McGill Journal of Education
Revue des sciences de l'éducation de McGill

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Safety first: The role of trust and school safety in non-suicidal self-injury
La sécurité d'abord : le rôle de confiance et de la perception de sécurité à l'école sur l'automutilation non-suicidaire

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Résumé de l'article

L'automutilation non-suicidaire (AMNS) est devenue un comportement très important parmi les adolescents en milieu scolaire. Cependant, peu de recherches ont évalué le rôle de l'environnement scolaire dans le comportement. Cette étude examine si les indices de confiance et de la perception de sécurité à l'école sont des facteurs prédictifs de l'AMNS. Les résultats indiquent que ces variables nous permettent d'identifier plus précisément les participants qui endossent l'AMNS. Les étudiants qui déclarent être victimes d'intimidation et de menace, et qui ont moins confiance en certains membres du personnel scolaire sont plus susceptibles de dire qu'ils s'engagent dans l'AMNS.

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SAFETY FIRST: THE ROLE OF TRUST AND SCHOOL SAFETY IN NON-SUICIDAL SELF-INJURY

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ABSTRACT. Non-suicidal self-injury (NSSI) has become very prominent among adolescents in middle and high school settings. However, little research has evaluated the role of the school environment in the behaviour. This study examined whether indices of school trust and perceived safety were predictive of NSSI behaviour. Results indicate that these variables allow us to more accurately identify participants who engage in NSSI. Students who report being bullied and threatened, and who have less trust in specific members of school staff are more likely to engage in NSSI.

LA SÉCURITÉ D'ABORD : LE RÔLE DE CONFIANCE ET DE LA PERCEPTION DE SÉCURITÉ À L'ÉCOLE SUR L'AUTOMUTILATION NON-SUICIDAIRE

RÉSUMÉ. L'automutilation non-suicidaire (AMNS) est devenue un comportement très important parmi les adolescents en milieu scolaire. Cependant, peu de recherches ont évalué le rôle de l'environnement scolaire dans le comportement. Cette étude examine si les indices de confiance et de la perception de sécurité à l'école sont des facteurs prédictifs de l'AMNS. Les résultats indiquent que ces variables nous permettent d'identifier plus précisément les participants qui endossent l'AMNS. Les étudiants qui déclarent être victimes d'intimidation et de menace, et qui ont moins confiance en certains membres du personnel scolaire sont plus susceptibles de dire qu'ils s'engagent dans l'AMNS.

There is increasing public awareness about non-suicidal self-injury (NSSI), and research on the behaviour has increased in recent years as researchers seek to better understand the phenomenon. Studies have demonstrated that the behaviour is very prevalent among adolescents (Muehlenkamp & Gutierrez, 2004; Ross & Heath, 2002), and researchers attempting to identify the etiology of NSSI have identified that one of the main functions of NSSI is as a mechanism for reducing strong negative emotions (e.g., Klonsky, 2009). However,

little is known about the association between the school environment and NSSI. This study seeks to evaluate the relationship between indices of school trust and safety and reports of NSSI behaviour.

BACKGROUND

NSSI is the deliberate, self-inflicted destruction of body tissue resulting in immediate damage, without suicidal intent and for reasons not socially sanctioned (Favazza, 1989; International Society for the Study of Self-injury [ISSS], 2007; Nixon & Heath, 2009). This definition does not include suicidal or accidental injury, nor does it include eating disorders and substance abuse, which do not result in immediate tissue damage. The definition of NSSI also excludes body modification, such as tattooing and piercing, as these can be considered socially sanctioned behaviours. The most commonly reported NSSI behaviours include cutting, burning, scratching, and hitting oneself to cause bruising (Nixon & Heath, 2009).

North American and international studies have found prevalence rates generally ranging from 14% to 20% among adolescents, with some studies reporting up to 39% (for a review, Heath, Schaub, Holly, & Nixon, 2008) and school professionals report that NSSI behaviour is increasing among high school students (Heath, Toste, & Beettam, 2006; Heath, Toste, Sornberger, & Wagner, 2011). Adolescents who engage in NSSI most commonly report an age of onset ranging from 12 to 14 years, during middle and high school (Rodham & Hawton, 2009). Given the high prevalence of these behaviours among students and the number of hours spent by adolescents at school, the school setting may be an important context to consider, beyond the home environment, when attempting to understand the development of this behaviour.

Individuals engage in NSSI for many reasons and research has identified a number of functions for the behaviour. Nock and Prinstein (2004) have proposed a functional model of NSSI, stating that this behaviour is reinforced by automatic or social means. Automatic reinforcement refers to individuals managing their own internal emotional states. These can be positive reinforcers, when NSSI is performed by people who report not feeling anything. In this case generating any type of feeling, even if that feeling is pain, is interpreted as reinforcing. This can include injuring to punish oneself, to feel relaxed, or to feel something, even if that feeling is pain. On the other hand, negative reinforcers function to remove feelings or to reduce negative cognitions. Examples of this type of reinforcement include using NSSI as a coping mechanism for dealing with intense emotions and coping with stress, or to stop other overwhelming negative feelings (Klonsky, 2009; Newman, 2009; Nock & Prinstein, 2004). NSSI can also be maintained through social reinforcement. Positive social reinforcement includes obtaining a response from someone following self-injury, such as obtaining sympathy or attention from

others, whereas negative social reinforcement involves avoiding anticipated interactions that are undesired (Nock & Prinstein, 2004).

Although NSSI is often found to be associated with depression, eating orders, and anxiety (e.g., Nock, Joiner, Gordon, Lloyd-Richardson, & Prinstein, 2006), individuals who engage in NSSI do not necessarily show evidence of these mental health concerns (Ross & Heath, 2003; Ross, Heath, & Toste, 2009), but consistently report difficulties with emotion regulation and coping with overwhelming negative feelings (Gratz & Roemer, 2004; Heath, Toste, Nedecheva, & Charlebois, 2008; Lynch & Cozza, 2009). NSSI may be used as a maladaptive coping mechanism for dealing with these negative emotions. Although research has identified a wide variety of different functions for NSSI, such as self-punishment, the affect-regulation model of self-injury has received considerable empirical support and is one of the most widely studied and supported functions of this behaviour (Klonsky, 2007, 2009). In a review of the NSSI literature, Klonsky (2007) found that of 18 studies that examined the function of NSSI, all found that affect regulation was a major factor in self-injury.

School safety

Research has found that trauma and stressors in the home may increase the risk of engaging in NSSI (e.g., Deiter, Nicholls, & Pearlman, 2000; Gratz, 2003), but school stressors may also impact NSSI behaviour. Beyond the home environment, adolescents' emotional well-being and ability to cope can be either positively or negatively affected by how they perceive their school environment (Ozer & Weinstein, 2004; Samdal, Wold, & Bronis, 1999). Therefore, perceived school safety is an important concept to examine when investigating coping, stress, and emotions in adolescents. Although research has yielded conflicting results regarding whether or not the school environment has become more or less safe in recent years (Beran & Tutty, 2002), researchers tend to agree that violence, bullying, and other victimization are issues that students have to manage on a regular basis (Aspy et al, 2004; Reid, Peterson, Hughery, & Garcia-Reid, 2006). For example, in a 1999 poll of Canadian teenagers, 35% reported that violence had increased in the previous five years (Joong & Ridler, 2006). This is of concern, as students who do not believe they are safe at school may not function as well as they otherwise would; a lack of perceived school safety is a risk factor for a wide variety of problematic outcomes.

The effects of low levels of perceived school safety can range from academic challenges to risky behaviours (Reid et al., 2006; Samdal et al., 1999). Students who do not feel safe at school, or who feel they are the target of bullying, are more likely to feel elevated levels of stress, anxiety, and depression (Juvonen & Graham, 2001; McDermott, 1983). Additionally, students who report bullying, social exclusion, and an overall unsafe school environment have lower levels of reported academic achievement (Samdal et al., 1999). Samdal and colleagues

suggest that this relationship may be due to stress; students who feel that their school environment is unsafe are more likely to have higher levels of stress, which reduces the students' ability to cope. Other research supports this link between perceived safety and well-being. For example, Ozer (2005) reports results from the National Center for Education Statistics (1997), which indicate that higher levels of perceived school safety are related to better outcomes, both educationally and psychologically. The relationship between perceived school safety and well-being can extend into problematic behaviours. Reid et al. (2006) found a relationship between unsafe spaces within the school environment and increases in adolescent drug use and bullying. These data are supported by Batsche and Knoff (1994) who found that low levels of perceived school safety are related to dangerous behaviours, such as carrying a weapon to school, as well as school absenteeism.

Conversely, high levels of school safety can have protective effects. Aspy et al. (2004) conducted a study on the protective effects of various elements of the adolescent experience, including school safety. The authors found that perceived school safety, along with other positive skills and conditions, had protective effects against risky behaviours, including fighting and carrying a weapon to school. In a study on adolescents exposed to community violence, Ozer and Weinstein (2004) found that higher levels of perceived school safety can have a protective effect on the psychological well-being of students.

Teachers and other school professionals can play a positive, protective role in fostering this sense of school safety among students. In a study on bullying and school safety by Beran and Tutty (2002), results indicated that despite a high level of reported bullying, the majority of students reported feeling safe in the school environment. The authors found that teacher support mediated the relationship between bullying and perceived safety; adult intervention in bullying incidents helped to make students feel safe, even in the presence of verbal and physical bullying. Additionally, in a review of literature, Leff, Power, Costigan, and Manz (2003) suggest that the relationship between teachers and students, including mutual trust, is an important factor in the development of a positive general school climate. Thus, it would seem to follow that school professionals can be a positive source of support for students who are experiencing difficulties.

Following recent highly publicized incidents of suicide by victims of bullying (e.g., Smolowe, Herbst, Weisensee Egan, Rakowsky, & Mascia, 2010), youth bullying has become a topic of public concern. Research on the relationship between bullying and NSSI is nascent, and early results have been mixed. Evaluating an in-patient psychiatric sample in Finland, Luukkonen, Räsänen, Hakko, and Riala (2009) found that being the victim of bullying was related to suicidal ideation and attempts, but did not find a relation between bullying and self-harming behaviours. On the other hand, Hay and Meldrum (2010)

found a relationship between bully victimization and non-suicidal, deliberate self-harm that was partially mediated by negative emotions, such as anxiety and depression. Hay and Meldrum's study focused on deliberate self-harm (DSH), a broad construct that includes NSSI, as well as non-immediately damaging behaviours, such as jumping from heights or self-poisoning. Likewise, Barker, Arsenault, Brendgen, Fontaine, and Maughan (2008) found a relationship between bullying, victimization, and DSH, but found that girls who follow an increasing trajectory of experiences with bullying were more likely to engage in DSH, and also found that adolescents who are both bullies and victims were more likely to engage in self-harm.

Clearly, a lack of perceived school safety can contribute to problematic behaviours and poor coping beyond the home environment. Additionally, research on bullying and victimization suggests that adolescents who are bullied may be at a greater risk for engaging in certain forms of self-harming behaviours. Theoretically, these relationships present a particular concern for students who are at risk for engaging in NSSI, as coping with negative emotion and excessive levels of stress are the most frequently cited cause of NSSI behaviour (e.g., Klonsky, 2009; Newman, 2009). As such, students who do not feel safe in their school environment may have higher levels of stress and a compromised ability to cope (Samdal et al., 1999), putting them at greater risk for engaging in NSSI.

Thus, the focus of this investigation was to examine whether perceived school safety and trust contributes to adolescents' risk of engaging in NSSI. Specifically, our objective was to evaluate whether a set of independent variables (trust in other students, teachers, administration, school counsellor, as well as missed days because feeling unsafe, carrying weapon to school, threatened at school, bullied at school, school fights) significantly predict whether an adolescent belongs to an NSSI versus non-NSSI group.

METHOD

Participants

Survey data was collected from 7,126 middle and high school students (3,503 males, 3,623 females) in the greater Kansas City metropolitan area, between the ages of 11 and 19 years (M = 14.92, SD = 1.61) and enrolled in grades 6 to 12. A total of 1,879 students (26.4%) reported physically hurting themselves on purpose at least once in the past. Of these, 127 students (1.8%) reported hurting themselves only with the intent to die and were excluded from our sample. Students who answered that they had intentionally hurt themselves were asked whether they had done so to deal with stress or other problems, and those who responded that they had (n = 1,259; 17.7%) continued with the survey. Due to a computer error, participants who reported not hurting

themselves to deal with stress did not receive any more follow-up questions, and thus were excluded from our sample. Finally, for the current study we did not include 605 students who reported engaging in both suicidal and non-suicidal forms of self-injury, leaving a final sample of 654 students who reported only engaging in NSSI to deal with stress.

These 654 students who reported engaging in NSSI (NSSI group) were matched on age and gender to students who reported having never engaged in self-injury (non-NSSI group). The responses of students on the predictor variables were analyzed, and students with missing data were removed from the sample, as were their matched student from the other group. A missing values analysis was performed using SPSS to confirm that the values were missing completely at random, but this was not a concern as less than one percent of the records contained missing data. Of the 1,308 participants (NSSI + non-NSSI groups), 16 matched pairs were removed because of missing values or because they were matched to participants with missing responses, leaving a final sample consisting of 1,276 students (324 males, 952 females), aged 11 to 19 years (M = 14.89 years, SD = 1.48) in 638 matched pairs. Finally, to reduce confounds due to cognitive or emotional development of participants, this sample was separated into a middle school (n = 710; M age = 13.80, SD = 0.612) and high school (n = 566; M age = 16.25, SD = 1.04) group for the analyses.

Procedure

A total of 13 high schools and 18 middle schools participated in the project, and a randomized sample was selected from each school and each grade. Students were asked to complete an online survey on teen health-related behaviours. They were told that individual results would not be examined, and that only aggregate results would be evaluated. The parents of all randomly selected participants were informed about the nature of the survey through a letter sent home with the student. Parents could choose to refuse consent; a total of 6 students did not participate for this reason. Students completed the survey in computer labs during class time, but worked individually, and were not permitted to discuss their responses.

Measures

The Kauffman Teen Survey (KTS) is an online survey focusing on health, lifestyle, and academic-related behaviours. The survey was administered yearly to a large population-based sample of students in Kansas City. Because of the nature of the survey (i.e., the survey changes each year, and certain items are changed or added to reflect the interests and concerns of different school communities), reliability and validity information is not available. The KTS contains 125 questions, but is a computer adaptive questionnaire, so the questions the respondent receives change depending on the answers given. Therefore, most students do not answer all 125 questions. Embedded in the survey was a ques-

tion asking if the respondent had "ever physically hurt themselves on purpose." If the student responded that they had deliberately hurt themselves in the past, they received follow-up questions about the behaviour, including a question asking if they had hurt themselves with the intent to die. Also included in the survey were nine questions about trust in individuals within the school context and perceived school safety. The four trust variables were scored on a Likert scale from 1 to 5, with low scores indicating higher trust. Three of the safety variables were scored on a Yes/No scale, and the other two were scored on an ordinal frequency scale, with 0 indicating "never" and 5 indicating "more than 20 times." The questions and scales are shown in Table 1.

TABLE 1. *Trust and perceived school safety questions*

Variable	Question	Scale
Trust students	How safe and comfortable are you with other students in your school?	Likert
Trust teachers	How much do you trust your teachers?	Likert
Trust administration	How much do you trust your school administrators?	Likert
Trust school counsellor	How much do you trust your school counselors?	Likert
Missed days because unsafe	During the past 30 days, how many times did you NOT go to school because you felt you would be unsafe at school or on your way to or from school?	Ordinal
Carried weapon to school	Have you ever carried a weapon on school property or to a school activity?	Yes/No
Threatened at school	During the past 12 months, has someone threatened or injured you on school property?	Yes/No
Bullied at school	During the past 12 months, has someone bullied you on school property?	Yes/No
School fights	During the past 12 months, how many times were you in a physical fight on school property?	Ordinal

RESULTS

The objective of this study was to evaluate whether the indices of perceived school safety and trust in school personnel and peers were predictive of NSSI. Two separate direct logistic regressions were performed, for the middle school

and high school group, using group membership (NSSI vs. non-NSSI) as an outcome variable. Nine variables were used as predictors; four of these were indices of trust (trust students, trust teachers, trust administration, trust school counsellor) and five were indices of perceived safety (missed days because unsafe, carried weapon to school, threatened at school, bullied at school, school fights). If these nine variables were strongly predictive of engaging in NSSI, the full model would be significantly better at classifying students into NSSI vs non-NSSI group than a constant-only model. Results indicated that when all nine variables were taken together, they significantly predicted whether or not a student reported engaging in NSSI for the middle school group, x^2 (9) = 76.16; p < .001, and the high school group, x^2 (9) = 48.48; p < .001, so the set of predictors reliably distinguished between adolescents in the NSSI group and those in the non-NSSI group. Classification was moderate, as 59.9% of those in the NSSI group and 69.4% of those in the non-NSSI group were correctly predicted by the middle school model, revealing an overall success rate of 64.6%. For the high school group, 57.4% of those in the NSSI group and 71.3% of those in the non-NSSI group were correctly predicted by the model, an overall success rate of 64.3%.

TABLE 2. *Logistic regression analysis of self-injury status as a function of trust and school safety variables for the middle school group.*

Variable	B	SE	Odds ratio
Trust students	– 0.10	0.11	0.91
Trust teachers	– 0.07	0.13	0.94
Trust administration	– 0.41**	0.14	0.66
Trust school counsellor	0.11	0.11	1.12
Missed days because unsafe	0.13	0.17	1.14
Carried weapon to school	0.90*	0.36	2.45
Threatened at school	0.49*	0.22	1.63
Bullied at school	0.55**	0.18	1.73
School fights	– 0.39*	0.17	0.68
Constant	– 2.18*	0.91	0.11

Notes. *B* = unstandardized coefficients; *SE* = standard error of the computed value of *B*;.*p < .05; **p < .01.

For the middle school model, five variables were individually significant predictors of whether a student would engage in NSSI or not: trust in administration, carried a weapon to school, being threatened at school, being bullied at school, and school fights. The logistic regression analysis is presented in Table 2. The odds ratio and confidence intervals for trust in administration was 0.66 (95% CI = 0.50-0.87), indicating that the odds of correctly estimating whether a student will be in the NSSI group improve by 51.5% if we have this information. The odds ratio and confidence interval for the three safety variables were 2.45 (95% CI = 1.22-4.93) for carried a weapon to school, 1.63 (95% CI = 1.07-2.49) for being threatened at school, 1.73 (95% CI = 1.23-2.45) for being bullied at school, and 0.68 (95% CI = 0.49-0.95) for fights at school. These ratios indicate that the odds of correctly estimating whether a student will be in the NSSI group improve by approximately 145.1%, 63.1%, 73.4%, and 47.1% respectively, if we know the students' report on these questions.

TABLE 3. *Logistic regression analysis of self-injury status as a function of trust and school safety variables for the high school group*

Variable	B	SE	Odds ratio
Trust students	-0.15	0.12	0.86
Trust teachers	0.03	0.15	1.03
Trust administration	-0.15	0.14	0.86
Trust school counsellor	-0.25**	0.13	0.78
Missed days because unsafe	-0.08	0.21	0.93
Carried weapon to school	0.84**	0.41	2.32
Threatened at school	0.67**	0.27	1.94
Bullied at school	0.41*	0.22	1.52
School fights	-0.03	0.20	0.97
Constant	-2.22*	1.16	0.11

Notes. *B* = unstandardized coefficients; *SE* = standard error of the computed value of *B*. *p < .1; **p < .05.

For the high school group, the logistic regression analysis is presented in Table 3. Three variables were individually significant: trust in counsellor, carried a weapon to school, being threatened at school, and one was marginally significant: being bullied at school. The odds ratio and confidence interval for *trust in*

counsellor was 0.78 (95% CI = 0.61, 0.99), indicating that the odds of correctly estimating whether a student will be in the NSSI group improve by 28.5% if we have this information. The odds ratios were 2.32 (95% CI = 1.04, 5.18) for *carried a weapon to school*, 1.94 (95% CI = 1.15, 3.29) for *being threatened at school*, and 1.51 (95% CI = 0.979, 2.34) for *being bullied at school*. These ratios indicate that the odds of correctly estimating whether a student will be in the NSSI group improve by approximately 132.0%, 94.4%, and 51.3% respectively, if we know how the students respond to these questions.

Table 4. *Mean Responses on Predictor Variables for Students in NSSI and Non-NSSI Group for Middle and High School Students*

Variable		Middle School		High School	
		Mean	SD	Mean	SD
Trust students*	NSSI	2.33	0.75	2.81	0.76
	Non-NSSI	2.17	0.76	2.68	0.77
Trust teachers*	NSSI	2.18	0.91	2.20	0.89
	Non-NSSI	1.84	0.92	1.94	0.82
Trust administration*	NSSI	2.46	0.98	2.59	0.94
	Non-NSSI	2.03	0.96	2.24	0.94
Trust school counsellor*	NSSI	2.20	1.0	2.36	0.98
	Non-NSSI	1.94	1.0	2.00	0.91
Missed days because unsafe	NSSI	1.16	0.57	1.14	0.55
	Non-NSSI	1.11	0.48	1.08	0.43
School fights	NSSI	1.30	0.68	1.18	0.60
	Non-NSSI	1.13	0.47	1.11	0.42

Note. * Trust variables are scored on a Likert scale, with low scores indicating a higher level of trust.

For these individually significant variables, students in middle school who engaged in NSSI reported having less trust in school administration (*M* = 2.46, *SD* = 0.98) than individuals who did not engage in NSSI (*M* = 2.03, *SD* = 0.96; trust variables were reverse scored so that low values indicate higher trust). High school students who reported engaging in NSSI stated having less trust in school counsellors (*M* = 2.36, *SD* = 0.98) than students who did not report engaging in NSSI (*M* = 2.00, *SD* = 0.91). Also, students in both middle and high school who engaged in NSSI were more likely to report bringing a weapon to school (10.5% middle school; 10.6% high school) than students who did not report engaging in self-injury (3.4% middle school; 3.2% high school). They also reported being threatened at school (41.8% middle school; 26.4% high school) more often than students in the comparison group (27.2% middle school; 17% high school), and being bullied at school (28.8% middle school; 23.2% high school) more often than students in the comparison group

(14.3% middle school; 9.9% high school). Tables 4 and 5 provide descriptive statistics for all predictor variables for students in the NSSI and comparison group. Table 4 includes variables scored on a Likert or Ordinal scale, whereas Table 5 includes variables scored on a Yes/No scale.

TABLE 5. *Proportion of ìYesî responses on predictor variables for students in NSSI and non-NSSI group for middle and high school students*

Variable		Middle School		High School	
		Number	Percent (%)	Number	Percent (%)
Carried weapon to school	NSSI	37	10.5	30	10.6
	Non-NSSI	12	3.4	9	3.2
Threatened at school	NSSI	148	41.8	75	26.4
	Non-NSSI	97	27.2	48	17.0
Bullied at school	NSSI	102	28.8	66	23.2
	Non-NSSI	51	14.3	28	9.9

DISCUSSION

The objective of the study was to evaluate whether nine indices of trust and perceived school safety (trust students, trust teachers, trust administration, trust school counsellor, missed days because unsafe, carried weapon to school, threatened at school, bullied at school, school fights) were predictive of adolescent engagement in NSSI. Overall, results revealed that students who reported less trust and school safety were more likely to be in the NSSI group. Specifically, the results indicated that middle school students who engage in NSSI reported less trust in administration and reported being in more fights, while high school students who engage in NSSI reported less trust in school counsellors. Students from both middle and high school who engage in NSSI reported being bullied and threatened more often, and carrying a weapon to school more often than students who did not engage in NSSI.

Trust in school personnel

Trust in administration was an important variable for the middle school group, as the odds of correctly estimating whether a student will engage in NSSI increase by 51.5% when we have this information. There are many ways of interpreting this result. Indeed, students who self-injure may have more disciplinary contact with administrators, which may affect their feelings toward these members of faculty. However, an important role of a school's administrators is establishing a safe, healthy, and caring school climate (Moore Johnson et al., 2001), in addition to establishing disciplinary policies. These roles can be carried out in a way that does not undermine the students' trust in their administration.

A lack of trust in administration by students may indicate systemic challenges in the school's policies and governance that need to be overcome. The result that indicated that trust in administration significantly predicts NSSI may highlight the importance of not only building strong supports between school professionals and students, but also of creating and maintaining a school environment that promotes and instils a holistic sense of safety and trust. This has not been previously evaluated in relation to NSSI, but has been for other maladaptive behaviours. For example, Levine and Smolak (2005) have argued that system-wide, school-based interventions are more effective in preventing eating disorders than interventions targeting individuals. This study did not enquire about the parts of administration that were untrustworthy, and more research is needed to determine the specific policies and guidelines that are problematic for these students.

It is unclear why trust in administration was significant in the middle school group, while trust in counsellors was significant in the high school group. It is possible that there are implicit differences in the structure of school personnel between middle and high school settings that could explain why students perceive administrators and counsellors in a different light. For example, it is possible that high school students have more access to school counsellors than middle school students, but this requires further investigation. However, taken together, we see that reports of trust in certain members of the school staff can have an effect on reported NSSI behaviour in adolescents.

Victimization: Feeling safe at school

Being bullied and being threatened at school were important variables, as the odds of correctly classifying a student increase by 73.4% and 63.1%, respectively, for middle school, when we have this information, and increase by 51.3% and 94.4%, respectively, for high school. In our sample, students in middle and high school who reported engaging in NSSI were more likely to report being the victim of bullying, or being threatened at school. Carrying a weapon to school was also a critical predictor of NSSI, as the odds of correctly estimating whether a student reports engaging in NSSI increase by 145.1% for middle school and 132.0% for high school students if we know whether a student reports carrying a weapon to school. Over three times as many students in our NSSI group reported having brought a weapon to school as students in our comparison group. Number of fights at school was also a significant predictor for the middle school group, as the odds of correctly classifying a student increase by 47.1% when we have this information.

Research on the relationship between bullying, victimization and non-suicidal self-injury is limited, and early results of this research have been mixed. The results of our study support the relationship between school victimization and non-suicidal self-injury. These results can be explained in terms of functional models of NSSI. Indeed, victimization is associated with psychological mal-

adjustment, and children who are victimized are more likely to be depressed, lonely and anxious, and are more likely to have low self-esteem (Hawker & Boulton, 2000). Adolescents who engage in NSSI frequently have difficulty coping with these strong emotions, and engage in NSSI as a means of moderating their negative affect and stress. When students are threatened and bullied at school, it is possible that those students who do not have strong, adaptive mechanisms for dealing with the resulting emotions will turn to NSSI as a means of removing the distress. This may be particularly acute if the student does not trust the administration of their school to handle the situation appropriately. This victimization may also impact weapon use. Adolescents are more likely to carry a weapon to school if they feel unsafe (Batsche & Knoff, 1994), and the higher endorsement of weapon use at school by students in the NSSI group may reflect the fact that students in our NSSI group feel less safe at school than their non-self-injuring peers.

Taken together, these results provide support for the relationship between school safety and NSSI, and indicate that students who are bullied and threatened and have less trust in their school administration may be more likely to engage in NSSI as a means of coping with their stress.

Implications

The results of this study have many clinical implications for professionals working with adolescents. Research has previously indicated that adolescents who are victimized are at risk for emotional disorders, substance abuse, and suicidality (e.g., Brunstein Klomek, Marrocco, Kleinman, Shonfeld, & Gould, 2007; Hawker & Boulton, 2000; Olweus, 1996), and this study indicates that adolescents who do not feel safe and who are victimized are also at risk for non-suicidal self-injury. This further highlights the need to take perceived safety and trust seriously. Teachers are frequently uncertain what constitutes bullying, and are therefore inconsistent in their interventions (Hazler, Miller, Carne, & Green, 2001; Mishna, Scarcello, Pepler, & Wiener, 2005). School administrators must develop clear guidelines that are communicated to students, and teachers must be trained to understand how to appropriately intervene, in order to make their schools safer for their students.

The results of this study may also have implications on prevention of NSSI behaviours in the school population. Many individual interventions have been shown to reduce NSSI behaviour in adolescents, including communication skill-building, behavioural interventions and cognitive therapy (Lieberman, Toste, & Heath, 2009), but the majority of schools do not have policies in place to deal with NSSI (Duggan, Heath, Toste, & Ross, 2011). Little research has been performed evaluating school-wide prevention programs. School-wide programs directly focusing on NSSI have not been developed, and some may be wary of implementing such a program for fear of increasing the prominence of the behaviour in their school (Hawton, Rodham, Evans, & Weatherall, 2002;

Taiminen, Kallio-Soukainen, Nokso-Koivisto, Kaljonen, & Helenius, 1998). Programs that target a construct that is related to NSSI could have positive indirect effects, and lead to a reduction in NSSI as students no longer have the same levels of stress at school, and have fewer strong negative emotions to cope with as they begin to feel safer at school. Such programs can help reduce bullying and enhance the sense of safety in school (e.g., Ferguson, San Miguel, Kilburn, & Sanchez, 2007; Tolan, 2000), and may be needed to complement individual interventions for adolescents engaging in NSSI. Many programs have been developed to reduce bullying in schools, including the *Olweus Bullying Prevention Program* (OBPP) (Olweus, Limber, & Mihalic, 1999) and the *Steps to Respect* program (Frey et al., 2005). These programs are school-wide programs that involve staff training on awareness and intervention, as well as classroom teaching on bullying and its effects. More research is needed to determine whether these types of programs could also have an effect on NSSI behaviour in adolescents.

Directions for future research

This study evaluated the relationship between NSSI and nine indices of perceived school safety and school trust, and found that there was a significant relationship between the variables. However, we must always be cautious in interpreting correlational data, and cannot necessarily infer that school safety plays a causal role in students' engagement in NSSI behaviour. Although we have demonstrated that there is a relationship between perceived safety and NSSI in this sample, there is always a concern about the direction of the relationship. Indeed, we cannot exclude the possibility that students who engage in NSSI become the victim of bullying because of their behaviour, or that another variable plays a crucial role in the relationship. In this study, anxiety may be such a variable. As it was argued above, anxious individuals may be more likely to engage in NSSI, as NSSI is frequently used as a means of coping with strong negative emotions. Anxious individuals may also be more likely to be victims of bullying and have less trust in administration. Other important risk factors, including substance use and the absence of protective peer networks, could also be involved. Future research must investigate the role of such factors in this relationship.

This study also relied on self-report data, so students' perceptions of school safety were its main focus. Including teacher-report measures of safety could allow us to clarify this discrepancy, and determine where the relationship lies. However, whether the environment is actually or perceived to be threatening, it is clear students in this sample who engage in NSSI did not feel safe, and interventions that aim to improve this could have a beneficial effect.

Additionally, the current paper highlights elements of the school environment that relate to NSSI. However, little is known about elements of the home environment that may affect the prevalence, frequency, and intensity of NSSI.

There is evidence to suggest that some severe elements of home life, such as childhood abuse or neglect, are potential risk factors for engagement in NSSI (Klonsky & Moyer, 2008). Despite the suggested association between earlier childhood experiences and later NSSI, there is little known about how the current home context influences adolescents' behaviour. This study also did not investigate individual student characteristics and differences in school safety or NSSI variables, as it was beyond the scope of this project. However, there may be reason to believe that individual characteristics, such as gender, ethnicity, or socio-economic status, may influence engagement in NSSI (Bradvik, 2007; Claes, Vandereycken, & Vertommen, 2007), and future studies should investigate this aspect of the relationship.

Finally, the definition of NSSI as a behaviour is based on a single functional criterion. Due to a computer error, only participants that reported engaging in NSSI as a response to stress were given the follow-up questions. Individuals that engage in NSSI for different reasons, or as a means of regulating other emotions, may not have the same school safety concerns. Future research should study the effect of the school environment on NSSI in individuals that use the behaviour for a broader variety of functions. Despite these limitations, this study has important implications for the study of NSSI. The findings of this study contribute to our knowledge of NSSI, and expand our understanding of the risk factors associated with the behaviour.

CONCLUSION

The aim of this study was to evaluate the relationship between NSSI and perceptions of school safety. Engagement in this behaviour could be prompted by the need to regulate the negative emotions which have been found to be associated with a stressful school environment. The results of our study indicated that nine indices of school safety were related to student self-reports of NSSI. Trust in administration, trust in counsellor, student reports of school threats and bully victimization, and reports of carrying a weapon to school were particularly predictive of NSSI endorsement. This indicates that students who feel less safe at school and who do not trust the school's administration are more likely to engage in NSSI. Although more research is needed in order to determine the details of this relationship, these results may lead to important implications on the types of interventions that can be used to effectively work with students engaging in NSSI in the schools.

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