Eur Child Adolesc Psychiatry
DOI 10.1007/s00787-016-0840-7

ORIGINAL CONTRIBUTION

Association between victimization by bullying and direct self injurious behavior among adolescence in Europe: a ten-country study

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Received: 7 July 2015 / Accepted: 7 March 2016

Abstract Previous studies have examined the association between victimization by bullying and both suicide ideation and suicide attempts. The current study examined the association between victimization by bullying and direct-self-injurious behavior (D-SIB) among a large representative sample of male and female adolescents in Europe. This study is part of the Saving and Empowering Young Lives in Europe (SEYLE) study and includes 168 schools, with 11,110 students (mean age = 14.9, SD = 0.89). Students were administered a self-report survey within the classroom, in which they were asked about three types of victimization by bullying (physical, verbal and relational) as well as direct self-injurious behavior (D-SIB). Additional risk factors (symptoms of depression and anxiety, suicide ideation, suicide attempts, loneliness, alcohol consumption,

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Published online: 24 March 2016

drug consumption), and protective factors (parent support, peer support, pro-social behavior) were included. The three types of victimization examined were associated with D-SIB. Examination of gender as moderator of the association between victimization (relational, verbal, and physical) and D-SIB yielded no significant results. As for the risk factors, depression, but not anxiety, partially mediated the effect of relational victimization and verbal victimization on D-SIB. As for the protective factors, students with parent and peer support and those with pro-social behaviors were at significantly lower risk of engaging in D-SIB after being victimized compared to students without support/pro-social behaviors. This large-scale study has clearly demonstrated the cross-sectional association between specific types of victimization with self-injurious behavior among adolescents and what may be part of the risk and protective factors in this complex association.

Keywords Victimization · Bullying · Direct self-injurious behavior · Adolescents

Introduction

Both victimization by bullying and suicide are public health issues among adolescents [1]. Self-harming behaviors have been classified in various terms including Deliberate Self-Harm (DSH), Non Suicidal Self injury (NSSI), and Direct Self Injurious Behaviors (D-SIB). D-SIB is the term we use in the current study and is defined as intentional self-inflicted damage to the surface of an individual's body, which includes self-cutting, burning, biting, hitting, and skin damage by other methods, regardless of the suicidal intent [2]. Although the association between suicidal and NSSI is controversial and these may overlap [3, 4], D-SIB has a distinct definition [2]. Many previous studies have examined the association between victimization and suicide outcomes (see two reviews [5, 6]). The aim of the current study was to focus on the association between victimization and D-SIB.

Overall lifetime prevalence of D-SIB in youths in Europe has been found to be 27.6 %, while 19.7 % report occasional D-SIB and 7.8 % report repetitive D-SIB [2]. Victimization by bullying is defined as repeated exposure to unwanted aggressive behavior on the part of one or more persons who have more power than does the victim [7]. Population-based studies indicate that about 10 % of youth are involved in bullying as victims [8]. There are different types of victimization by bullying including physical, verbal and psychological/relational [7]. Victimization by bullying is associated with adverse outcomes [9].

Many studies have examined the association between victimization by bullying and both suicide ideation [10–12] and suicide attempts [11, 13, 14]. Few studies, however, have examined the association between bullying and SIB, with and without suicidal intent [13, 14]. Moreover, only few studies have examined risk and protective factors which play a role in the association between victimization and SIB [15]. These include depression [16], anxiety [17], suicide ideation [18] suicide attempts [16], loneliness [17], and alcohol/drug consumption [19]. In addition, not all studies examined gender differences in the association between victimization and SIB [20].

Studies have reported mixed findings regarding the gender differences in the association between victimization and SIB. Luukonen [13] for example, found that between both genders there was no association between victimization and SIB. Heilbron and Prinstein [21], however, have found that the genders differ in the association. Boys who were victims of overt aggression were more likely to report NSSI compared to those who were not victims while girls who were overtly victimized were less likely to engage in NSSI.

Victims may use D-SIB after victimization as a coping mechanism since they have deficits in adaptive coping skills. According to a few theoretical models, adolescents may respond to challenging or stressful events with affective or social dysregulation, creating a need to use self-harm [22, 23]. Plutchik's [24] two stage model assumes that when adolescents are threatened/insulted and angry by the stressor/trigger (e.g. after victimization by bullying) they may respond in hurting themselves (SIB) or hurting others (violence). Plutchik suggested in his model that there are several factors that determine the direction aggression takes (inward vs. outward). Specifically, in the presence of aggressive impulses, and other possible triggers, it was demonstrated that depression turns aggressive impulses into inwardly directed aggression, such as self-injury.

In addition, studies have shown that depression [25, 26] and anxiety [17] may be important mediators in the association between victimization and SIB. It may be that victimization leads to depression/anxiety and thereafter depression/anxiety lead to D-SIB [26, 27]. Interestingly, however, not all children who experience victimization engage in SIB. Protective factors that have been studied in the association between victimization and SIB include, among others, parent and peer support [26, 28]. Studies have found that these protective factors may reduce the outcomes of victimization such as depression and SIB [12].

To date only a few studies have examined specific types of victimization and their association with SIB. One study by Mossige [14] has found that verbal victimization had stronger effects on SIB compared to physical victimization. The study by Heilbron and Prinstein [21] found that overt victimization was concurrently associated with NSSI.

The current study aimed to examine the association between victimization by bullying and D-SIB among a large representative sample of male and female adolescents in Europe. Specifically, we examined this association of different types of victimization (physical, relational, and verbal) and D-SIB as well as the role of various risk and protective factors. We made the following hypotheses: (1) all three types of victimization (physical, verbal, relational) will be associated with D-SIB. Possible gender differences will be examined but as literature does not give clear basis to expect whether the associations between victimization by bullying would be stronger in girls or in boys, we leave the hypothesis open in this matter. (2) Depression and anxiety will mediate the association between victimization and D-SIB. (3) Social support, family support and pro-social behavior will moderate this association.

Methods

Data was collected as part of the Saving and Empowering Young Lives in Europe (SEYLE) study. The SEYLE is a cluster randomized controlled trial (German Clinical Trials Register DRKS00000214) which evaluated the efficacy of school-based preventive interventions for suicidal behavior. Ten EU countries took part in the SEYLE study, including Austria, Estonia, France, Germany, Hungary, Ireland, Italy, Romania, Slovenia and Spain, with Sweden, National Centre for Suicide Research and Prevention of Mental Ill-Health (NASP) at Karolinska Institute as coordinating center. The full protocol of the study and the characteristics of the sample have previously been published [29, 30].

Participants

168 schools, 72 % of the 232 schools approached, agreed to participate in the study and 1722 students were absent at baseline assessment. Therefore, the current study included 11,110 students. Schools in the SEYLE study were considered eligible if they were public, contained at least forty 15-year-old students, had more than two teachers for students 15 years of age and no more than 60 % of the students were of the same gender. Schools were from ten study sites, in ten different countries. All students in classes where the majority of students were 15 year old were considered eligible for participation.

Measures

Participants were administered a self-report survey, conducted in the classroom, in which they were asked about victimization/bullying, D-SIB, risk factors (symptoms of depression and anxiety, suicide ideation, suicide attempts, loneliness, alcohol consumption, drug consumption), and protective factors (parent support, peer support, pro-social behavior).

Victimization by bullying: assessed using ten yes/no questions about various types of victimization in the last 12 months. Three variables were created indicating three different types of victimization: physical (e.g. "others pushed, hit or kicked you"), verbal (e.g. others called you names) and relational (e.g. others spread rumors about you). For each question 0 was no and 1 indicated yes. For each type of victimization a total was computed and if it was greater than one event, the student was considered to be a victim of that type of victimization.

D-SIB: 6-item questionnaire which refers to the intentional self-inflicted damage of the surface of an individual's body by self-cutting, burning, hitting, biting, and skin damage by other methods [2]. This questionnaire is based on previous questionnaires [31–33]. The D-SIB variable was categorized into "lifetime", "occasional" (1–4 reported lifetime acts of D-SIB) and "repetitive" (5 or more previous events of D-SIB acts during lifetime). The cut-off of ≥ 5 has been chosen according to DSM-5 [34].

Comorbid risk behaviors and psychopathology: assessed using questions from the Global School-Based Student Health Survey (GSHS) (WHO [35]), the Beck Depression Inventory II (BDI-II) [36], the Zung Self-Rating Anxiety Scale (SAS) [37], and the Strengths and Difficulties Questionnaire (SDQ) [38]. Suicidal ideation, suicidal plans and suicide attempts were measured by Paykel Suicide Scale (PSS) [39]. High Loneliness was dichotomized to responses 4 ("most of the time") or 5 ("always") to the item "During the past 12 months, how often have you felt lonely?". Alcohol consumers were defined as students reporting having consumed alcoholic drink 2 or more times per week in the last 12 months. Drug consumers were defined as participants reporting 3 or more occasions of drug use during their lifetime.

Protective factors: data on parental support included 7 items (e.g. parents understand problems). Social support included 3 items (e.g. get along with people of your own age). The pro-social behavior was measured by the prosocial subscale of the SDQ (e.g. try to be nice).

All psychosocial variables, except parental support, peer support and pro-social behavior, were dichotomized according to cut-off criteria previously defined and published for the SEYLE study [29]. Defined cut-offs for all variables had been established to sensitively detect at-risk students. Means were used for the three protective factors. See Appendix for all questions and scales.

Statistical analyses

The outcome variable in all general analysis was (a) life-time D-SIB (yes/no) and (b) D-SIB categorized as no/occasional/repetitive. The independent variables were the three kinds of victimization (verbal, physical and relational), risk factors (symptoms of depression and anxiety, suicide ideation, suicide attempts, loneliness, alcohol consumption, drug consumption), protective factors (parent support, peer support, pro-social behavior) and gender. Logistic regression was used with dichotomized outcome, producing odds ratios (OR) that are presented with 95 % confidence intervals. Multinomial regression was used with categorized outcome, providing relative risk ratios (RRR) that are presented with 95 % confidence intervals. Missing data were handled with the multiple imputation procedure [40]. Gender was examined as moderator of the association between victimization (relational, verbal, and physical) and D-SIB using the SPSS macros that Hayes [41] provides for examining moderation with dichotomous variables.

Finally, preliminary mediation and moderation of the risk and protective factors were examined through a series of multiple logistic regressions. For the preliminary mediation analyses, we used victimization (verbal/physical/relational) as the independent variable, depression and anxiety (risk factors) as the mediators and lifetime D-SIB as the dependent variable. We used the Sobel test to assess whether the indirect effect of victimization on D-SIB through depression/anxiety were significant. The Sobel test is a specialized *t* test that provides a method to determine whether the reduction in the effect of the independent variable, after including the mediator in the model, is a significant reduction and therefore whether the mediation effect is statistically significant [42].

For the moderation analyses, we used the SPSS macros that Hayes provides [41]. Victimization (verbal/physical/relational) was the independent variable, parental support, peer support and pro-social behavior (protective factors) were the moderators and lifetime D-SIB was the dependent variable.

Results

The association between victimization by bullying and D-SIB

The associations of victimization and other psychosocial correlates with D-SIB are presented in Table 1. All three types of victimization (physical, verbal, relational) were associated with life-time D-SIB in the multivariate regression model. Similarly, gender and all the risk factors (except for loneliness) had an independent effect. Among the protective factors, only parental support showed an independent protective effect. Examination of gender as moderator of the association between victimization (relational, verbal, and physical) and D-SIB yielded no significant results ($p = 0.358$, $p = 0.541$, $p = 0.128$).

Occasional and repetitive D-SIB

The three types of victimization and all psychosocial variables in the univariate regression model were significantly associated with both occasional and repetitive D-SIB. RRRs of the risk factors were higher for repetitive D-SIB (RRRs ranging from 39.01 to 3.00 and 0.25 to 0.90) compared with occasional D-SIB (RRRs ranging from 7.64 to 1.79 and 0.94 to 0.52). In the multivariate regression model, anxiety and loneliness were positively associated with only repetitive D-SIB. The other variables were associated with both occasional and repetitive D-SIB.

Depression and anxiety as possible mediators of the association between victimization and D-SIB

Depression

Results indicated that greater relational-related victimization and greater verbal victimization were related to higher likelihood of depressive symptoms (224 % more likely for every one-point increase in the relational victimization score and 161 % more likely for every one-point increase in the verbal victimization score). No significant association was found with physical victimization and therefore no further mediation analysis was conducted with this variable.

Analyses examining the associations between victimization (relational and verbal) and D-SIB indicated that greater relational and verbal victimization were related to higher likelihood to D-SIB (188 % more likely for every 1-point increase in the relational victimization score and 137 % more likely for every 1-point increase in the verbal victimization score). Results of the analysis examining whether the effect of relational and verbal victimization on D-SIB were mediated by depressive symptoms revealed significant results (Sobel test $= 7.33$, $p < 0.001$; Sobel test $= 5.22$, $p < 0.001$). Depression partially mediated the effect of relational victimization (Fig. 1) and verbal victimization (Fig. 2) on life-time D-SIB.

Anxiety

Results indicated that greater relational victimization was related to higher likelihood to anxiety symptoms (132 % more likely for every one-point increase in the relational

Table 1 Association of victimization (physical, verbal, relational), risk and protective factors with D-SIB

	Any life-time D-SIB				Occasional D-SIB				Repetitive D-SIB			
	Univariate analyses		Multivariate analyses		Univariate analyses		Multivariate analyses		Univariate analyses		Multivariate analyses	
	OR	95 % CI	OR	95 % CI	RRR	95 % CI	RRR	95 % CI	RRR	95 % CI	RRR	95 % CI
Risk factors												
Physical victimization	2.51**	2.15–2.93	1.72**	1.42–2.07	2.01**	1.68–2.41	1.55**	1.26–1.90	3.72**	3.02–4.58	2.22**	1.69–2.91
Verbal victimization	2.10**	1.90–2.32	1.33**	1.18–1.50	1.79**	1.59–2.01	1.26**	1.11–1.47	3.00**	2.55–3.54	1.58**	1.29–1.94
Relational victimization	2.78**	2.51–3.08	1.68**	1.49–1.90	2.37**	2.11–2.67	1.70**	1.49–1.99	3.94**	3.35–4.65	1.65**	1.34–2.03
Depression	4.98**	4.40–5.63	2.20**	1.87–2.58	3.22**	2.58–3.71	1.91**	1.59–2.28	11.38**	9.56–13.55	3.14**	2.48–3.98
Anxiety	3.47**	2.97–4.05	1.30**	1.05–1.61	1.92**	1.57–2.34	0.97	0.76–1.24	7.98**	6.57–9.69	2.17**	1.65–2.85
Suicide attempts	16.33**	11.60–23.00	5.15**	3.52–7.54	7.64**	5.16–11.30	3.71**	2.43–5.65	39.01**	27.14–56.09	8.22**	5.34–12.66
Suicide ideation	6.37**	5.03–8.05	2.49**	1.81–3.43	3.22**	2.40–4.32	1.90**	1.32–2.74	14.61**	11.21–19.04	3.57**	2.44–5.21
Loneliness	4.02**	3.30–4.91	1.18	0.91–1.52	2.33**	1.81–2.99	0.98	0.73–1.32	8.39**	6.62–10.64	1.52**	1.10–2.09
Alcohol consumption	2.59**	2.19–3.06	1.84**	1.50–2.25	2.06**	1.69–2.51	1.72**	1.37–2.14	3.86**	3.08–4.83	2.18**	1.62–2.92
Drug consumption	3.96**	3.13–5.00	2.37**	1.80–3.13	2.83**	2.14–3.74	2.05**	1.51–2.79	6.61**	4.96–8.80	3.32**	2.30–4.80
Gender (girls vs. boys)	1.46**	1.31–1.61	1.42**	1.25–1.61	1.37**	1.21–1.54	1.42**	1.24–1.63	1.68**	1.41–1.99	1.41**	1.14–1.76
Protective factors												
Parent support	0.41**	0.38–0.45	0.65**	0.59–0.72	0.52**	0.48–0.58	0.70**	0.63–0.79	0.25**	0.22–0.28	0.51**	0.43–0.60
Peer support	0.57**	0.50–0.64	0.94	0.81–1.09	0.65**	0.56–0.75	0.90	0.77–1.06	0.43**	0.36–0.52	1.06	0.84–1.34
Pro-social behavior	0.93**	0.90–0.95	0.96	0.93–0.99	0.94**	0.91–0.97	0.97	0.93–1.00	0.90**	0.86–0.94	0.94	0.89–0.99

* $p < 0.05$, ** $p < 0.01$

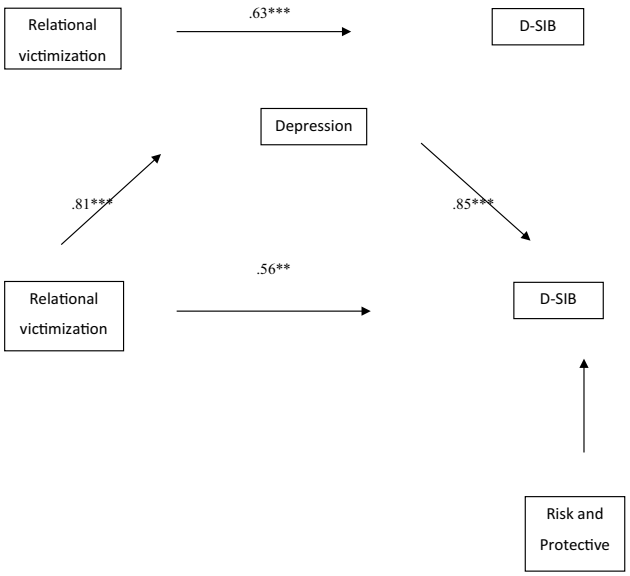

Fig. 1 Relationships between relational victimization, depression and life-time D-SIB

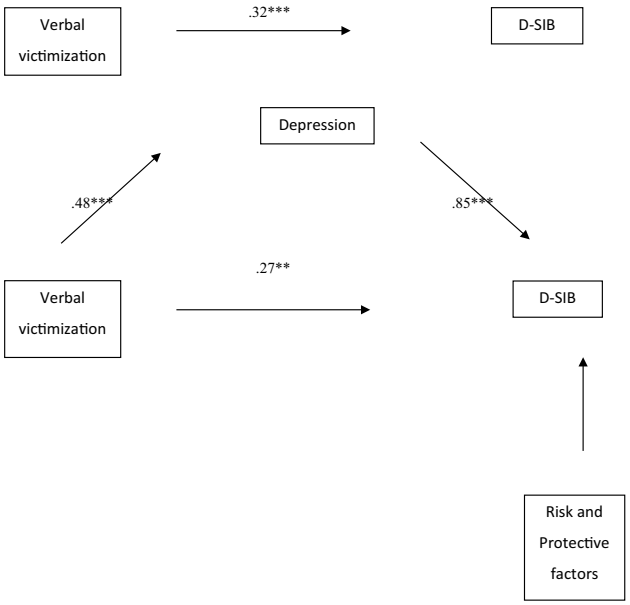

Fig. 2 Relationships between verbal victimization, depression and life-time D-SIB

victimization score). No significant associations were found with verbal and physical victimization. Results further indicated that greater relational victimization was related to higher likelihood to D-SIB (175 % more likely for every one-point increase in the relational victimization score). Finally, the Sobel test result was non-significant (Sobel test = 1.88, p = ns). Therefore, anxiety was not a mediator of the relation between any kind of the victimization and D-SIB.

Protective factors as possible moderators in the association between victimization and D-SIB

In examining our hypothesis that parental support, peer support and pro-social behavior would moderate the association between victimization (relational, verbal, and physical) and D-SIB significant interactions were found for relational victimization X pro-social behavior ($p = 0.002$), and physical victimization X peer support ($p = 0.001$). Students with peer support were at significantly lower risk of engaging in D-SIB after being victimized compared to students without peer support. Similarly, students with higher pro-social behavior were at significantly lower risk of engaging in D-SIB after being victimized compared to students lower pro-social behavior. Because of the multiple comparisons, the statistical significance level for these analyses was of 0.005 ($p = 0.05/9$) after Bonferroni correction.

Discussion

There are three major findings in this large-scale study examining the association between victimization by bullying with D-SIB among European adolescents.

Victimization by Bullying and D-SIB

The first finding, as hypothesized, is that the three types of victimization examined (physical, verbal and relational) were associated with D-SIB. Our findings support previous studies which found that both overt and relational victimization were associated with suicide ideation and SIB [21]. This means that indirect, more subtle forms of victimization are also associated with self-harm. These findings expand results from other areas that victimization is associated with SIB. Similar to victims of sexual [43] and of physical abuse [44] victims of bullying are also at risk for SIB. Interestingly, according to a recent study by Mossige [14], their risk may be even higher compared to the other types of victims. Our study results are different than those of Luukonen [13] which found that bullying was not related to self-mutilation among adolescents. Their results may be different due to the inpatient sample that they studied and the different definitions of self-mutilation and D-SIB. Specifically, Luukonen referred to adolescents in the self-mutilation group if they engaged in repeated NSSI during the last year, or if they had caused serious injury (e.g. broken bone or burn with scarring), while we defined D-SIB in a broader time-frame, referring lifetime acts of D-SIB (occasional or repetitive).

There was a difference between repetitive and occasional D-SIB. Victimization and most of the risk factors were positively associated with both occasional and repetitive D-SIB. Anxiety and loneliness, however, were positively associated with repetitive D-SIB but not with occasional D-SIB. Moreover, victimization and the other risk factors had a higher impact for repetitive D-SIB compared with occasional D-SIB. This finding is in line with previous studies showing that repetitive self-harm is associated with higher loads of psychological problems compared to occasional self-injuries [45]. It is also in line with previous findings indicating that different influencing factors may be present in the development of the repetitive vs non-repetitive SIB [16]. Lastly, it also strengthens the distinction between repetitive and occasional D-SIB a distinction proposed in section 3 of the new DSM-5 [34] for future study. There were no significant gender differences in the association between victimization and D-SIB.

Depression as a mediator

Our second finding partially supports the second hypothesis since depression, but not anxiety, partially mediated the effect of relational victimization and verbal victimization on D-SIB. Our finding that greater relational-related victimization and greater verbal victimization were related to higher likelihood of depressive symptoms and higher likelihood of D-SIB are in line with previous studies [46, 47]. It may be that victims of bullying are more depressed and this depression can trigger their tendency to engage in D-SIB [15]. Depression accounted for only part of the SIB since there may be many other factors involved which were not included in the current study [17].

Support and prosocial behaviors

Our third finding supports the last hypothesis since students with parent and peer support and those with pro-social behaviors were at significantly lower risk of engaging in D-SIB after being victimized compared to students without support/pro-social behaviors. Interestingly, the interaction were with physical and relational victimization which should be further examined. Overall, peer and parent support and pro-social behavior accounted for only part of the association between victimization and D-SIB but it still reduced this association significantly. These findings are in line with previous findings about the importance of parental and peer factors on both victimization and SIB [26, 48, 49]. The peer and parental support strengthen Joiner's interpersonal-psychological theory of suicidality which identifies failed belongingness as one of two proximal predictors of self-harm [50]. Highlighting these factors which promote resilience in victims is important for development of successful interventions. Interventions today include peers and parents but maybe not to the extent it is needed.

Limitations of the study

This study has limitations that should be taken into account. First and foremost, the cross sectional nature of the study does not allow to differentiate cause and effect. Second, since a cross sectional study lacks the element of time, the current results offer only preliminary evidence for the role of depression as a mediator of the relationship between victimization and self-harm. A longitudinal study will define the exact role played by depression. Moreover, we do not know whether the participants were depressed/anxious before the first assessment and therefore it could be that depression or anxiety predisposed the youth to victimization. An alternative explanation maybe that adolescents who self-harm are psychologically unstable and prone to interpret social interactions as malicious, and this could be why they report victimization. Third, data was based on self-reports. Lastly, a definition of victimization by bullying was not provided and the victimization items were dichotomized and therefore we could not examine the frequency of victimization. Despite these limitations, our findings are based on a large representative sample of European adolescents and have important clinical implications. Future studies are needed in order to shed light on our preliminary results about differences between types of victimization (relational, verbal, and physical) with regard to D-SIB. Future studies should also examine other various variables (e.g. substance use) which may mediate the association between victimization and D-SIB.

Conclusions

This study demonstrates the cross-sectional association between victimization by bullying and D-SIB. It adds to a few previous studies which have examined this association by using a large-scale sample, a few types of victimization and various risk and protective factors. This study adds to previous knowledge that victimization by bullying is associated not only with suicidal outcomes [11] but also with D-SIB. Parents, school personal and health practitioners should know about the association between victimization by bullying and D-SIB. Students screened for bullying should be routinely asked about D-SIB. Similarly, students screened with D-SIB, should be screened for being victimized. Preventive efforts might need to include both types of behaviors.

Acknowledgments The SEYLE project is supported through Coordination Theme 1 (Health) of the European Union Seventh Framework

Program (FP7), Grant agreement nr HEALTH-F2-2009-223091. The authors were independent of the funders in all aspects of study design, data analysis, and writing of this manuscript. The Project Leader and Coordinator of the SEYLE project is Professor in Psychiatry and Suicidology Danuta Wasserman, Karolinska Institute (KI), Head of the National Centre for Suicide Research and Prevention of Mental Ill-Health and Suicide (NASP), at KI, Stockholm, Sweden. Other members of the Executive Committee are Professor Marco Sarchiapone, Department of Health Sciences, University of Molise, Campobasso, Italy; Senior Lecturer Vladimir Carli, National Centre for Suicide Research and Prevention of Mental Ill-Health (NASP), Karolinska Institute, Stockholm, Sweden; Professor Christina W. Hoven and Anthropologist Camilla Wasserman, Department of Child and Adolescent Psychiatry, New York State Psychiatric Institute, Columbia University, New York, USA. The SEYLE Consortium comprises centres in 12 European countries. Site leaders for each respective centre and country are: Danuta Wasserman (NASP, Karolinska Institute, Sweden, Coordinating Centre), Christian Haring (University for Medical Information Technology, Austria), Airi Varnik (Estonian Swedish Mental Health & Suicidology Institute, Estonia), Jean-Pierre Kahn (Université de Lorraine, France), Romuald Brunner (University of Heidelberg, Germany), Judit Balazs (Vadaskert Child and Adolescent Psychiatric Hospital, Hungary), Paul Corcoran (National Suicide Research Foundation, Ireland), Alan Apter (Schneider Children's Medical Centre of Israel, Tel-Aviv University, Tel Aviv, Israel), Marco Sarchiapone (University of Molise, Italy), Doina Cosman (Iuliu Hatieganu University of Medicine and Pharmacy, Romania), Vita Postuvan (University of Primorska, Slovenia) and Julio Bobes (University of Oviedo, Spain). Support for "Ethical Issues in Research with Minors and other Vulnerable Groups" was obtained by a grant from the Botnar Foundation, Basel, for Professor of Ethics, Dr. Stella Reiter-Theil, Psychiatric Clinic at Basel University, who served as the independent ethical consultant to the SEYLE project.

Compliance with ethical standards

Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

Appendix

Scale	Question	Items	Response alternatives
Victimization	In the past 12 months have others often… (please put a cross in one or more of the relevant box/s)	10 items	Yes/no
		Physical victimization: others pushed, hit or kicked you	
		Verbal victimization: others teased you, called you names, made fun of how you look or talk	
		Relational victimization: others spread rumors about you, deliberately left you out of activities, taken money, property or food from you, made you work for other pupils or people, take advantage of you, controlled you	
D-SIB	Mark the number of times you've EVER done the act during your life?	1. Have you ever intentionally cut your wrist, arms, or other area(s) of your body, or stuck sharp objects into your skin such as needles, pins, staples (not including tattoos, ear piercing, needles used for drugs, or body piercing)?	The scale was from never to 5 times or more
		2. Have you ever intentionally burned yourself with a cigarette, lighter or match?	
		3. Have you ever intentionally carved words, pictures, designs or other markings into your skin, or scratched yourself to the extent that scarring or bleeding occurred?	

Scale	Question	Items	Response alternatives
		4. Have you ever intentionally prevented wounds from healing, or bit yourself to the extent that it broke skin?	
		5. Have you ever intentionally banged your head or punched yourself thereby causing a bruise?	
		6. Have you ever intentionally hurt yourself in any of the above-mentioned ways so that it led to hospitalization or injury severe enough to require medical treatment?	
Depression	Beck Depression Inventory	BDI II	
Anxiety	The Zung Self-Rating Anxiety Scale (SAS)		
Suicide ideation/plan	During the past two weeks, have you reached the point where you seriously considered taking your life or perhaps made plans how you would go about doing it?		The range was from (0) never to (5) always
Suicide attempts	Have you ever tried to take your own life?		The options were yes, during the past 2 weeks; yes, during the past 6 months or longer; no, never
Loneliness	During the past 12 months, how often have you felt lonely?		Never, rarely, sometimes, most of the time, always
Alcohol consumption	How often do you have a drink containing alcohol? For example, 0.33 l beer or cider; glass of wine or 4 cl of strong alcohol		Never, once a month or less, 2 to 4 times a month, 2 to 3 times a week, 4 or more times a week, every day, several times a day
Drugs consumption	During your life, how many times have you ever used drugs?		Never, 1 or 2 times, 3 to 9 times, 10 or more times
Parental support	First three items: during the past 2 weeks		Never, rarely, sometimes, most of the time, always
	1. How often did your parents or guardians check to see if your homework was done?		
	2. During the past 2 weeks, how often did your parents or guardians understand your problems and worries?		Other questions: never or almost never, sometimes and often
	3. During the past 2 weeks, how often did your parents or guardians really know what you were doing with your free time?		
	Other items were: how often do your parents/guardians… (please put a cross in the relevant box)?		

Scale	Question	Items	Response alternatives
	Help you make important decisions; Take time to talk with you about things that happened to you; come to see you when you do some special activity like being in a play, a sport, or you give some sort of a performance; pay attention to your opinion or what you say		
Social support	Three items		Rarely or never, sometimes, often or all the time, rarely or never, sometimes, often or all the time
	1. You get along well with people your age		
	2. You feel you belong to a group		
	3. People your age like having you in the group		
Prosocial behavior SDQ	Please give your answers on the basis of how things have been for you over the last 6 months	1. I try to be nice to other people	Not true, somewhat true or certainly true
		2. I care about their feelings	
		3. I usually share with others (food, games, pens etc.)	
		4. I am helpful if someone is hurt, upset or feeling ill	
		5. I am kind to younger children	
		6. I often volunteer to help others (parents, teachers, children)	

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