

Preventing Non-Suicidal Self-Injury in Adolescents: The Signs of Self-Injury Program

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Abstract Non-suicidal self-injury (NSSI) continues to be a problem among youth and there is a great need for programming aimed at reducing NSSI in adolescents. The signs of self-injury program is the first known NSSI school-based prevention program for adolescents that attempts to increase knowledge, improve help-seeking attitudes and behaviors, and decrease acts of NSSI. A total of five schools implemented the program in selected classrooms ($n = 274$ adolescents; 51.5% female, mean age = 16.07 years) that consisted of predominantly Caucasian (73%) adolescents. Researchers collected pre-post evaluation surveys of the program and feasibility interviews were conducted with the school guidance personnel who ran the program. Results indicated the prevention program did not produce iatrogenic effects, increased accurate knowledge and improved help-seeking attitudes and intentions among students. No significant changes were found in regards to self-reported formal help-seeking actions. Feasibility responses indicate the program is user-friendly and well received by school personnel. The data offer preliminary evidence that the

program may be an effective prevention program for schools.

Keywords Non-suicidal self-injury · Adolescents · Prevention · Deliberate self-harm · High-school

Introduction

Concerns regarding the potential increase in non-suicidal self-injury (NSSI; e.g., cutting, burning; skin abrading) among adolescents have been documented (Muehlenkamp et al. 2009; Olsson et al. 2005), and underscore the need to find ways to prevent youth from engaging in this behavior. There is a growing body of literature suggesting that lifetime rates of at least one act of NSSI within high school students approximates 23% of the population (Lloyd-Richardson et al. 2007; Nixon et al. 2008), and research consistently finds an age of onset for NSSI around 14 years (Heath et al. 2009). This high rate of self-reported NSSI is alarming given findings that those who engage in NSSI are at increased risk for also attempting suicide (Glenn and Klonsky 2009; Whitlock et al. 2008). Furthermore, a majority of adolescents indicate they do not seek help for such problems (Evans et al. 2005; Fortune et al. 2008a). Recent studies of help-seeking behaviors among students reporting deliberate self-harm (inclusive of both NSSI and suicidal behavior) suggest that adolescents who do not formally seek help have similar levels of psychopathology than those who do present for formal treatment (Hawton et al. 2009). Thus, high school students who are engaging in NSSI are likely to benefit from some type of intervention and increased access to formal help.

Being able to intervene early, or prevent adolescents from starting to engage in NSSI may serve a dual purpose

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of avoiding serious physical injury, and averting a potential pathway to suicidal behavior. Despite the apparent need for prevention programs for adolescent NSSI, there are no known programs currently in use. This is concerning since recent research with adolescents found that they believe some of the best ways to prevent self-harm, including NSSI, are to: have access to non-judgmental persons at school to talk to; provide education to teachers, peers and parents about NSSI and how to respond; and to reduce concerns about confidentiality and stigma with seeking help (Fortune et al. 2008b). In fact, many of the recent studies on help-seeking patterns among self-injuring youth indicate that primary prevention in the schools is essential (Evans et al. 2005; Hawton et al. 2009), and student reported ideas for preventing self-injury corroborate the importance of using schools and teachers (Fortune et al. 2008b) as an initial starting point.

Schools are often seen as a critical place to offer preventative interventions for a range of mental health issues because adolescents spend a significant amount of their life at school (Joe and Bryant 2007). However, many school personnel are not aware of a student's self-injury because students are more likely to turn to their peers for support and help because they find their peer's responses to be more accepting (Evans et al. 2005). Yet, there remains a lack of data on the type of attitudes peers hold about friends' NSSI and whether or not peers are comfortable with, or willing to, help friends who disclose their NSSI. If schools are to be a front-line of prevention for NSSI, it will be necessary for a prevention program to target both school staff and students in order to be successful (Mann et al. 2005), and to evaluate student attitudes towards NSSI and willingness to help friends seek help.

Building upon an already successful model of suicide prevention (Signs of Suicide), Screening for Mental Health, Inc. recently developed a school-based prevention program specifically targeting NSSI. The Signs of Self-Injury (SOSI; Jacobs et al. 2009) program offers prevention training that addresses many of the prevention features identified by adolescents as important to preventing NSSI (Fortune et al. 2008b), and meets school personnel needs (Heath et al. 2006). The primary goals of the SOSI program are to: (a) increase knowledge of NSSI including warning signs and symptoms, (b) improve attitudes and perceived capability to respond and help refer students, or peers, who engage in NSSI, (c) increase help-seeking behaviors for NSSI for peers or self, and (d) decrease acts of NSSI among adolescents. The SOSI program is divided into two general modules; one for faculty/staff and one for students. The module designed for school staff/personnel provides psychoeducational material about NSSI which is presented along with a set of potential warning signs for the behavior, and suggested ways to respond if a student discloses NSSI.

The student module is designed to be implemented in one class period and uses a multimedia DVD to share the information. Students are presented with basic information about NSSI, its signs and symptoms, during a brief video segment. Following the basic information, students are encouraged through a series of video vignettes, to respond to peer NSSI by using the ACT[®] model: **A**cknowledging the signs, demonstrating **C**are for the person and a desire to offer help, and to **T**ell a trusted adult. Also included is a video example portraying an initial meeting between a self-injuring student and the school counselor, and a brief video segment of an interview with an older adolescent who discusses her recovery from NSSI. These last two video vignettes are designed to offer hope and to reduce stigma and fears associated with seeking formal help (Jacobs et al. 2009). Following the video segments, a moderated class discussion is held to answer questions, provide information, and describe school and local resources available to the students. A detailed program implementation guide is provided that includes discussion questions and answers to be used in the classroom to facilitate conversation about the problem of NSSI, the importance of obtaining help, and what to expect if one seeks help.

The SOSI program is comprehensive in nature and has potential to be an effective preventative initiative; however, its effectiveness needs to be assessed. The purpose of the current study was to conduct an initial evaluation of the effectiveness and feasibility of the SOSI program in achieving the goals of increasing NSSI knowledge, improving attitudes and comfort towards help-seeking for NSSI, increasing help-seeking behaviors for peers or self, and decreasing acts of NSSI. Due to resource restrictions and the importance adolescents place on help-seeking from peers, only the effectiveness of the student component of the program was formally assessed.

Hypotheses

The SOSI program is designed to educate about NSSI and offer skills to respond to NSSI in peers that will improve attitudes towards and comfort with help-seeking. Consequently, it was hypothesized that knowledge of NSSI signs/symptoms would significantly increase from pre- to post-program implementation. Perceived comfort with NSSI and openness to helping peers (e.g., attitudes) was also hypothesized to show a significant increase from pre- to post-implementation. Further, it was hypothesized that a significant increase in self-reported help-seeking behaviors would be observed. Finally, it was expected that the 1-month incidence of the frequency and intensity of NSSI thoughts and behaviors would significantly decrease from pre- to post-program implementation.

The potential for iatrogenic effects of the SOSI program was also evaluated with no a priori hypotheses offered because this is the first program of its kind. In addition to evaluating the student portion, qualitative feasibility data about implementing the program was also collected. It was hypothesized that school personnel administering the program would provide favorable responses to the SOSI program content and structure.

Methods

Recruitment Procedures and Participants

Potential participating high schools were initially contacted at the start of the 2007–2008 academic year by a staff person hired by Screening for Mental Health, Inc., who provided brief information about the program and pilot study at school administrative conferences and regional meetings. A total of 21 school counselors/psychologists expressed verbal interest and provided their names and contact information. Contact information was forwarded to the first author who provided additional detail about the program and requirements for the pilot evaluation. Fifteen schools (71.43%) responded to the follow-up contact with interest in participating. These 15 schools were provided program materials and guidelines for the pilot study to help gain permission from administrators, with a goal of program implementation in Spring 2008. After reviewing materials and study requirements, 8 schools withdrew from the study due to timing constraints, leaving a sample of 7 schools. A pre-implementation conference call was held approximately 1.5 months prior to implementing the program to answer any questions and finalize study procedures. Two additional schools withdrew their participation at this point; one due to timing and administrative concerns, the other due to administrative constraints. This left a final sample of 5 schools (33.3% overall participation rate).

Of the five schools that participated in the pilot study, all but one elected to pilot the program within smaller class units that comprised predominantly “at risk” students identified as having emotional/behavioral problems. The school that did not target “at risk” students elected to pilot the program in health classes. This resulted in a sample of 282 students; however, eight students had incomplete protocols and were dropped from analyses leaving a final sample size of 274 students (51.49% female) with a mean age of 16.07 ($SD = 1.32$). Students from all five schools identified as predominantly Caucasian (72.96%). Students from the five schools did not differ in their overall GPA or gender distribution (see Table 1), but significant differences were found across schools in terms of age and year in school. Participants from school 2 were older and therefore,

had more seniors, than the other schools (see Table 1). The five schools also did not differ with respect to their mean scores on the pre-assessment of the knowledge, attitudes, and help-seeking variables, $F(16, 168) = 1.24, p > .24$.

Pilot Study Procedures

All schools followed their own pre-set active consent procedures to obtain permission from student parents/guardians to participate in the program and evaluation. Since schools coordinated the active guardian consent procedures, an estimate of consent rates is not available. Research assistants, who had no affiliation with the schools, administered a pre-survey (described below) to students approximately 2 weeks (range 1.5–2.5 weeks) before the SOSI program was to be implemented in the selected classrooms. Students were read a script describing the purpose of the study, given an opportunity to ask questions, and then were provided with written assent forms. Students providing assent were given the pre-survey that inquired about knowledge of NSSI, engagement in actual NSSI behavior, and attitudes towards peers who self-injure and help seeking. To maintain confidentiality, student packets were assigned a random identification code and only the research assistants and primary investigator had access to a master list linking student names and codes. School personnel were not provided access to student responses.

Schools then implemented the SOSI program according to the implementation guide (Jacobs et al. 2009) during one 50-min class period. The implementation involved introducing the topic, showing the video components (approx. 18 min), and facilitating class discussion using the accompanying discussion guide (approx. 20–25 min). As part of the program, students are also given self-assessment form to complete, which are not collected, in effort to help them self-identify a problem with NSSI. To directly foster help-seeking, an index card is distributed to all students along with the self-assessment on which they mark one of two statements (e.g., “I need to talk to someone” or “I do not need to talk to someone”). Students are required to put their name on this card and it is collected by the program leader and all names requesting help are forwarded to the school guidance person who follows up with students.

All program sessions were implemented by the school counselor/psychologist as recommended in the implementation guide, who was also the study contact person. Approximately 5 weeks post-implementation (range 4–6 weeks), the same research assistants returned to the classrooms to administer the follow-up survey. There were no significant difference across schools in the number of students completing both surveys $\chi^2(4, N = 540) = .108, p > .90$. Around the same time students completed the post-survey, the primary investigator contacted the school

Table 1 Demographic characteristics by school

Variable	Sch 1 <i>n</i> = 85	Sch 2 <i>n</i> = 108	Sch 3 <i>n</i> = 15	Sch 4 <i>n</i> = 43	Sch 5 <i>n</i> = 23	Total <i>n</i> = 274	χ^2/F
Mean age (<i>SD</i>)	15.20 (.90)	17.10 (.82)	16.40 (1.18)	15.05 (.93)	16.26 (1.60)	16.07 (1.32)	60.25 ^{a*}
Female (%)	53.66	51.89	28.57	51.63	56.52	51.49	3.34
Mean GPA (<i>SD</i>)	2.95 (.79)	3.01 (.69)	3.08 (.51)	3.09 (.64)	3.36 (.36)	3.06 (.66)	0.97
Year in school (%)							1.88 ^{b*}
Freshman	46.34	4.63	6.67	62.79	30.43	28.78	
Sophomore	53.66	7.41	40.00	25.58	30.43	28.04	
Junior	–	24.07	20.00	11.63	17.39	14.02	
Senior	–	63.89	33.33	–	21.74	29.15	
Ethnicity/race (%)							22.12 ^{c*}
Asian/Pacific Is.	2.38	3.77	–	9.30	–	3.70	
African Amer.	–	9.43	–	9.30	4.54	5.56	
Hispanic/Latino	4.76	1.89	–	25.58	–	6.30	
Caucasian	79.76	73.58	100.0	41.86	86.36	72.96	
Other	13.10	11.32	–	13.95	9.09	11.48	
PRE-test reports of NSSI behaviors (% YES)							
Ever NSSI Thgt	45.24	23.36	53.33	14.29	59.10	33.33	
Past Mo NSSI Thgt	22.62	15.89	40.00	4.88	21.74	18.15	
Ever NSSI Act	39.02	19.44	40.00	9.52	30.43	25.93	
Past Mo NSSI Act	18.52	7.48	20.00	2.38	4.54	10.49	
Friends NSSI	65.00	41.67	53.33	16.67	52.38	46.24	

* $p < .05$ ^a School 2 > 1, 3, 4, 5 and school 3 > 1, 4^b School 2 has significantly more seniors in the sample than the other schools^c Analysis excluded Caucasians, with Caucasians in sample $\chi^2 = 60.31$

counselor/psychologist who implemented the program at each school to conduct a feasibility interview. All procedures were approved by a committee for the protection of human subjects.

Pre-Post Survey

A series of questions that assessed lifetime and current rates of NSSI behaviors, knowledge and attitudes towards NSSI, and help-seeking attitudes and behaviors were created for the purposes of this study. All questions regarding actual NSSI behaviors and thoughts were from the Self-Injurious Thoughts and Behaviors Inventory (Nock et al. 2007), which has been validated for use with adolescents. Items inquiring about knowledge of NSSI and attitudes towards help-seeking were adapted from Aseltine and DeMartino's (2004) evaluative survey of the Signs of Suicide program. Items assessing student attitudes towards self-injuring peers were adapted from Aseltine and DeMartino (2004) as well as Heath et al.'s (2006) survey of attitudes towards self-injury. Items were adapted so that they clearly identified NSSI, instead of suicide (Aseltine and DeMartino 2004), and to be relevant to adolescents

rather than school counselors (Heath et al. 2006). The survey was designed so that demographic questions were answered first; items assessing knowledge were next, followed by questions about actual NSSI thoughts and behaviors. Questions pertaining to attitudes were next and the survey finished with items inquiring about help-seeking behavior.

Knowledge

The knowledge subscale was comprised of 11 true/false items that assess knowledge of NSSI (e.g., "Almost as many males self-injure as females"). The knowledge scale is scored by summing the number of correct responses. Scores can range from 0 to 11, with higher scores indicating more accurate knowledge. A principal components factor analysis, with oblimin rotation, was conducted to evaluate the structure of the items. Using the scree plot and Eigen values greater than 1.0 to determine the number of factors, a single factor accounting for 60.85% of the variance was identified. All items were retained and factor loadings ranged from .65 to .87. The internal consistency of the knowledge scale was $\alpha = .97$.

NSSI Thoughts and Behaviors

To assess actual NSSI, students responded to items from the Self-Injurious Thoughts and Behaviors Inventory (SITBI; Nock et al. 2007). The SITBI was originally developed as a structured interview within a sample of community-recruited adolescents, and is designed to assess a wide range of self-harm behaviors and thoughts including NSSI. The initial psychometric properties demonstrated acceptable interrater ($\kappa = .99$) and 6-month test–retest reliability (average $\kappa = .70$; Nock et al. 2007), as well as strong concurrent validity with other measures of NSSI (average $\kappa = .87$; Nock et al. 2007). For the current study, the NSSI items from the SITBI were presented as a self-report questionnaire instead of being administered in an interview format. Due to the questionnaire format, Likert-type responses were added to better quantify items asking about intensity and frequency.

NSSI thoughts were assessed with a dichotomous (Yes/No) item asking whether or not they “ever had thoughts about wanting to purposefully hurt themselves without wanting to die.” Adolescents who respond *yes* are then asked to indicate on a Likert-type scale the intensity of the thoughts (Very Weak = 1 to Very Strong = 5). Another item inquired whether they had “thoughts about hurting themselves without wanting to die in the *past month*.” Those responding *yes* were asked to rate the frequency of the thoughts on a Likert-type scale ranging from *non-stop/all day long* (6) to *once a month* (1). They were also asked to rate the intensity of the thoughts on the same intensity scale described above. The lifetime and past month items were used as separate variables for descriptive purposes.

Acts of NSSI were assessed with an item asking if the adolescents “have purposefully hurt themselves without wanting to die.” Those who indicated ever having hurt themselves responded to a Likert-type item inquiring about frequency (once = 1 to 101+ = 7). Another item also asked (Yes/No) if the adolescent had actually hurt themselves without wanting to die in the *past month*. For those indicating they had hurt themselves in the past month, the follow-up item, “how many times did you hurt yourself” was asked with responses ranging from *one* (1) to *10 or more* (4). The lifetime and past month frequencies of NSSI were analyzed as separate variables.

For descriptive purposes, additional NSSI behaviors associated with potential help-seeking and contagion were assessed. A single question asks whether anyone knew about their self-injury, which was followed by an item asking who knew (e.g., friend, parent, counselor, sibling, teacher, doctor). Students were also asked “Do any of your friends purposefully hurt themselves (self-injure)?” as well as how many of their friends self-injured and whether they ever self-injure together. Lastly, one item asked about internet use specific to NSSI (e.g., “How frequently do you visit chat

rooms, message boards, or websites on self-injury”) with response options ranging from *Daily* (5) to *Never* (1). A similar question inquired about internet use for other topics.

Attitudes

To assess attitudes about self-injury in peers and perceptions of adolescents’ ability to help peers/respond adequately, students rated how much they agreed with a series of 11 statements. Response options ranged from *Disagree* (1) to *Agree* (4). A principal components factor analysis with oblimin rotation was conducted to evaluate the factor structure of this scale. Using the scree plot and Eigen values greater than 1.0, a three-factor structure accounting for 66.47% of the variance was supported. All factor loadings ranged from .52 to .84 within the different factors. The first factor was comprised of 6 items that reflected *discomfort* with NSSI (e.g., “I would feel uncomfortable if a friend told me s/he was self-injuring”) and had an internal consistency of $\alpha = .83$. The second factor had three items reflecting *avoidance* of peer NSSI (e.g., “It’s none of my business if my friend wants to self-injure”) and had an internal consistency estimate of $\alpha = .77$. The last factor consisted of two items reflecting *approach/helping desires* (e.g., “I really want to know if a friend is thinking about hurting him/herself”) and had an internal consistency of $\alpha = .75$. To obtain scores for each subscale, the value of each item response was summed and then divided by the total number of items on the scale. Consequently, scores can range from 1 to 4 with higher scores being associated with greater discomfort, avoidance, and approach/helping desires.

Help Seeking

To obtain an estimate of help-seeking behaviors, items were generated by the first two authors purposefully for this study to estimate actual behaviors. Adolescents were asked whether they had, in the past 2 months, talked to an adult (e.g., parent, teacher, or guidance counselor): (a) because of self-injury; (b) about a friend they thought was self-injuring; or had (c) gone with a friend to talk to an adult about self-injury. Another item asked if in the past 2 months the person had received treatment because of self-injury. All responses were *yes/no*. A total score for help seeking behavior was calculated by summing the number of yes responses to the items with scores ranging from 0 to 4. Higher scores indicated more help-seeking behavior and this scale had an alpha of .540.

Feasibility Interviews

Qualitative data was obtained via phone interviews with the school counselor/psychologist who implemented the

program. Six questions were asked: (1) How easy was it to implement the different aspects of the program at your school? (2) How useful was the program implementation guide? (3) How did the students respond to the DVD vignettes, the student's success story? (4) Were there any aspects to implementing the program you felt unprepared for? (5) Were there any negative effects or reactions you noticed? (6) Is there anything else you want to tell us about your experience with implementing the program?

Results

Rates of NSSI

Based on the data collected from the pre-survey, approximately 25.9% ($n = 70$) of students endorsed a lifetime act of NSSI (see Table 1). Just over 10% ($n = 28$) reported having engaged in at least one act of NSSI in the month prior to the survey (range = 2.4–20.0%). The mean score for frequency of lifetime NSSI acts was 3.21 ($SD = 1.89$), which based on the Likert-type scale used corresponds to a range of 6–10 times. For the frequency of NSSI in the past month score, a mean of 1.72 ($SD = .84$) was obtained and this corresponds to a range of 2–4 times. Also shown in Table 1 are results regarding “ever having thoughts about NSSI” and thoughts about NSSI in the past month. Of those reporting NSSI, 49 (70.0%) indicated someone knew about the self-injury, and the person who knew was most often a friend (35.9%), doctor (26.6%), or parent/guardian (23.4%). Of particular interest is the finding that overall, 46.24% ($n = 123$) of the sample reported having at least one friend who engages in NSSI, with many of the students indicating they have up to three friends who self-injure (44.3%). Only nine of the students with NSSI reported self-injuring with friends, and these nine students indicated they did so only once.

Iatrogenic Effects Evaluation

To evaluate whether the SOSI program would have an iatrogenic effect and increase the frequency of NSSI thoughts or behavior among students, a chi-square statistic was used to assess the rate of self-reported NSSI thoughts and acts in the past month. Repeated measures MANOVAs were conducted to evaluate changes in the frequency and intensity of the NSSI behaviors and thoughts. As shown in Table 2, the self-reported NSSI acts in the month before and after implementation of the SOSI program did not significantly increase. In fact, there is a potential trend toward past month acts of NSSI to have decreased, $\chi^2(1, N = 497) = 3.092$, $p < .08$, following the program. The finding of no significant increases in the frequency and intensity of NSSI acts or thoughts also indicates the SOSI program did not have iatrogenic effects on self-reported NSSI behaviors.

Knowledge, Attitudes, Help-Seeking

A series of repeated measures ANOVAs were conducted to evaluate the effects of the program on self-reported knowledge, attitudes, and help-seeking related to NSSI. Significant changes were found across these primary outcome variables (see Table 2). While most of the effects are small, there were significant improvements in accurate knowledge about NSSI, $F(1, 219) = 14.97$, $p < .01$, as well as significant changes in attitudes towards NSSI, $F(1, 241) = 39.16$, $p < .01$. Follow-up analyses of the attitudes subscales revealed adolescents reported less discomfort and avoidance of NSSI in peers. Furthermore, there was a significant increase in the approach/helping desire attitude, indicating that the adolescents were more open to helping a friend who was self-injuring (see Table 2). In contrast, there were no significant increases in self-reported formal help-seeking behaviors for self or friends.

Table 2 Pre-post group differences on primary outcome variables

Variable	Pre-test #Yes or mean	Post-test #YES or mean	χ^2 or F	p	η^2
Thoughts NSSI past Mo	49	34	1.10	.294	
NSSI Act past Mo	28	14	3.09	.079	
Freq NSSI Thgt past Mo	3.50(1.92)	3.22(1.59)	0.57	.462	.032
Intensity NSSI Thgt past Mo	3.11(1.08)	3.22(.81)	0.22	.651	.012
Freq of NSSI past Mo	1.50(1.15)	1.44(1.15)	0.02	.901	.001
Freq of NSSI internet use	1.33(.59)	1.56(1.04)	1.15	.298	.063
Knowledge	7.83(1.70)	8.35(1.95)	14.97	.000	.064
Discomfort	2.30(.70)	1.85(1.03)	35.66	.000	.119
Avoidance	1.93(.71)	1.46(.94)	45.04	.000	.147
Approach/helping desire	2.66(1.43)	3.22(.79)	13.01	.000	.047
Total help	1.74(.65)	1.79(.63)	0.09	.772	.005

Qualitative Feasibility Interview Data

All five school counselor/psychologists who implemented the program completed the feasibility interview. All five professionals described the program as being straightforward and easy to use, with one person stating s/he felt it would be easiest to implement the program at the start of the school year so it could be more easily integrated into the school curriculum and other programming. In response to the question about the implementation guide, the comments were overwhelmingly favorable, the most frequently expressed response being that the guide is “very comprehensive, well-organized and user-friendly.” Those implementing the program also commented that the discussion questions and suggested responses were “adequate” and “very useful.” None of the school implementers felt unprepared for administering the program, and four commented that they had adequate resources to respond to questions, concerns, and referrals following the program. There were no negative effects observed by the school personnel during or after the program, and one school reported receiving three referrals. Finally, all the implementers stated that a majority of the students responded favorably to the video vignettes, with some students reading “aloud what was written on the screen;” yet, some also “made fun of the acting.” Four of the five stated that the students were most interested in, and positively responsive to, the success story vignette because the students found the person “to be the most real.” One person commented they thought the program is best designed for use with freshmen and sophomores, but still adequate for the upper grades.

Discussion

Non-suicidal self-injury continues to be a perplexing problem that appears to be on the rise among adolescent groups (Heath et al. 2009). Many schools now have to confront and manage NSSI behaviors among students yet, they report feeling ill-equipped to do so (Heath et al. 2006). While some school staff become aware of an adolescent’s NSSI, it is mostly adolescent peers that know of NSSI behaviors (Fortune et al. 2008a). However, many students are uncertain about how to respond. Consistent with this, were the current study’s findings that prior to the program implementation, most adolescents reported a high level of discomfort and avoidance of discussing their peers’ NSSI. Having access to a structured, effective prevention program that offers training to both staff and students is one way to help prepare schools for dealing with NSSI, and it can provide adolescents with skills to effectively help their NSSI peers, or self, get professional assistance. The Signs of Self-Injury (SOSI) program is the first known program designed

specifically for schools that offers psychoeducation and easily identifiable skills for students, and staff, to use to reduce stigma around help-seeking for NSSI. Given the important role peers may play in influencing adolescent NSSI (Heilbron and Prinstein 2007), the current study aimed to evaluate the effectiveness of the SOSI program in increasing knowledge of, and open attitudes towards help-seeking for NSSI, along with reducing actual NSSI thoughts and behaviors.

Results from the current pilot study suggest that the Signs of Self-Injury (SOSI) school-based program may have promise for being an effective prevention program. The findings from this study are similar to those found for the signs of suicide program (Aseltine and DeMartino 2004) such that adolescents self-reported increased knowledge as well as increased openness to seeking help for their peers, or self, for NSSI. The increased openness towards help-seeking for peers is particularly promising given research documenting that friends are the primary source of support and help regarding self-harm and NSSI (Evans et al. 2005; Fortune et al. 2008a). A program that can potentially reduce stigma and create an open attitude towards help-seeking is viewed as critical for prevention of NSSI by adolescents (Fortune et al. 2008b) and may help to alter the subjective norms of adolescents so that seeking professional help becomes more acceptable regardless of the problem. Thus, the preliminary results from this study are encouraging and support the notion that school-based programming can be potentially effective in assisting adolescents to get help for NSSI (e.g., Joe and Bryant 2007).

In addition, the current findings documented that the adolescents self-reported significant decreases in discomfort with and avoidance of NSSI in friends, which is an important finding since there remains little research on adolescents’ attitudes towards peer NSSI. This finding is also of particular salience given that close to half the sample reporting having at least one friend who self-injured, and friends were the most common person to know about their own NSSI. These results document that while NSSI is likely to be widely known by peers; many adolescents may be at a loss of how to respond to their self-injuring peers due to discomfort so they do not intervene. It appears the SOSI program may provide some necessary knowledge and skills that improve understanding and offer a model of responding that ultimately helps to reduce adolescents’ hesitancy to reach out and assist their self-injuring peers. Using peers as potential gatekeepers for preventing NSSI and other self-harm behaviors is often identified as one of the primary prevention strategies in adolescent groups (Joe and Bryant 2007; Mann et al. 2005), and data from this study further support the need to include peers in NSSI prevention initiatives.

Furthermore, some common barriers to seeking help for self-injury reported by adolescents are shame, stigma, and

fear of the consequences surrounding disclosure of the behavior (Fortune et al. 2008a). The SOSI program appears to address and reduce some of these barriers as evidenced by the positive changes found; therefore, possibly increasing the likelihood an adolescent would seek help for him/herself or a peer for self-injury. Research has suggested that attitudes are predictive of actual behavior (e.g., Ajzen 1991) so a program that increases accepting and open attitudes towards help seeking, and potentially reduces some of the commonly cited barriers (e.g., stigma) to help seeking for self-injury, is encouraging. Future research on the SOSI program may want to draw from the Theory of Planned Behavior (Ajzen 1991) to better understand the mechanisms leading to adolescent help-seeking and potential prevention of NSSI in peers and self.

Also encouraging are the results indicating that the SOSI program does not appear to have an iatrogenic effect. There are frequently concerns that a general school-based program on NSSI may increase rates of NSSI due to contagion, especially given some research suggesting that NSSI behavior is associated with being exposed to others who self-injure (Heilbron and Prinstein 2007; Muehlenkamp et al. 2008). The data collected from this study do not support concerns that the SOSI program will produce self-injury contagion. Both the self-report data and feasibility interview data reflect no observed increases in NSSI behaviors or thoughts. In fact, there was a possible trend towards a decrease in the number of students reporting an act of self-injury in the month after the program relative to a month before program implementation. This potential decrease is encouraging because it indicates that the SOSI program may, possibly, reduce acts of NSSI. However, additional research is needed with longitudinal follow-up before such a conclusion can truly be offered.

In addition to the trend towards decreasing NSSI acts, there were no pre-post increases in the intensity or frequency of NSSI behaviors among those who indicated having thoughts of, or engaging in, NSSI. There also were no changes in the frequency at which students accessed information via the internet on self-injury, which was low to begin with. Thus, it appears schools could use this program without iatrogenic contagion effects. It is important to be cautious, however, because the effect sizes were small and it could also be that students were less likely to endorse items about self-injury due to concerns about being referred for treatment. However, students were aware their responses to the research survey would not be shared with school personnel and informal data collected from the school counselors/psychologists suggest that some students did make referrals. Future studies should consider collecting follow-up data from students about their willingness to self-report NSSI after the program is implemented to account for this potential bias.

While the results of the current study are promising, there are a number of limitations inherent to the study that must be acknowledged. First, the final sample was a relatively small convenience sample comprised predominantly of identified “high risk” adolescents. Research with school-based suicide prevention programs has suggested that brief interventions such as the SOSI program may perform best when aimed at potential risk groups (e.g., Eggert et al. 1995). Thus, this sample limitation may not be of great concern, but further studies need to be conducted that will include a larger and general student body population. The current findings must also be considered as offering very preliminary support for SOSI program effectiveness since a control group was not available. Due to the structure of the study, the effectiveness of the school staff/faculty portion of the SOSI program was not evaluated, which represents another limitation. Future research on the effectiveness of this program will need to include a rigorous evaluation of the faculty/staff portion. Another limitation is that there were no observable behavioral indicators of effectiveness. School personnel did not systematically track the number of student referrals pre-post program implementation. The lack of true behavioral outcomes is consistently identified as a significant limitation of many school-based prevention programs targeting behavioral problems (Kalafat 2003; Mann et al. 2005) that will need to be addressed in future SOSI program evaluations.

Since many schools are faced with increased demands to prevent and intervene with regards to self-harming behaviors among youth, the Signs of Self-Injury program may offer one option. These data provide initial support for the potential effectiveness of the SOSI program in the direction of increasing knowledge, willingness, and comfort with seeking help for self-injury among high school students. Feasibility data collected from the school staff who implemented the program indicates the program is easy to use, efficient, comprehensive, and valuable. While additional research is needed to fully evaluate the Signs of Self-Injury prevention program on a larger scale, the initial data is promising and suggests that schools can begin to address the problem of self-injury in a safe, systematic, and effective manner.

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