Functions and prevalence of self-directed violence in adolescence

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Abstract:

The prevalence of self-directed violence (SDV) is increasing in adolescents. SDV, defined as behavior that is self-directed and deliberately results in actual injury or the potential for injury to self, includes both nonsuicidal self-injury (NSSI) and suicidal behavior. In this study, an intact group of students in grades 8–12 at their school were surveyed about their history of SDV, the size of their peer groups and the strength of relationships with peers, and the function that SDV served for those who reported a history of SDV. Approximately one-third of the youth surveyed reported engaging in one or more SDV behaviors. Functions of both NSSI and suicidal ideation and behavior were primarily for emotion regulation, with youth who engaged in both NSSI and suicidal behaviors reporting a greater need for emotion regulation. While the size of peer groups reported did not differ for youth who engaged in SDV versus those who did not, the more friends an adolescent identified, the less likely the youth was to engage in SDV for emotion regulation.

Article:

The Centers for Disease Control (CDC, 2011) have defined self-directed violence (SDV) as behavior that is self-directed and deliberately results in actual injury or the potential for injury to self. Under the umbrella of SDV, CDC highlights both suicidal and non-suicidal self-injurious (NSSI) behaviors. All forms of SDV are increasing. Among youth, suicide has doubled in prevalence from 2007 to 2014, and is currently the second leading cause of death for ages 15 to 34 (CDC, 2016; Holland, Vivolo-Kantor, Logan, & Leemis, 2017). NSSI has increased by 68% among female adolescents (Morgan et al., 2017), with drastic increases being reported among college freshman (Wester, Trepal, & King, 2017). While the functions of suicide and NSSI are distinct, they are linked, with NSSI providing the acquired capability to engage in suicidal behaviors (Joiner, 2005). These increases in both NSSI and suicidal behaviors enhance the need for prevention and intervention, particularly among youth, given the onset and high rates of self-directed violence among adolescent youth in high school.

In order to better understand the possible link between NSSI, suicidal behavior, and the functions of SDV generally, we undertook a study examining the SDV behaviors of youth and their social groups in a school setting. The results of this study will provide mental health professionals with information regarding NSSI behaviors among youth in grades 8 to 12 within one school, with the ultimate goal of helping mental health counselors better understand the functions of SDV among this young population. This article will also give further clarity around the prevalence rates in this age group, in part to understand if the increases being seen in college students (e.g., Wester, Trepal, et al., 2017) and adolescent females (e.g., Morgan et al., 2017) are reflected in a full-school population.

Background and significance

NSSI, defined as the direct, intentional infliction of tissue damage to oneself without the intent to die (American Psychiatric Association, 2013) consists of behaviors such as cutting, burning one's skin, pulling out one's hair, and hitting oneself. Across the past few decades, NSSI rates have been rising. Across two studies in a high school sample, rates of NSSI increased from 15.9% to 23.2% in a three-year period (Muehlenkamp & Gutierrez, 2004, 2007). Recently, one study showed that the rate of incoming college freshmen reporting engagement in NSSI within the previous 3 months has increased from 2.6% in 2008 to 23% in 2015 (Wester, Trepal, et al., 2017). The age of onset for NSSI ranges between 5 and 27 years old, and an approximate average onset of 13 years old (Ammermann, Jacobucci, Kleiman, Uyeji, & McCloskey, 2018; Wester & McKibben, 2016). The prevalence rates of NSSI among youth in high school are second only to patients in inpatient psychiatric and crisis settings, with 18–37% of youth in middle and high school engaging in NSSI (see Wester & Trepal, 2017 for a review).

Although emotion regulation is a primary function for engaging in NSSI (Wester & McKibben, 2016), youth may engage in NSSI for social reasons (Hodgson, 2004; Nock & Prinstein, 2005). Whereas there has been an ongoing discussion of the functions of NSSI in the literature, there is less discussion about whether suicidal behavior may serve some parallel function. Joiner (2005) posited that suicidal behavior can be due to feelings of hopelessness and burdensomeness. Others have highlighted that individuals may engage in suicidal behaviors to seek revenge (Rudd et al., 2006). What is less known, however, are whether there are functions of suicidal behavior (ideation or attempt) to feel better (positive reinforcement of affect) or to remove an aversive negative emotion (negative reinforcement of affect), or for social reasons (e.g., positive reinforcement to gain attention or negative reinforcement to further isolate). It seems like these affective (or automatic) and social functions may be related to suicidal behavior along with NSSI given the strong relationship between both forms of SDV (Asarnow et al., 2011; Glenn & Klonsky, 2009; Wester, Ivers, Villalba, Trepal, & Henson, 2016).

In addition to understanding the functions behind SDV (both NSSI and suicidal behaviors), a better understanding of the connection to peer groups (e.g., number of friends, strength of friend relationships) is important as both NSSI and suicidal behavior have been shown to be socially learned or engaged in due to social contagion. Specifically, suicidal behavior has been shown to have local and widespread contagion, with individuals engaging in suicidal behaviors after hearing about a suicide completion (for an overview, see Joiner, 2003). Similarly, NSSI has

empirical evidence that the behavior occurs in adolescent peer groups due to social learning and peer selection (Boxer, 2010; Matthew, 1968). Most of this research on peer contagion has been conducted among inpatient populations; however, some researchers have explored NSSI among general adult and adolescent populations. Among these studies, it was determined that nearly half of those who self-injured (43%) reported learning NSSI from others, 21% learned it through media (Heath, Ross, Toste, Charlebois, & Nedecheva, 2009), and still, others reported being encouraged to self-injure by other individuals (Nock, Prinstein, & Sterba, 2009). While these studies provided important information about how adolescents learn about and engage in NSSI behaviors, what these studies *do not* provide is an insight into the size of peer friend groups of individuals who engage in SDV versus those who do not among a group of youth in a school setting. This information is important to know if those youth who engage in SDV (suicidal behavior, NSSI, or both) have similar or different sized peer networks. It is assumed they may have smaller peer friend groups given that adults who self-injure reported having very few people that they reached out to for help for their NSSI behaviors (Wester, Clemens, & McKibben, 2015). Reaching for help and simply having friends within a peer group, however, may serve different purposes, and thus may differ in network size.

Understanding the peer network size is important as individuals who engage in NSSI in isolation, without others knowing, are at increased risk of suicidal behavior (Glenn & Klonsky, 2009). Glenn and Klonsky's findings suggest that individuals who are self-harming and who may not be part of a larger social group may actually be suicidal. Therefore, in a school setting, or for families, these are the individuals who should be targeted immediately for intervention due to their higher risk. Yet, this risk is not truly known in a school setting or among youth (as Glenn & Klonsky's study was conducted among the general public, over the age of 18, through a telephone sampling method). Researchers who have explored NSSI and suicide in a school have not explored the peer group in relation to SDV and have received less than one-third of the school as respondents (e.g., Muehlenkamp & Gutierrez, 2004). Second, we have little knowledge about the way that the functions of SDV may differ for youth who have engaged only in NSSI, versus those who have engaged in NSSI and suicidal behavior combined. This lack of knowledge inhibits both the ability of counselors to know the best approach to target self-directed violence among adolescents within their settings.

The research questions for this study include: (1) What are the prevalence rates of SDV among youth in 8th through 12th grade within a school? (2) What is the typical size of peer groups, and the strength of the relationships with peers, of those who report versus those who do not report SDV? (3) Of the youth who engaged in SDV, what are the functions (automatic/affective, social) that are most frequently reported? (4) Is there a difference in the function(s) reported by those who have a history of only NSSI versus those who endorse both NSSI and suicidality? (5) Is there a relationship between the size of the friend group and the strength of the relationships with friends and the SDV functions?

Methods

Sample

The sampling frame included all enrolled youth (*N*= 277) in grades 8 through 12 in a small independent school in the Southeast. Of the total student body within the school, 12 youth were opted out by their caregivers, 14 youth communicated they were opting out, and 33 youth were absent and/or declined without communicating they were opting out. Thus, a total of 218 youth responded (78.7% response rate). Of adolescents who responded, approximately half identified as male (55.5%; *n* = 121), with 45.5% (*n* = 97) identifying as female, with an average age of 15.40 *(SD*= 1.53, range 12–18 years old). Just over 70% (*n* = 154) identified as Caucasian or White, 22 youth (10.1%) identified as Asian American or Asian, 12 youth (5.5%) identified as African American or Black, 11 youth (5.0%) identified as Hispanic or Latinx, 5 youth (2.3%) identified as Native American or American Indian, and 7 youth (3.2%) identified as another race or ethnicity. Seven students (3.2%) declined to identify their race/ethnicity on the questionnaire. Youth were also relatively evenly divided between grades, with 41 adolescents (18.8%) enrolled in grade 8, 45 youth (20.6%) in grade 9, 45 youth (20.6%) in grade 10, 42 adolescents (19.3%) in grade 11, and 43 students (19.7%) in grade 12. Two students declined to identify their grade. The demographics of the sample was representative of the larger student body.

Procedures

After IRB approval was granted, the school administration provided parents and legal guardians with an informational letter about the study and informed them about their ability to opt their child out of the study. This form of passive consent was requested by the school, based on familiarity of parents with this form of consent for research studies. All adolescents were provided with a packet on the day of the study. If youth were not opted out of the study by their parents, they were provided the study survey packet. Youth whose parents opted them out of the study received an alternative survey packet that did not connect directly to the study. No difference in consent procedures was used for students who had reached age 18. Prior to the survey packets being distributed to youth in the classroom, a brief recruitment informational video was shown, which described the study and walked adolescents through the assent form. This way, all adolescents in the school were simultaneously provided the same information about the study, minimizing differences that may have occurred across homeroom teachers or researchers. The assent form also listed resources available both at and outside of the school if students experienced any distress during the survey. Youth were able to opt out of the study at any time. Youth were asked to return the packets, folded, to the front of the room and place them in a manila envelope. All packets were de-identified so that all responses were anonymous. All adolescents in grades 8 through 12 in the school were provided a $5 credit to the school bookstore as an incentive and an acknowledgment of their time.

Measures

Study survey packets included three measures and a demographic form. These measures included:

Self-directed violence (SDV)

Self-directed violence was defined as NSSI behaviors as well as suicidal behaviors (including both suicidal ideation or suicide attempt). Due to school request, students in the school were not

provided a formal suicide assessment but were asked two questions regarding suicidal behaviors: Have you ever had thoughts of killing yourself? And Have you ever attempted suicide or tried to kill yourself? Youth were asked to indicate yes/no to both questions. *The Deliberate Self-Harm Inventory Adapted* (Gratz, 2001; Wester & Trepal, 2010) was used to assess nonsuicidal self-injury (NSSI). The DSHI-A included 11 specific methods of NSSI in which individuals endorse yes or no to whether they have *ever* (lifetime) or *currently* (past 3 months) used this method to self-harm without the intention to die. Four outcome scores are calculated for the DSHI-A: (1) lifetime NSSI (yes/no) indicating if the individual has ever in their entire life engaged in NSSI; (2) lifetime NSSI methods, which is a numerical count from 0 to 11 regarding the number of methods someone has used in their lifetime to self-injure; (3) current NSSI (yes/no) indicating if the individual is currently engaging in NSSI behaviors, with current defined as self-injured within the past 90 days; and (4) current NSSI methods, which is a numerical count from 0 to 11 regarding the number of methods someone currently uses to self-injure. The DSHI-A has been used in multiple studies with adolescents and transitional aged youth with high reliability. Construct validity has been evidenced with the DSHI and DSHI-A (Gratz, 2001; Murray, Wester, & Paladino, 2008).

Reasons for SDV

The *Functional Assessment of Self-Mutilation* (FASM; Nock & Prinstein, 2004) is a self-report measure, with 22 questions that inquire to the reasons why an individual may engage in self-harm behaviors. Participants respond on a 4-point Likert scale (anchored by 0 "never" to 3 "often") to indicate the function that self-harm serves for the individual. The FASM has a four-function structure, which results in four sum scores: (1) automatic (emotion regulation) function negative reinforcement, (2) automatic function positive reinforcement, (3) social function negative reinforcement, and (4) social function positive reinforcement. For the current study, mean scores were created for each function. The FASM has been found to have adequate to strong evidence of validity and reliability (Nock & Prinstein, 2004). Only youth who indicated they engaged in NSSI were asked to complete this measure. Internal reliability of the FASM in the current sample was high (Cronbach's alpha = .83).

Demographic measure

Each student was asked to respond to questions indicating their sex, race and ethnicity, age, and grade. They were also asked to list up to seven friends they identified with (using a generic id created from prompts, not a name, to ensure anonymity) to assess the size of their friend group. For each friend they identified, youth were asked about how close they felt that friendship was on a Likert-type scale ranging from 1 (not really close, we just hang out every now and then) to 6 (very close, we share almost everything with each other).

Students opted out by caregivers

While not included in the final sample size, the 12 students whose parents/legal guardians opted them out of the study were provided with alternative survey packets to ensure that no youth felt as if they were treated differently or singled out. Alternative packets included eight questions asking students their preference of three pictures (i.e., mandalas) and asked them to explain their

preference, and asked students to generate words with a various number of syllabus or rhyming words. The alternative packet appeared similar in length to the main survey packet, but contained fewer questions, did not ask personal or identifying information, and did not ask information related to the specific study.

Data analysis

Descriptive analyses were used to answer the first three research questions. Research question three was also explored utilizing independent t-test. Research question four was explored using ANOVA, with the final research question using correlations to explore relationships. For most analyses, the full sample was used; however, only those students who reported engaging in NSSI and/or suicidal behaviors were asked to complete the FASM. Thus, analyses using data from the FASM (research questions 3 through 5) are drawn from a subgroup of the sample.

Results

Prevalence of SDV

Of the 218 respondents in grades 8 through 12, the majority did not engage in self-directed violence (SDV; $n = 149$, 68.3%), with one adolescent not answering the SDV questions. However, this left 68 adolescents (31.2%) who self-reported engaging in one or more forms of SDV. Specifically, 22 adolescents (10.1%) identified as having engaged in both NSSI and suicidal behaviors, 33 (15.1%) engaged in NSSI only, and 13 (6.0%) reported suicidal behaviors only. Breaking these SDV behaviors down further, 33 youth reported currently having or having had suicidal ideation, while 13 reported they had attempted suicide, and 11 of these individuals reported experiencing both suicidal ideation and had attempted suicide. Fifty-five ($n = 55$) youth indicated they had engaged in NSSI at some point in their life, with an average onset of NSSI being 12.70 years old $(SD = 2.16$, range 9–18 years old; note only 27 students identified the age of NSSI onset), while 25 adolescents reported currently engaging in NSSI behaviors. Cutting was the most common NSSI method used; however, youth noted using between 1 and 6 methods to NSSI throughout their lifetime ($M = 1.95$, $SD = 1.22$) and currently within the past 90 days ($M = 1.6$, $SD = 1.19$).

Peer network size and strength

The number of friends identified by the youth who engaged in self-directed violence was compared to the number of friends identified by the youth who did not. No significant difference was found between the two groups of individuals ($t = .94$, $p > .05$; M = 6.67, $SD = 1.07$, range 1 to 7 friends for no SDV youth; $M = 6.52$, $SD = 1.27$, range 2 to 7 friends for SDV youth). The strength of friendship also did not differ for youth that engaged in SDV ($M = 4.44$, $SD = .91$) and youth who did not ($M = 4.40$, $SD7$; $t = -.27$, $p > .05$).

Functions of SDV

Questions three, four and five were answered with a smaller amount of the sample size given that only youth who engaged in SDV were asked to respond to the FASM. However, out of the 68

adolescents who engaged in SDV, 38 provided full data for the FASM. Thus, only 38 youth are included in the following analyses.

In exploring the mean scores of the four functions of SDV from the FASM, youth reported using SDV to reinforce the removal of negative feelings, or to feel a sense of calm or control (i.e., automatic negative reinforcement; M= 1.07, SD= 1.21 on a scale of 0 to 3) compared to automatic positive reinforcement (i.e., emotion regulation to feel a positive emotion; M= .89, SD =.86), or social negative or positive reinforcement reasons (M= .44, SD= 1.18; M= .21, SD= .34, respectively). Not all youth who reported engaging in SDV responded to the reasons they used SDV; however, of those that responded, it was explored to see if the reasons for engaging in SDV differed across type of SDV (i.e., NSSI only (n= 16) or both NSSI and SI (n = 20); youth who reported they engaged in suicidal behaviors *only* were excluded since only 2 individuals provided responses to the FASM, which did not provide enough power for analysis of that category). Utilizing an ANOVA, statistically significant differences were found between groups on automatic negative reinforcement (F (1, 35) = 13.97, p < .01, n^2= .29), for automatic positive reinforcement (F (1, 35) = 7.202, p < .05, n^2= .17), with adolescents who reported a history of engaging in both NSSI and suicidal behavior reporting higher levels of automatic functions as reasons they engaged in SDV than youth who utilized NSSI but did not report a history of suicidal behavior. No statistically significant differences existed between the two SDV categories (NSSI only; both NSSI and suicidal behaviors) for social functions (F (1, 35) = .11, p > .05, n^2= .003 for negative reinforcement; F (1, 35) = .13, p > .05, n^2= .003 for positive reinforcement). This latter non-significance may be due to low power given the smaller sample size utilized.

Peer network and functions of SDV

When looking specifically at participants who both responded to the FASM (n = 38) and engaged in SDV, the number of friends who individuals listed was negatively related to both the positive and negative reinforcement of the automatic/affective function (r = − .50, p < .01; r = − .37, p < .05, respectively). This result suggests that as the number of friends identified by an individual increases, individuals are less likely to utilize SDV to regulate emotion. The number of friends was not statistically related to the social function (r = .17, p > .05 for positive reinforcement; r = .09, p > .05 for negative reinforcement). The average strength of relationships with friends was not statistically related to any of the social functions (r = − .05, p > .05 for positive reinforcement; r = .10, p > .05 for negative reinforcement) or automatic functions (r = .02, p > .05 for positive reinforcement; r = − .05, p > .05 for negative reinforcement) for SDV.

Discussion

Given the increases in self-directed violence (SDV), specifically both NSSI and suicidal behaviors (CDC, 2016; Holland et al., 2017; Morgan et al., 2017; Wester, Trepal, et al., 2017), it is important for counselors working with adolescents, regardless of setting, to understand how to identify and engage with youth who might be engaging in self-directed violence. The school population surveyed is not unique in having a relatively high rate of students engaging in self-harming behaviors; similar to findings in other studies (see Wester & Trepal, 2017), about one-third of the school population reported engaging in one or more forms of SDV. Additionally, of the functions and reasons for engaging in SDV, youth reported a higher level of using SDV to

regulate emotions, with very few reporting utilizing SDV for social functions. Thus, the youth in this study reported they utilized NSSI or engaged in suicidal behaviors to either feel better or feel more in control of thoughts and emotions (automatic function, positive reinforcement) or to remove aversive feelings that led to increased distress (automatic function, negative reinforcement). Social functions for engaging in SDV were rarely noted by the adolescents in this study, indicating that using SDV to gain attention or even to isolate oneself was reported as infrequent, if at all. This result is similar to what other researchers have found, that emotion regulation is more frequently a function of NSSI than social function (Andover & Morris, 2014; Jonsson et al., 2017). Thus, this study adds a current look at the functions of SDV in an 8th–12th-grade school setting and demonstrates that despite the increase in media presence of NSSI (e.g., Adler & Adler, 2007), the functions of NSSI seem to be remained consistent across time.

Additionally, though the results of this study reinforce the primacy of emotion regulation as a driving function of NSSI, through examination of the roles that emotion regulation and social functions of SDV in general and suicidal ideation and behaviors in particular, this study expands our knowledge about the role of social functions in SDV. For example, youth who engaged in *both* NSSI and suicidal behaviors reported a greater need for emotion regulation, as evidenced by their significantly higher reports of using SDV for positive and negative reinforcement of automatic function. Thus, youth who engage in both NSSI and suicidal behaviors may ultimately be less able to regulate emotion, which in turn might increase a sense of hopelessness, and an assumption that things will not get better. While this relationship has been hypothesized by Wester and McKibben (2016) based on their finding that current NSSI engagement and the number of methods currently used to self-injure were the strongest predictors of suicidal ideation, the results of this study underscore this finding.

It is clinically important to understand that youth primarily utilize both NSSI and suicidal behaviors for emotion regulation, and that adolescents who reported having engaged in *both* forms of SDV reported an even higher need for emotion regulation. This result reveals the need for clinical mental health counselors—and indeed all mental health professionals who work with youth—to be aware that SDV generally, and NSSI, specifically, may serve an automatic or emotion regulation function (Hodgson, 2004; Nock & Prinstein, 2005). Thus, assessing one's ability to identify, as well as cope with, emotions is an important component in working with youth who may be engaging in, or at risk for engaging in, both NSSI and suicidal behaviors.

It is also notable that the number of friends reported by youth did not significantly differ for those who engaged in SDV versus those who did not, as participants identified a similar number of youth in their peer groups. They also reported similar strength, or closeness, in peer friendships. This result offers a different perspective in terms of friend groups, or number of friends, than Glenn and Klonsky (2009) and Wester et al. (2015). Glenn and Klonsky found that individuals who self-injure in isolation are at higher risk of suicidal behaviors. Wester and colleagues reported that the number of people (i.e., friends, parents, medical professionals, mental health professionals) individuals who self-injured reached out to for help with NSSI was smaller than support networks described by other individuals. This result may be due to a difference in questions asked, as adolescents in the current study were solely asked to identify who they were friends with, and how strong these friendships were. Previous researchers,

however, have inquired who and where they engaged in self-injury, and who they reach out to for support specifically for the self-injury, rather than the actual size of their peer network. The finding that youth who engage in SDV do not report having peer friend groups that differ in size from adolescents who do not engage in SDV may also lend credence to the idea that even adolescents who appear to be socially high-functioning may struggle with SDV (Zila & Kiselica, 2001).

It is also important to note that while the size of the friend group reported does not directly differ for youth who engage in SDV versus those who do not, participants who identified more friends in their group were less likely than other participants to engage in SDV for emotion regulation. That is, youth who reported a greater number of friends reported lower scores on the automatic function on the FASM. It may be that they seek support from friends, or that simply having close friends may decrease an adolescent's sense that feelings are out of control or the perceived need to engage in SDV in order to regulate emotions.

Implications for practice

Given the high rates of self-directed violence in the school, and the relationship between SDV and emotion regulation, counselors may consider not only how they can contribute to helping their clients learn to regulate emotions but also how to help clients practice those strategies outside of session, in both their home and school environment. Individuals who self-injure engage in high levels of both maladaptive and adaptive forms of coping, but may be doing so ineffectively (Trepal, Wester, & Merchant, 2015). Therefore, it is important to concretely walk through how to utilize various coping skills that will regulate emotion, such as breathwork, mindfulness, and creative activities such as journaling or expressive arts (e.g., Arch & Craske, 2006; Lalande, Bambling, King, & Lowe, 2012; Wester & Trepal, 2017). Enhancing problem-focused coping has been found to be one of the main contributing factors to decreasing or extinguishing NSSI behaviors (Wester, Downs, & Trepal, 2016).

Given the average age of onset of NSSI and suicidal behaviors is early adolescence (around age 13), but as early as 5 years old (Ammermann et al., 2018; Wester & McKibben, 2016), it is important to begin emotion identification and labeling in childhood, providing even young children practice and the ability to gain efficacy on identifying and labeling emotions. In particular, it may be possible for community-based mental health providers to work with schools in general, and school counselors specifically, to provide outreach in elementary schools related to feeling identification and emotion regulation, as NSSI is related to the inability to identify and label emotions (Authors, in press). Not only can this help with primary prevention efforts around NSSI (Wester, Wachter Morris, & Williams, 2017) but also can facilitate the connection that mental health counselors have with their local schools. For example, school counselors often rely on community-based mental health providers to provide services when those students have needs that are outside either their scope of practice or their scope of competence (Lemberger, Wachter Morris, Clemens, & Smith, 2010), and increasing collaboration between community-based mental health professionals and school counselors could increase effective communication and appropriate referrals.

The transition from older childhood to adolescence can prove to be challenging for youth, as there are often significant changes biologically, socially, cognitively, and emotionally during the middle-school years (Scales, 2010), as well as in the learning and social environment from elementary to middle school (Eccles & Roeser, 2011; Gutman & Midgley, 2000). Thus, in working with youth who are approaching middle school age, counselors may need to support adolescents in not only identifying emotions but also practicing and learning emotion regulation. For example, counselors can work with youth to generate ideas for adaptive ways to regulate emotions. We would also stress that while simply providing options (e.g., journaling, going for a walk, breathing exercises) can be helpful, most youth who engage in SDV engage in both adaptive and maladaptive forms of coping (Trepal et al., 2015). This result suggests that while they may have ideas of things to do to cope, they may not actually know how to use those coping skills effectively, and thus mental health providers may want to assess how adolescents engage in these coping skills. As an example, "taking a deep breath" and "talking a walk" are often identified as coping skills. Deep breathing, however, if done rapidly, can increase anxiety or aggression. Similarly, when an adolescent takes a walk, ruminating on life stressors may lead to increased stress, negating its effectiveness as a coping skill. Thus, counselors may want to help youth identify ways to embed mindfulness activities in the walk, or other skills that increase the effectiveness of its use as a coping skill. Emotion regulation is a key life skill and integrating ways for youth to learn or build these skills is vital for youth.

Finally, being able to identify and assess how adolescents identify, label, and regulate emotions can be one way to assess potential SDV risk. Based on responses from this sample of adolescents, the size of friend groups, or whether one feels isolated or connected, is not the determining factor in whether or not an adolescent engages in SDV. However, for youth who have already engaged in SDV, the more friends they were able to identify the less they reported the need for emotion regulation (although this may not translate to less engagement in SDV). Thus, SDV for adolescents with fewer friends may be primarily for emotion regulation, while those who report a greater number of friends may also be engaging in SDV for other reasons beyond just emotion regulation. More assessment is needed.

Limitations and future research

While the findings in the current study expand what we know about SDV among adolescents, some limitations are important to note. Specifically, the sample came from one school in the southeast, which may not be generalizable to other schools or school populations. However, exploring just one school does provide an overall prevalence rate of SDV within a closed group of youth. Additionally, while NSSI was assessed using a validated measure, suicidal behavior was assessed with only two questions (one for ideation and one for suicide attempt). This choice to assess suicidal behavior was at the request of the school, which preferred to replace the longer validated measure of suicidal behavior with two brief questions on suicidal behavior. While this way of asking about suicidal behavior has been utilized successfully by other researchers (Lowry, Crosby, Brener, & Kann, 2014; Nock, Hwang, et al., 2009), it should be noted as a limitation. Finally, there were limited responses to the FASM. While this result was primarily because only individuals who self-injured were asked to respond to the FASM, as it asks specifically for reasons of engaging in self-mutilation, not all youth who reported engaging in suicidal or NSSI behaviors responded to it. This may have lowered overall statistical power.

Despite lower power, statistically significant differences were found within the emotional regulation subscales of the FASM; however, we would encourage further research with a larger sample to explore the differences between functions of SDV.

Having a larger sample size of both youth who engage in NSSI and suicidal behaviors in isolation and combination will be important in further exploring the functions of SDV. Additionally, exploring the functions of SDV with actual coping behaviors would be important. Being able to combine the functions for SDV with coping behaviors specifically will help counselors understand where to directly target interventions for youth. While the number of friends and strength of friendships did not distinguish between adolescents who engaged in SDV and those who did not, it may be important to take a closer look at these friend groups. Specifically, it is important to look at the social networks of students who are involved in SDV to determine if the friends with whom they are connected are also engaging in SDV, or if the peer groups are a combination of youth who self-harm and those who do not. Additionally, determining (similar to Glenn & Klonsky, 2009) if SDV occurs in isolation regardless of the size of friend networks, or if the engagement in SDV is due to similar behavior among their peer group – as this may alter the types of interventions that counselors may provide for you who self-harm.

Conclusion

With both suicidal behavior and NSSI behaviors increasing among adolescents and young adults, it is important to understand factors that connect them, but also identify youth at risk of engaging in SDV. Size of friend networks does not appear to distinguish between youth who engaged versus do not engage in SDV; however, the number of friends an adolescent identifies does seem to negative relate to the degree to which they use SDV to regulate emotions. Regulation of emotions, whether to feel calmer or something perceived as more positive or to remove experiences of distress, seems to be a primary function reported by the youth who engaged in both NSSI and suicidal behaviors. As emotion regulation was reported as being used more often by the youth who engaged in NSSI and suicidal behaviors throughout their lifetime this signals a risk factor that may need to be assessed more closely by mental health counselors.

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