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Associations between connections to parents and friends and non-suicidal self-injury among adolescents: The mediating role of developmental assets

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Abstract

Background: We tested a model that incorporated potential developmental assets through which connections to parents and friends reduce the likelihood of engaging in non-suicidal self-injury (NSSI) among adolescents.

Method: Data came from the 2016 Minnesota Student Survey, a population-based survey of 8th, 9th, and 11th grade students ($N = 119{,}452$). Chi-square test, *t*-test, and correlations evaluated bivariate relationships between all variables. Indirect effects of three developmental assets (social competency, positive identity, and empowerment) were modeled simultaneously on associations between connections to parents and friends, and past-year NSSI.

Results: Bivariate analyses demonstrated protective effects of parent and friend connections on NSSI and that all developmental assets were negatively associated with NSSI. After accounting for demographic variables and associations between developmental assets in a multiple mediator path model, connections to parents showed a stronger, negative direct relationship with NSSI than did connections to friends. Developmental assets, especially positive identity and empowerment, accounted for a greater proportion of the effect of connections to friends on NSSI than the effect of connections to parents. Finally, social competency was no longer significantly related to NSSI in the multiple mediator path model.

Conclusion: Clinical efforts to prevent NSSI should focus on enhancing adolescents' sense of positive identity and empowerment, as well as connections to parents and prosocial friends.

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NSSI, developmental assets, parent connectedness, friend connectedness, adolescent

Introduction

Non-suicidal self-injury (NSSI; deliberate destruction of body tissue without suicidal intent and not socially sanctioned) represents a public health problem among adolescents, with approximately 18% of adolescents reporting NSSI (Muehlenkamp, Claes, Havertape, & Plener, 2012). Although NSSI remains distinct from a suicide attempt (Kerr, Muehlenkamp, & Turner, 2010; Muehlenkamp & Kerr, 2010), over time, repetitive self-injury increases the risk of suicidal behavior (Ribeiro et al., 2016; Whitlock et al., 2013). To prevent NSSI, clinical interventions and prevention programming need to employ the dual strategy of addressing known risk factors associated with self-injury, while simultaneously building protective factors that buffer adolescents from self-injurious behavior.

Relationship between social connections and NSSI

A close relationship with a caring parent and connections to prosocial friends constitute commonly observed correlates and predictors of resilience and healthy youth development (Blum, 1998; Masten, 2009). Extensive research with adolescents has demonstrated strong, protective effects of connections with prosocial adults, particularly parent connectedness, on emotional well-being and health-risk behaviors among youth (e.g., Resnick et al., 1997). For example, strong, positive relationships with parents and other caring adults protect adolescents from bullying involvement, school tardiness/absence, risky sexual behaviors, substance use, violence, and suicidality (Carver, Elliott, Kennedy, & Hanley, 2017; Sieving et al., 2017; Stoddard, McMorris, & Sieving, 2011; Taliaferro & Muehlenkamp, 2014; Whitlock & Wyman, 2014; Yugo & Davidson, 2007). In addition, researchers have recently demonstrated the protective effects of parent connectedness on engagement in NSSI among adolescents (Muehlenkamp, Brausch, Quigley, & Whitlock, 2013; Taliaferro & Muehlenkamp, 2017; Taliaferro, Muehlenkamp, Borowsky, McMorris, & Kugler, 2012).

Some research also demonstrates protective effects of friends on NSSI behavior, though the findings are less consistent and associations often weaker, compared to those for parent connectedness. For example, Muehlenkamp et al. (2013) found that lower levels of perceived friend social support distinguished young adults who engaged in repetitive NSSI from their non-self-injuring peers, whereas low levels of social support from family members distinguished the repetitive NSSI group from both the no-NSSI and single-episode NSSI groups. Thus, connections with friends may not demonstrate as large an effect on NSSI among young people as the effect of connections with family/parents (Muehlenkamp et al., 2013; Taliaferro & Muehlenkamp, 2017; Taliaferro et al., 2012; Whitlock et al., 2013).

Relationship between developmental assets and NSSI

Developmental assets, or positive building blocks in young people's lives, are critical to positive youth development (Mannes, 2006). In 1990, the Search Institute (n.d.) created a widely cited and used framework of developmental assets identifying skills, experiences, relationships, and behaviors that enable young people to reach their full potential. Developmental assets are often categorized as external (e.g., empowerment, boundaries, and expectations) and internal (e.g., social competency, positive identity) (Scales, 1999). Researchers have studied the effects of developmental assets

on different health-risk behaviors among adolescents (Leffert et al., 1998). For example, greater developmental assets during adolescence are associated with less cigarette smoking, substance use, unhealthy eating behaviors, aggression, and violence, and more physical activity (Benson & Scales, 2009; Bleck & DeBate, 2016; French et al., 2001). Furthermore, positive identity assets are related to reduced depression and suicidality (Leffert et al., 1998).

To our knowledge, investigators have not examined relationships between specific internal and external assets and NSSI. Examining these relationships remains important, given the prevalence of NSSI among adolescents from the general community (Muehlenkamp et al., 2012) and associations between NSSI and suicidal behavior (Kiekens et al., 2018; Muehlenkamp, Xhunga, & Brausch, 2018; Ribeiro et al., 2016).

This study

Although researchers have demonstrated the protective effects of connections to parents and friends on NSSI among adolescents, they have not examined the mechanisms through which these factors influence self-injurious behavior. Further lacking is an examination of relationships between specific developmental assets and NSSI. This study sought to address these gaps in the literature by testing a model that incorporated potential mechanisms through which connections to parents and friends reduce the likelihood of engaging in NSSI behavior among adolescents. Specifically, the aims of this investigation were (1) to describe bivariate relationships between connections to parents and friends; developmental assets of social competency, positive identity, and empowerment; and NSSI and (2) to evaluate the indirect effects of the three developmental assets on relationships between connections to parents and connections to friends and NSSI, when all relationships are estimated simultaneously in a multiple mediator path model. Understanding the effects of developmental assets on NSSI, and the potential mediating roles of specific internal and external assets on relationships between parent and friend connections and NSSI, will inform healthy youth development programming as well as clinical and public health interventions to prevent NSSI behavior among adolescents.

Data and methods

Study design and sample

The Minnesota Student Survey is an anonymous population-based survey conducted every 3 years with students in grades 5, 8, 9, and 11 by the Departments of Education, Health, Human Services, and Public Safety (Minnesota Center for Health Statistics, n.d.). All public school districts are invited to participate, and in 2016, 85% of districts had at least one eligible grade participate. Only students in grades 8, 9, and 11 received questions regarding mental health, including NSSI. Thus, the current analysis was restricted to these grades. In 2016, 73% of 8th, 71% of 9th, and 61% of 11th grade students participated in the survey, resulting in a total sample of 126,868 students. The analytic sample included 119,452 students who answered the item about NSSI. Slightly more females (50.2%) than males (49.8%) participated in the survey, and more students in grades 8 and 9 (35.6% in each) than grade 11 (28.8%) participated. Students reported their race/ethnicity as White non-Hispanic (70.6%), Hispanic (9.3%), Asian (5.9%), Black (5.6%), Native American (1.2%), Pacific Islander (0.2%), and mixed race (7.4%). Passive parental consent was used, and students voluntarily agreed to participate. Additional details regarding the survey methodology are available elsewhere (Minnesota Student Survey Interagency Team, 2016). The University of Central Florida Institutional Review Board approved this secondary data analysis.

Measures

Dichotomous dependent variable: NSSI. NSSI was assessed with the item: "During the last 12 months, how many times did you do something to purposely hurt or injure yourself without wanting to die, such as cutting, burning or bruising yourself on purpose?" Due to the skewed nature of responses, we created a dichotomous variable for NSSI to contrast students who responded engaging in these behaviors one or more times, as compared to those who reported never.

Independent variables: connections to parents and friends. We assessed two protective factors measuring connections to parents and friends similar to previous research (Eisenberg & Resnick, 2006; Taliaferro et al., 2012). First, three items were used to create a composite parent connections variable. Students indicated how often they could talk with their mother and father (two separate items) about problems they were having, and whether they felt their parents cared about them. Ordered Likert-type response options fell on a 5-point scale. A composite variable was created by calculating the average of these three items (Cronbach's $\alpha = .66$). Higher values indicated greater levels of connections to parents. The survey did not provide youth with a definition of parent. Thus, they could answer these questions based on their personal perspectives of whom they considered parents. Second, perceptions of connections to friends consisted of a single item asking how much students felt friends cared about them. Response options also fell on a 5-point Likert-type scale, with higher values indicating greater perception of connections to friends.

Mediator variables: social competency, positive identity, and empowerment. Survey items were adapted from the Developmental Assets Profile (DAP) developed by the Search Institute (1997). Three subscales were included: social competency, positive identity, and empowerment. Social competency was assessed with eight items, such as "I say no to things that are dangerous or unhealthy" and "I am sensitive to the needs and feelings of others" ($\alpha = .84$). Six items assessed positive identity. Example items included "I feel in control of my life and future" and "I find good ways to deal with things that are hard in my life" ($\alpha = .84$). Empowerment was assessed with three items, including "I feel valued and appreciated by others" and "I am included in family tasks and decisions" ($\alpha = .83$). Response options ranged from "Not at all or rarely" to "Extremely or almost always" on a 4-point Likert-type scale. Three separate variables were created by calculating the average of sub-scale items for each variable. Higher values reflected higher levels of developmental assets.

Control variables: background characteristics. We used five control variables to adjust multivariate analyses. First, students' sex was coded as "Female" and "Male." Second, two categorical variables were created to compare 9th and 11th graders to 8th graders (reference group). Third, two questions assessing Latino/Hispanic ethnicity and race were combined into a 6-category race/ethnicity variable (Non-Hispanic American Indian, Black, Asian/Pacific Islander, White, Multiple races, and Hispanic). For simplicity, we dichotomized race/ethnicity to contrast non-White students to non-Hispanic, White students. Fourth, whether or not students indicated they received free or reduced-price lunch (FRL) was used as a proxy for socioeconomic status. Fifth, geographic location of school attended provided the ability to contrast students who attended school in the Minneapolis-Saint Paul (Twin Cities) metropolitan area versus other areas of Minnesota.

Statistical analysis

We conducted both bivariate and multivariate analyses on the survey data, proceeding in a series of steps. In the first descriptive steps, we used chi-square tests to describe differences in the prevalence

Table 1. Prevalence of non-suicidal self-injury (NSSI) by student demographic characteristics.

Characteristics	Past-year NSSI	
	Frequency (%)	χ^2 test
Sex		
Male	5458 (9.20%)	$\chi^2 = 3653.8$, $p < .001$
Female	13,112 (21.90%)	
Grade		
8th graders	6803 (15.98%)	$\chi^2 = 27.8$, $p < .001$
9th graders	6788 (15.95%)	
11th graders	5064 (14.75%)	
Race/Ethnicity		
White	11,947 (14.27%)	$\chi^2 = 390.0$, $p < .001$
Non-White	6574 (18.83%)	
Free/reduced lunch eligible (FRL)		
Yes	6885 (21.24%)	$\chi^2 = 1064.2$, $p < .001$
No	11,628 (13.52%)	
School location		
Twin Cities metropolitan area	9731 (15.41%)	$\chi^2 = 4.2$, $p < .05$
Other areas of Minnesota	8924 (15.85%)	

of NSSI by background characteristics (Table 1). We then used *t*-tests to examine differences between students who reported NSSI, compared to those who did not report NSSI, regarding levels of connections to parents and friends and the hypothesized mediators. Pearson's correlations also were used to examine hypothesized bivariate associations among all of the study variables.

To assess the hypothesized model with its multiple mediational relationships, path analysis or structural equation modeling with manifest variables was conducted (Kline, 2005). Missing data were treated in Mplus with the model-based full-information maximum likelihood (FIML) procedure (Graham, 2009), and we used Monte Carlo integration to evaluate the joint effects of the three potential mediators simultaneously. Of the estimation methods for dichotomous outcomes in Mplus (MLR and WLSMV), we selected the MLR estimation for its relative strengths, including more intuitive interpretation of the coefficients as logits and odds ratios (ORs). The path model yielded three goodness-of-fit statistics: (1) the deviance test (–2Loglikelihood = 664,320), (2) the Akaike information criterion (AIC = 664,368), and (3) the Bayesian information criterion (BIC = 664,601).

Results

The overall prevalence of NSSI in the past year in this sample was 15.6%. Differences in the prevalence of NSSI across student background characteristics are shown in Table 1. Female (21.9%) and younger (8th graders: 15.98%, 9th graders: 15.95%) students were significantly more likely than male (9.2%) and older (11th graders: 14.75%) students to report NSSI in the past year (p's $< .001$). Students who identified as non-White (18.8%) and received free/reduced-price lunch (21.2%) were significantly more likely than those who identified as White (14.3%) and did not receive received free/reduced-price lunch (13.5%) to report NSSI (p's $< .001$).

Table 2 shows the results of independent samples *t*-tests comparing students who engaged in NSSI to their peers who did not in terms of their levels of connections to parents and friends, as well as the potential mediator variables measuring developmental assets. Students who did not

Table 2. Relationships between non-suicidal self-injury (NSSI) and independent and mediator variables.

	Mean (*SD*)		*t*-test
	Past-year NSSI (*n* = 18,655)	No NSSI (*n* = 100,797)	
Parent connections	3.68 (0.92)	4.40 (0.70)	$t = 101.95$, $p < .001$
Friend connections	3.60 (1.19)	4.19 (0.91)	$t = 63.78$, $p < .001$
Social competency	2.68 (0.60)	3.13 (0.57)	$t = 94.34$, $p < .001$
Positive identity	2.31 (0.65)	3.01 (0.63)	$t = 135.58$, $p < .001$
Empowerment	2.41 (0.76)	3.12 (0.71)	$t = 115.30$, $p < .001$

engage in NSSI reported significantly higher levels of parent connections ($M = 4.40$) and friend connections ($M = 4.19$), compared to their peers who engaged in NSSI ($M = 3.68$ and $M = 3.60$, respectively; p's $< .001$). Similar patterns emerged related to social competency, positive identity, and empowerment.

Bivariate relationships were examined to evaluate the degree to which all variables were interrelated and establish a foundation for the multiple mediator path model (Table 3). The two independent variables, connections to parents and connections to friends, were significantly and positively associated with all the developmental asset variables presumed to mediate relationships with NSSI. NSSI was significantly and negatively associated with the independent variables and potential mediators. Furthermore, being female was significantly and positively associated with greater levels of connections to friends and social competency, but negatively associated with levels of connections to parents and positive identity, compared to being male. Students who identified as non-White and received free/reduced-price lunch reported significantly lower levels of connections to parents and friends, as well as the developmental assets, compared to their peers.

Multiple mediator path model

Figure 1 shows the results of estimating a multiple mediator path model of the associations between connections to both parents and friends and NSSI, including all three developmental asset mediators and adjusting for demographic characteristics. In this model, even after controlling for all variables (including associations with each other), connections to parents and connections to friends were significantly and positively associated with all three developmental assets, and significantly and negatively associated with NSSI. However, only two of the three mediators, positive identity and empowerment, were significantly and negatively associated with NSSI. The path model yielded an R^2 value of 0.32 for NSSI.

Table 4 presents the decomposition of direct and indirect effects of the multiple mediator model in separate columns. First, the total indirect effect (the sum of three mediator-specific indirect effects) of connections to parents and friends on NSSI through mediators (i.e., $0.00 - 0.56 - 0.18 = -0.74$) was larger than that of the total direct effect (–0.58). This result indicates that developmental assets, particularly positive identity and empowerment, serve as mediators of the relationships between connections to both parents and friends and NSSI. Importantly, the direct effect of parent connections on NSSI (–0.50) was more than six times that of friend connections (–0.08). Furthermore, positive identity had the strongest mediating effects on the protective associations between connections to both parents and friends on NSSI, as indicated by its relatively larger indirect effects ($\beta = -0.56$; OR = 0.57).

Table 3. Bivariate correlations among all study variables.

Variables	1	2	3	4	5	6	7	8	9	10	11	12
Dependent variable												
1. NSSI	–											
Independent variables												
2. Parent connections	−.33**	–										
3. Friend connections	−.22**	.36**	–									
Mediator variables												
4. Social competency	−.27**	.42**	.44**	–								
5. Positive identity	−.38**	.48**	.44**	.72**	–							
6. Empowerment	−.33**	.51**	.49**	.72**	.75**	–						
Control variables												
7. Sex (female)	.18**	−.08**	.07**	.09**	−.15**	−.00	–					
8. Grade (9th graders)	.01*	−.01**	.00	.00	−.00	−.00	−.00	–				
9. Grade (11th graders)	−.02**	−.03**	−.02**	−.05**	−.06**	−.04**	.00	−.47**	–			
10. Race (White)	−.06**	.19**	.10**	.11**	.07**	.08**	.00	.00	.05**	–		
11. Free or reduced-price lunch	.10**	−.23**	−.11**	−.16**	−.13**	−.12**	.01**	.00	−.03**	−.38**	–	
12. School location (Twin Cities area)	−.01*	.01*	.03**	.07**	.02**	.04**	.01*	−.00	−.01*	−.19**	.01**	–

NSSI: non-suicidal self-injury.
*$p < .05$; **$p < .01$.

Discussion

In this study, we sought to address gaps in the literature regarding the association between specific developmental assets and NSSI, as well as the mediating role of different assets on relationships between parent and friend connections and NSSI, among adolescents. Consistent with previous research on NSSI among youth, we found that younger, female, and non-White students, and those who received free/reduced-price lunch were more likely to report NSSI than their counterparts (Taliaferro & Muehlenkamp, 2015; Taliaferro et al., 2012).

Findings also support previous research demonstrating negative associations between connections to parents and friends and NSSI among adolescents (Muehlenkamp et al., 2013). However, connections to parents showed a stronger, negative direct relationship with NSSI than did connections to friends. Furthermore, the developmental assets accounted for a greater proportion of the effect of connections to friends on NSSI than the effect of connections to parents on NSSI, suggesting parents may offer more than friends in the promotion of protective factors for NSSI and that connections to parents has a protective effect against NSSI through other mechanisms, in addition to these developmental assets. This finding supports previous research suggesting social support from parents/family exerts a stronger effect than peer social support on adolescent NSSI (Taliaferro et al., 2012), and the possible transition from NSSI to suicidal thoughts and behaviors (Whitlock et al., 2013).

When all the developmental assets were examined together in the multiple mediator path model, the direct relationship between social competency and NSSI was not statistically significant. Our findings align with research documenting that youth who have a positive and strong sense of self are less likely to engage in NSSI, even when experiencing notable stressors (Claes, Luyckx, & Bijttebier, 2014). This finding suggests that efforts to prevent NSSI should focus on enhancing positive identity development and empowerment among adolescents.

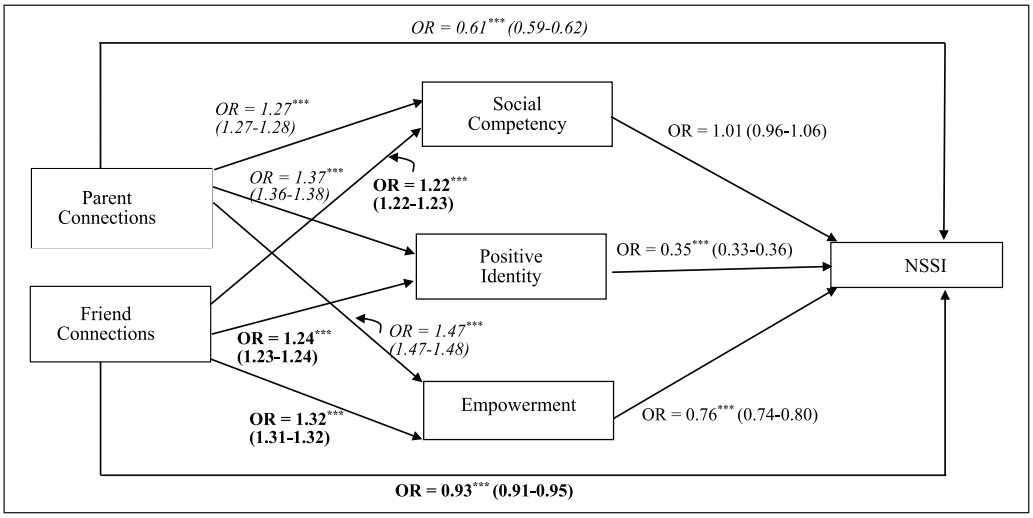

Figure 1. Results of structural equation model testing simultaneous mediating effects of developmental assets on the associations among parent connectedness, friend caring, and NSSI.
The coefficients for paths from parent connections are italicized; coefficients for paths from friend connections are bolded.
***$p < .001$.

Table 4. Decomposition of the associations between independent variables and NSSI: direct, indirect, and total effects.

Effect		NSSI	
		β	OR
Direct effect	Parent connections	−0.50***	0.61
	Friend connections	−0.08***	0.93
Indirect effect	Social competency	0.00	1.00
	Positive identity	−0.56***	0.57
	Empowerment	−0.18***	0.84
Total effect		−1.32	0.52

NSSI: non-suicidal self-injury; OR: odds ratio; β: logit.
All models adjusted for students' sex, grade, race/ethnicity, free or reduced lunch status, and school location. *$p < .05$; **$p < .01$; ***$p < .001$.

Future research should examine the effect of interventions seeking to enhance developmental assets on NSSI using longitudinal designs. In addition, investigators could take a more nuanced approach to examining effects of connections to friends on NSSI behavior. For example, one reason the developmental assets may have exerted a stronger effect for connections to friends, compared to connections to parents, could involve the type of friends youth considered when answering the caring friends survey item. Many adolescents who self-injure also have friends who self-injure and may struggle to cope adaptively and/or form strong, supportive relationships (Claes, Houben, Vanderelycken, Bijttebier, & Muehlenkamp, 2010; Hasking, Andrews, & Martin, 2013). Thus, the strength of the relationship between connections to friends and NSSI could be weaker than the

relationship between connections to parents and NSSI partly because the former relationship depends on the type of caring friends youth possess. Caring friends, even if they too struggle with mental health or NSSI, may provide some buffering effect, but developmental assets (e.g., social competency to distinguish between healthy and unhealthy friends and their influence on one's own behavior) actually determine engagement in NSSI rather than merely having a caring friend. These findings also suggest that parent–child relationships are complex and the mechanisms at play in conferring risk or protection in these relationships are less easily modeled using the developmental asset variables we assessed. Researchers are also encouraged to examine the effects of other developmental assets on the relationships explored in this analysis. Furthermore, investigators could examine developmental assets and NSSI frequency on a more nuanced level that might help determine differences between adolescents who experiment with NSSI once or twice and those who repetitively self-injure.

Study strengths and limitations

This study included several strengths and limitations. A strength involved the large population-based sample of adolescents from the general community. We were able to examine developmental assets between a large number of adolescents with and without a history of NSSI in the past 12 months. In addition, the survey items assessing developmental assets allowed us to examine different internal and external assets to determine those that demonstrated the strongest relationship with NSSI. However, the survey included only three developmental asset subscales. Additional assets, such as boundaries and expectations, were not assessed in this survey. Other limitations involve the inability to determine causal relationships based on the cross-sectional data or generalize the findings to youth outside of Minnesota. In particular, mediation typically assumes both causality and a temporal ordering of the variables under study. Results from the current analyses provide some interesting evidence of the mediating effects of developmental assets. However, further research using longitudinal data is needed to examine the roles that different developmental assets play in preventing NSSI, and to better clarify the causal sequence of connections to parents and friends and developmental assets to NSSI involvement.

Clinical implications

These findings have implications for clinical practice, public health programming, and future research. Clinicians working with adolescents who engage in NSSI might consider family-based therapy strategies to enhance perceived connectedness between adolescents and their parents. A good relationship with parents represents one of the healthiest and strongest protective factors for NSSI (Taliaferro et al., 2012), and although therapies often focus on building healthy coping skills, clinicians sometimes view parents as a consultant in treatment rather than a distinct coping strategy to be utilized. This study indicated higher prevalence of NSSI among younger than older students, thus, prevention and intervention efforts should target the emotionally vulnerable transition to high school (Taliaferro & Muehlenkamp, 2015). For instance, borrowing from Vygotsky's (1978) Sociocultural Theory, clinicians can help parents provide emotional scaffolding as their children enter high school. Rather than assume their adolescent children have the emotional fortitude to navigate the social and academic pressures of secondary education, parents can proactively talk to their children about healthy coping strategies for stress, model healthy coping, and make themselves available in a given moment by asking their children: "How can I help?" or "What do you need from me in this moment?" At the same time, some parents may also struggle to provide adaptive coping strategies or be effective role models. Providing parents with support they need to be

capable of supporting and guiding their children's use of healthy coping remains equally important (Arbuthnott & Lewis, 2015; Baetens et al., 2015; Baetens, Claes, Martin, et al., 2014; Whitlock & Lloyd-Richardson, 2019). Moreover, parents who know their children self-injure are likely to experience significant secondary stress, an experience that can greatly impact parental capacity to provide needed support (Baetens, Claes, Onghena, et al., 2014; Whitlock, Lloyd-Richardson, Fisseha, & Bates, 2018). Perhaps most important, clinicians providing individual therapy to adolescents who engage in NSSI should recognize that not all adolescents want to keep their NSSI confidential from their parents. Clinicians should discuss an adolescent disclosing NSSI to his or her parents as an option in therapy. If clinicians and patients determine disclosure represents the next best step in treatment, clinicians might encourage disclosure as a strategy to improve healthy communication and connectedness in the parent–child relationship.

Furthermore, and more specifically, this study indicated the protective effect of parents via both internal (positive identity) and external (empowerment) developmental assets. Clinicians can guide parents to effectively instill a positive identity in their children by encouraging them to teach their children how to problem-solve and deal with setbacks and difficulties in life, as well as to provide their children space to develop their own interests, which may or may not be the same as those of their parents. Clinicians also might foster a positive identity among adolescents by helping parents understand the difference between praising their children and loving their children. For example, clinicians can encourage parents to praise their children conditionally, based on identifiable behaviors and successes rather than indiscriminately (Brummelman et al., 2015). In turn, clinicians can encourage parents to love their children unconditionally, unattached to any behavior children display, by showing warmth to their children with regular expressions of love and statements of "I love you." To foster feelings of empowerment in their children, clinicians can encourage parents to include their teens in family decisions and give them mutually agreed upon roles and responsibilities that would enable them to feel useful and valued by the family and others.

Conclusion

This study represents one of the first investigations to assess specific developmental assets that protect against NSSI, as opposed to focusing on risk factors for NSSI. Developmental assets explained more of the relationship between connections to friends and NSSI than between connections to parents and NSSI, suggesting that feeling connected to parents has a protective effect against NSSI above and beyond these developmental assets. Clinical and public health efforts to prevent NSSI should focus on enhancing young people's internal and external assets, particularly their sense of positive identity and empowerment. Addressing positive identity would involve enhancing adolescents' feelings of control over and positive regard about themselves and their future, their capacity to cope with disappointment and difficulties in life, as well as their ability to consider their purpose in life. In short, enhancing hopefulness, coping skills, and emotion regulation reduce risk of NSSI. Prevention and intervention programming addressing the asset of empowerment would help adolescents feel valued and appreciated by others, included in family tasks and decisions, and as though they serve useful roles and possess important responsibilities. Similar to suicide prevention efforts (Joiner, 2005), reducing adolescents' perceived burdensomeness by making them feel their contributions are valued could help prevent engagement in NSSI.

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