n</i>	%	Cummulative %
Non-self-harmers	Girls	252	24.6	24.6
	Boys	331	32.3	56.9
Experimenters	Girls	122	11.9	68.8
	Boys	80	7.8	76.6
Self-harmers	Girls	139	13.5	90.1
	Boys	102	9.9	100
Total		1026	100	

Some of the 443 respondents who reported experience with self-harm (Experimenters and Self-harmers) also answered the question about the times of their first and last episodes of self-harm (some of the self-harming respondents omitted the section). The question about the age at the time of first experience with self-harm was answered by 183 (41.3%), and the age of the last experience by 176 self-harming respondents (39.7%). The age at the time of first experience ranged from mere 5 years to 15 years, with a mode of 13 years (43.7%) and an average of 12.6 years. The last episode had mostly occurred at the age of 14 years (37.5%), with an average of 13.6 years.

4.2. Occurrence of self-harm in relation to personality

To examine potential personality differences between the three self-harm occurrence groups, we used one-way ANOVA, Brown-Forsythe test and Games-Howell post-hoc test. While we found no association between self-harm occurrence and extraversion, significant differences in neuroticism and psychoticism were observed between all three groups. The average scores of neuroticism in Non-self-harmers, Experimenters and Self-harmers were 11.13 ($sd = 4.33$), 13.36 ($sd = 4.27$) and 14.76 ($sd = 3.67$), respectively. For psychoticism, the mean scores were 4.47 ($sd = 2.73$), 5.69 ($sd = 2.91$) and 6.47 ($sd = 3.30$), respectively. The results of the post-hoc tests, summarized in Tables 2 and 3, show that all of the differences were significant.

Table 2: Differences between self-harm occurrence groups in Neuroticism (Games-Howell post hoc test)

(I) Self-harm	(J) Self-harm	Mean difference (I-J)	SE	p	95% Confidence interval	
					Lower	Upper
Non-self-harmers	Experimenters	-2.229*	.367	.000	-3.09	-1.36
	Self-harmers	-3.631*	.309	.000	-4.36	-2.90
Experimenters	Non-self-harmers	2.229*	.367	.000	1.36	3.09
	Self-harmers	-1.402*	.401	.002	-2.34	-.46
Self-harmers	Non-self-harmers	3.631*	.309	.000	2.90	4.36
	Experimenters	1.402*	.401	.002	.46	2.34

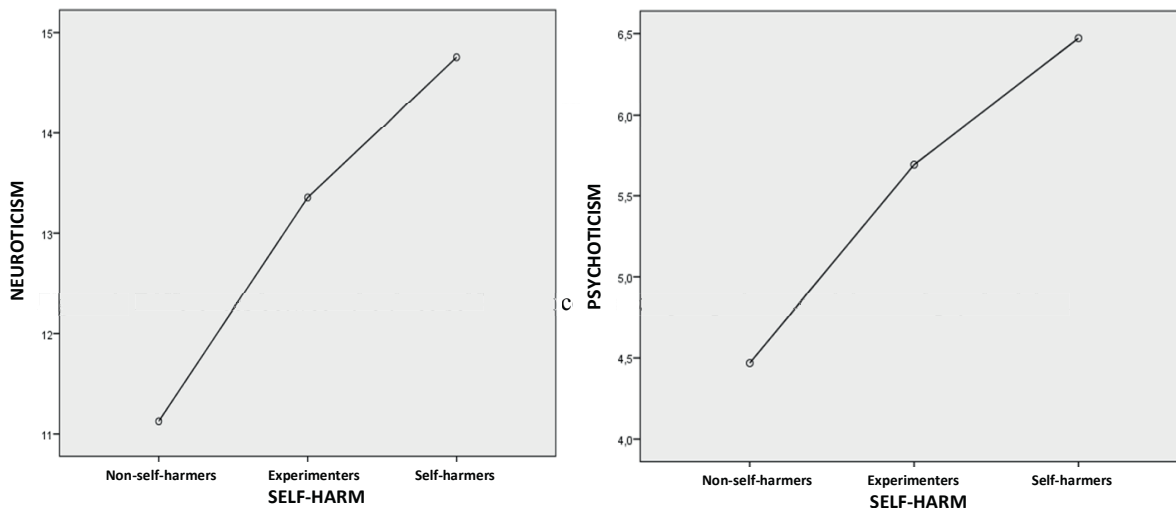
* The difference is significant at the level of $p < .05$.

Table 3: Differences between self-harm occurrence groups in Psychoticism (Games-Howell post hoc test)

(I) Self-harm	(J) Self-harm	Mean difference (I-J)	SE	p	95% Confidence interval	
					Lower	Upper
Non-self-harmers	Experimenters	-1.223*	.252	.000	-1.82	-.63
	Self-harmers	-2.003*	.257	.000	-2.61	-1.40
Experimenters	Non-self-harmers	1.223*	.252	.000	.63	1.82
	Self-harmers	-.780*	.318	.039	-1.53	-.03
Self-harmers	Non-self-harmers	2.003*	.257	.000	1.40	2.61
	Experimenters	.780*	.318	.039	.03	1.53

* The difference is significant at the level of $p < .05$.

The differences are concisely illustrated by Figure 1.



4.2. Effect of gender on the relationship between self-harm and personality

We used factorial (two-way) ANOVA to test for possible interaction effects of gender and self-harm occurrence on personality. Again, there were no significant differences regarding extraversion. However, male and female adolescents differed significantly in both neuroticism and psychoticism: While boys scored higher than girls in psychoticism at all three self-harm occurrence levels, the opposite was true of neuroticism, in which girls scored significantly higher than boys. The results are illustrated in Figure 2.

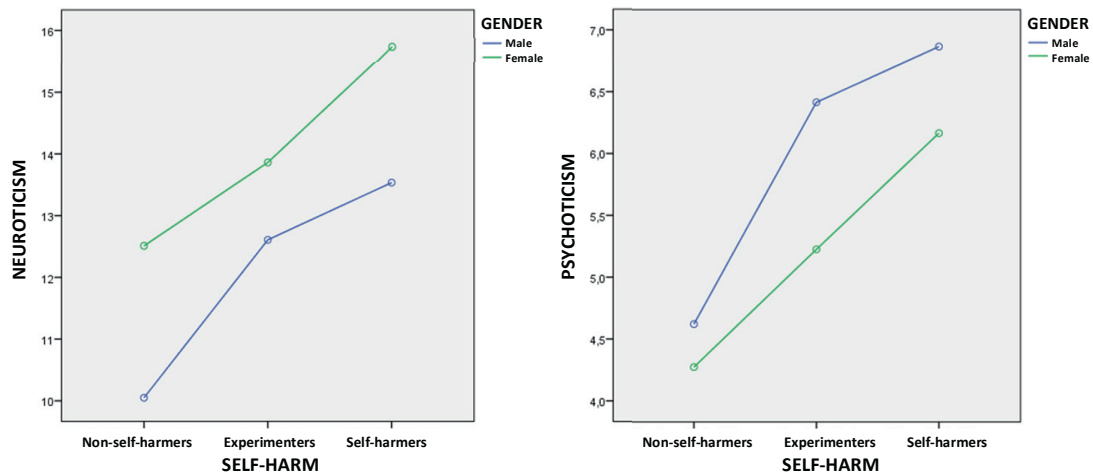


Figure 2: Differences between the three self-harm occurrence groups in neuroticism and psychoticism separately for boys (blue) and girls (green)

The test of between-subject effects showed that differences between self-harm occurrence groups explained 11% of variance in neuroticism. The effect of gender was also significant ($F(1, 932) = 44.49, p < .05$) and explained 4.6% of variance in neuroticism, with girls scoring higher ($m = 14.04, sd = .20$) than boys ($m = 12.06, sd = .22$). The interaction effect of gender and self-harm on neuroticism was not significant ($F(2, 932) = 1.48, p = .23$).

Differences between self-harm occurrence groups also explained 8.6% of variance in psychoticism. The effect of gender was significant in this case as well ($F(1, 901) = 11.61, p < .05$), although it explained only 1.3% of variance. Boys scored higher in psychoticism ($m = 5.97, sd = .17$) than girls ($m = 5.22, sd = .14$). Again, the interaction effect of gender and self-harm was non-significant ($F(2, 901) = 1.37, p < .25$).

5. Conclusion

Out of the 1,026 adolescents who participated on our study, 241 (23.4%) reported repeated experience and 202 (19.8%) experimental experience with self-harm. The total prevalence of self-harm was therefore 43.2% ($n = 443$), with girls ($n = 261, 25.4%$) outnumbering boys ($n = 182, 17.7%$). This is consistent with previous findings, which indicate that gender differences in self-harm do occur in adolescence (Hawton, 2002; Spender, 2007; Morgan et al., 2012, etc.). The respondents were aged between 13 and 15 years with an average of 14 years, as the sample was balanced in terms of age and gender to prevent potential bias. The most frequently reported age of first experience was 13 years (43.7%); the average age was 12.6, which is also in accordance with previous research findings (Favazza, 1987; Lieberman, 2004; Whitlock et al, 2006, etc.).

The most frequent and the average age of the first experience with self-harm fall into the late preadolescent period, which can be caused by many factors: increased expectations by others, upcoming transition to a higher level of education, career choice and responsibility associated with it, but also shaky emotions, conflicts with parents and peers, search for ways to clarify and strengthen one's vague identity, unstable self-confidence, and radical perspective of the world stemming from general immaturity. Adolescents gradually begin to lose the status of

children who are always protected: they are required to take more and more responsibility for different tasks and chores, while the world still mostly treats them as children when it comes to rights and freedoms. This ambiguity can lead to dissatisfaction and frustration and produce negative emotions which, in turn, facilitate the onset of self-harm behaviour. In the present study, we found an association between the occurrence of self-harm and neuroticism: Non-self-harmers ($M = 11.13$, $sd = 4.33$) scored lower in neuroticism than Experimenters ($M = 13.36$, $sd = 4.27$), who scored lower than chronic Self-harmers did ($M = 14.76$, $sd = 3.67$). These results agree with previous findings (e.g., Williams & Hassanyeh, 1983; Klonsky et al., 2003; Brown, 2009) and indicate that people who have harmed themselves during their lifetime are more predisposed for experiencing intense negative affect in the form of anxiety, anger, or depression. Moreover, a number of studies point to the low ability of self-harmers to manage such negative emotions (e.g., Herpetz, 1995; Brown, 2009). Higher degree of neuroticism and lower self-control are prospectively associated with risky behaviour in relation to the health as the addictive substance abuse (Dosedlová, Slováčková & Klimusová, 2013).

Apart from neuroticism, the occurrence of self-harm in our study was also associated with psychoticism, with Self-harmers ($M = 6.47$, $sd = 3.29$) showing higher scores than Experimenters ($M = 5.69$, $sd = 2.91$), who scored higher than Non-self-harmers ($M = 4.47$, $sd = 2.73$). Typical features of psychoticism include impulsivity and aggressiveness – two characteristics which are often mentioned in connection with self-harm (Evans et al., 2004; Carli et al., 2010; Evren et al., 2005; Dir et al., 2013, etc.). Higher levels of psychoticism in self-harmers might, for example, increase the number and severity of interpersonal conflicts, which might result in increased distress on the one hand and the absence of soothing social support on the other, triggering self-harm episodes. It can be also speculated that individuals who score above-average in psychoticism are more likely to develop rather disorganized approach to coping with negative experience, and self-harm might be a feature of this disorganization.

There were significant gender differences in both personality variables discussed above: While girls scored higher in neuroticism than boys, the opposite was true of psychoticism. These differences held across all three self-harm occurrence groups. In both genders, the two traits were positively associated with self-harm. Gender differences in psychoticism can be explained biologically: Testosterone is a dominant hormone in males, and testosterone levels are typically associated with aggression, impulsivity, thrill-seeking, as well as other facets of psychoticism (Eysenck, 1992). In western society, the development of these traits is further supported in boys through traditional parenting approaches: Even today, boys are expected to be more assertive, efficient, and risk- and sensation-oriented than girls; in other words, they are guided towards action. In contrast, girls are taught to be caring, empathic and tolerant – the society wants them to be more emotion-oriented. This might also explain why girls scored higher in neuroticism in our study. Neuroticism represents the emotional stability – instability dimension. High neuroticism means high tendency to experience strong emotions which are difficult to distract. What is more, girls with regular menstrual cycle have to undergo regular hormonal disturbances, which might lead to mood swings. It can therefore be argued that essential biological processes and social influences both make girls more predisposed to neuroticism than boys.

Neither neuroticism, nor psychoticism was predicted by the interaction between gender and self-harm occurrence. This means that despite general temperament differences between boys and girls, the relationships between neuroticism/psychoticism and self-harm were similarly positive regardless of gender. Again, this corresponds with previous findings (e.g., Williams & Hassanyeh, 1983; Nathanson et al., 2006; Brown, 2009). The absence of a relationship between extroversion and self-harm occurrence was in accordance with the results reported by Brown (2009).

Even though causality cannot be inferred from the present cross-sectional data, the level of child neuroticism and psychoticism can be used as an indicator of increased risk of self-harm and help in focusing prevention and intervention strategies on the most vulnerable population of adolescents.

5.1. Limitations

Apart from the common limitations of self-report surveys, such as subjective responding, data verifiability, etc., there are several specific problems in this type of research. One of them is social stigmatization, potentially connected with the status of a self-harmer. Because the data are typically collected through group administrations in the class, absolute privacy in responding cannot be completely ensured, which means that the data might become

somewhat biased by social desirability. The students might also be distrustful of the researchers' promise of anonymity and provide untruthful data out of fear that the information will be passed on to their teachers and/or parents. A specific category is constituted by the problem of comparability of research findings across studies, which often yield different results due to terminological inconsistency typical of this research area, extreme differences in research samples (nonclinical v. clinical population, adults v. adolescents, etc.), or unequal methodological choices (self-harm questionnaires v. single-item responses).

5.2. Further research and applications

Information gathered in the present study can be found useful by parents, teachers, doctors, psychologists, and other professionals working with preadolescents and early adolescents. It may help in early detection of a serious behavioural problem, construction of effective prevention programmes at schools, and identification of children who are at the highest risk of self-harm. We also believe that further research should focus on deeper exploration of the role of different personality factors in self-harm occurrence, preference for specific forms of self-harm, and young people's motivation for this maladaptive behavioural strategy.

Acknowledgment: Funding for the study was provided by the Specific Research grant programme of Masaryk University, project no. MUNI/A/0887/2012.

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