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Connections that Moderate Risk of Non-Suicidal Self-Injury among Transgender and Gender Non-Conforming Youth

Lindsay A. Taliaferro[a,*], **Barbara J. McMorris**[b], and **Marla E. Eisenberg**[c]

[a]Department of Internal Medicine, University of Central Florida, Orland, Florida, United States

[b]School of Nursing, University of Minnesota, Minneapolis, Minnesota, United States

[c]Division of General Pediatrics and Adolescent Health, Department Pediatrics, University of Minnesota, Minneapolis, Minnesota, United States

Abstract

We examined associations between social connections and non-suicidal self-injury (NSSI) among transgender/gender non-conforming (TGNC) youth. Data came from the 2016 Minnesota Student Survey (N = 2,168). Logistic regression analyses determined connectedness factors associated with any past-year NSSI and repetitive NSSI, as well as moderating effects of significant connectedness factors on different risk factors. Almost 55% of TGNC students engaged in NSSI, and 40% of self-injurers reported repetitive self-injury. Parent connectedness, connections to non-parental adults, and school safety emerged as robust protective factors. Strategies to prevent/reduce NSSI should focus on fostering connections with prosocial adults, and ensuring schools represent safe places.

Keywords

connectedness; self-harm; adolescent

1. Introduction

Non-suicidal self-injury (NSSI; deliberate destruction of body tissue without suicidal intent that is not socially sanctioned) represents a significant public health problem among adolescents (Muehlenkamp et al., 2012). In particular, vulnerable youth whose gender identity does not match their birth-assigned sex (transgender) and/or who are non-conforming to the gender they were assigned at birth (gender non-conforming) (TGNC) demonstrate greater risk of engaging in NSSI (Connolly et al., 2016). Findings from two population-based surveys showed that between 45.5% and 54.8% of TGNC adolescents engaged in NSSI during the previous 12 months (Clark et al. 2014; Eisenberg et al., 2017).

[*]**Address correspondence to:** Lindsay Taliaferro, PhD, Department of Internal Medicine, College of Medicine, University of Central Florida, 6900 Lake Nona Blvd., BBS 426, Orlando, FL 32827; Lindsay.Taliaferro@ucf.edu; phone: 407-266-7149.

NSSI might increase risk of suicide (Joiner and Ribeiro, 2012), especially among youth who engage in repetitive self-injury, defined as 10 or more acts over 12 months (Muehlenkamp and Brausch, 2016). Depression and bullying victimization represent important risk factors associated with NSSI (Borowsky et al., 2013), and are common among TGNC youth (Eisenberg et al., 2017).

In contrast to a risk-focused perspective, resilience research focuses on positive features of development such as connections to parents, non-parental adults, friends, and school (Masten, 2009). Although researchers examined protective effects of different social connections for youth in general, they have lacked the ability to determine which connections provide vulnerable TGNC youth with the greatest protection against NSSI, including reducing the likelihood of engaging in repetitive self-injury. To address gaps in the literature, we sought to answer the research question: Which connectedness factors are related to and moderate risk for a) any NSSI and b) repetitive NSSI for those who self-injure, among TGNC youth? Based on previous research with LGBQ youth (Taliaferro and Muehlenkamp, 2017) and the Minority Stress Theory, which suggests connectedness to important individuals and/or institutions may buffer the impact of stressors experienced from identification with a sexual minority group (Meyer, 2003), we expected connections to parents and non-parental adults and school safety to emerge as important protective factors.

2. Methods

2.1 Design and sample

Data came from the Minnesota Student Survey, an anonymous population-based survey conducted every three years with students in grades 5, 8, 9, and 11 (Minnesota Center for Health Statistics, n.d.). In 2016, 85% of school districts participated statewide. Questions about gender identity were only included on the high school survey, which restricted the current analysis to students in grades 9 and 11 (N = 81,885). Student assent and passive parental consent were used. The University of Central Florida's IRB approved this secondary data analysis.

The analytic sample included 2,168 TGNC students, which represented 2.7% of the total sample. Among the sample of TGNC students, 31.5% were biologically male and 67.2% were biologically female, while 1.2% declined to answer. Fifty-nine percent were in grade 9, and 58.0% identified as non-Hispanic White. Approximately 39.0% received free/reduced-price lunch at school, and 54.8% attended school in the Minneapolis/Saint Paul metropolitan area.

2.2 Measures

Gender identity was determined by the question: "Do you consider yourself transgender, genderqueer, genderfluid, or unsure about your gender identity?" (yes/no). NSSI was assessed using the item: "During the past 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?" Students who responded one or more times were categorized as engaging in any NSSI and compared with those who responded never. Students who

responded 10 or more times were categorized as engaging in repetitive NSSI and compared with those who responded 1 to 9 times, as recommended (Muehlenkamp and Brausch, 2016).

We assessed five connectedness factors frequently used in previous research (Eisenberg et al., 2017; Gower et al., submitted; Taliaferro and Muehlenkamp, 2017). Three items were used to create a composite parent connectedness variable: how often students could talk with their mother and their father about problems they were having, and how much they believed their parents cared about them ($\alpha = 0.65$). Teacher/school adult relationships were assessed with six items from a validated instrument (e.g., how much adults at their school treat students fairly, listen to students, care about students; $\alpha = 0.86$) (Appleton et al., 2006). Perceptions of caring from friends was assessed with an item asking about how much students believed friends cared about them. Connectedness to other non-parental adults was assessed using two items asking how much students believed "other adult relatives" and "adults in your community" cared about them ($\alpha = 0.70$). Finally, to assess school safety, students indicated how much they agreed/disagreed with the statement: "I feel safe at school."

Regarding risk factors, depressive symptoms were assessed with the PHQ-2 (e.g., "Over the past two weeks, how often have you been bothered by feeling down, depressed or hopeless?"). Students screened positive for depression with a suggested cut-off score of 3 or higher (Kroenke et al., 2003). Gender-based bullying victimization was assessed using two items that inquired about being harassed or bullied because of one's gender and/or gender expression. Finally, one item assessed physical bullying victimization with regard to being pushed, shoved, slapped, hit, or kicked by other students at school. We categorized students as victims of bullying if they responded once or more during the last 30 days to any of these questions. Demographic variables included biological sex (female vs. male), grade (9^{th} vs. 11^{th}), race/ethnicity (white vs. nonwhite), free/reduced-price lunch (a proxy measure of SES), and school location (Minneapolis/Saint Paul metropolitan area vs. elsewhere).

2.3 Statistical analyses

For the primary analyses, we conducted logistic regression analyses using SPSS v.23. First, we examined relationships between each connectedness factor (separately) and each outcome (any NSSI and repetitive NSSI), controlling for demographic variables and risk factors. Second, connectedness factors that were significantly associated with either outcome ($p < 0.05$) were entered together into a model, with the demographic and risk factor variables. This two-step process allowed us to determine the connectedness factors most strongly associated with each outcome. Finally, we tested for interactions between all risk and connectedness factors, one at a time, in separate models, adjusting for all variables in the final models, to determine potential buffering effects of connectedness factors on relationships between identified risk factors and NSSI outcomes.

3. Results

Overall, 54.8% ($n = 1,076$) of TGNC students reported any NSSI, and among those who engaged in self-injury, 40.3% ($n = 434$) reported repetitive NSSI during the previous year.

Compared with biological males (38.1%) and 11th graders (50.9%), biological females (62.5%) and 9th graders (57.6%), respectively, were significantly more likely to report any NSSI (both $p < 0.05$). We did not find any other significant differences based on demographic characteristics.

Fifty-eight percent of TGNC students screened positive for depression, 51.4% experienced gender-based bullying victimization, and 10.0% were physically bullied. This sample reported moderate levels of parent connectedness ($M = 3.5$, $SD = 0.99$; range: 1–5), teacher relationships ($M = 2.8$, $SD = 0.62$; range: 1–4), connections to other non-parental adults ($M = 2.9$, $SD = 1.11$; range: 1–5), school safety ($M = 3.0$, $SD = 0.81$; range: 1–4), and friend caring ($M = 2.8$, $SD = 1.20$; range: 1–4).

Findings from Step 1 preliminary regression analyses are available upon request. Table 1 presents findings from the final logistic regression models. Among TGNC students, any past year NSSI was significantly associated with depression and gender-based or physical bullying victimization. Greater connections to parents and non-parental adults emerged as significant protective factors. Further, we found a significant interaction (OR = 1.28, $p = .019$) between connectedness to non-parental adults (simple effect OR= 0.70) and gender-based bullying victimization (simple effect OR = 0.93). Probing this interaction allowed us to see that among those who were bullied because of their gender/gender expression, youth who reported stronger connections to non-parental adults were significantly less likely to report NSSI.

Among self-injurers, depression emerged as the most important risk factor associated with repetitive NSSI, and parent connectedness and school safety represented the most important factors to protect against repetitive self-injury. No significant interactions emerged in analyses used to examine repetitive NSSI among those who self-injured.

4. Discussion

Over half of TGNC students reported NSSI during the previous year, a drastically higher rate than found in general populations of adolescents (i.e., 18%) (Muehlenkamp et al., 2012). Further, among TGNC youth who self-injured, 40% engaged in repetitive NSSI, indicating many adolescents may be at risk for an NSSI disorder (Muehlenkamp and Brausch, 2016). On a positive note, findings regarding the protective effects of connectedness factors for TGNC youth are consistent with the Minority Stress Theory and support previous resilience research showing that parent connectedness, connections to non-parental adults, and school safety represent important protective factors that might reduce risk of NSSI among vulnerable populations of LGBTQ youth (Taliaferro and Muehlenkamp, 2017). In particular, stronger connections to non- parental adults moderated the risk of NSSI conferred by gender-based bullying victimization.

Study strengths were the large population-based sample of TGNC students and assessment of multiple measures of connectedness. Weaknesses included the cross-sectional design, item assessing biological sex rather than birth-assigned sex, variables measured using a single or few items, which result in lower reliability than multi-item scales, measures with

different time references, and sample from only one state. Future research should use longitudinal designs, as well as assess NSSI and TGNC identity within national surveys.

Prevention programming and clinical interventions to prevent NSSI, as well as the transition from infrequent to repetitive NSSI, should focus on fostering positive connections with parents, relatives, and community members. In particular, naturally occurring relationships with prosocial non-parental adults may represent especially important sources of support and mentoring for LGBTQ youth (American Psychological Association, 2012; Torres et al., 2012). Finally, policies and prevention programming should ensure schools remain safe places by addressing stereotypes and transphobic perceptions in bullying prevention programs, as well as promoting sociocultural norms of acceptance, tolerance, and positive identity development.

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References

American Psychological Association, 2012 Guidelines for psychological practice with lesbian, gay, and bisexual clients. Am. Psychol 67, 10–42. [PubMed: 21875169]

Appleton J, Christenson S, Kim D, Reschly A, 2006 Measuring cognitive and psychological engagement: validation of the Student Engagement Instrument.J.Sch Psychol. 44, 427–445.

Clark T, Lucassen M, Bullen P, Denny S, Fleming T, Robinson E, et al., 2014 The health and well-being of transgender high school students: results from the New Zealand Adolescent Health Survey (Youth'12). J. Adolesc. Health 55, 93–99. [PubMed: 24438852]

Connolly M, Zervos M, Barone C, Johnson C, Joseph C, 2016 The mental health of transgender youth: advances in understanding. J. Adolesc. Health 59, 489–495. [PubMed: 27544457]

Eisenberg M, Gower A, McMorris B, Rider G, Shea G, Coleman E, 2017 Risk and resilience in the lives of transgender/gender non-conforming adolescents. J. Adolesc. Health 61, 521–526. [PubMed: 28736148]

Gower A, Rider GN, Brown C, McMorris B Coleman E, Taliaferro L, et al., submitted. Protective factors against depression, suicidality, and substance use among transgender and gender diverse adolescents. Am. J. Prev. Med

Joiner T, Ribeiro J, Silva C, 2012 Nonsuicidal self-injury, suicide behavior, and their cooccurrence as viewed through the lens of the interpersonal theory of suicide. Curr. Dir.Psychol. Sci 21, 342–347

Kroenke K, Spitzer R, Williams J, 2003 The Patient Health Questionnaire-2: validity of a two-item depression screener. Med. Care 4, 1284–1292.

Masten A, 2009 Ordinary magic: lessons from research on resilience in human development. Educ. Can 49, 28–32.

Meyer I, 2003 Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. Psychol. Bull 129, 674–697. [PubMed: 12956539]

Minnesota Center for Health Statistics. Minnesota Student Survey. <http://www.health.state.mn.us/divs/chs/mss/> (Accessed 13 March 2017)

Muehlenkamp J, Brausch A, 2016 Reconsidering criterion A for the diagnosis of non-suicidal self-injury disorder. J. Psychopathol. Behav. Assess 38, 547–558.

Muehlenkamp J, Claes L, Havertape L, Plener P, 2012 International prevalence of adolescent non-suicidal self-injury and deliberate self-harm. Child. Adolesc. Psychiatry Ment. Health 6, 1–9. [PubMed: 22216948]

Taliaferro L, Muehlenkamp J, 2017 Nonsuicidal self-injury and suicidality among sexual minority youth: risk factors and protective connectedness factors. Acad. Pediatr 17, 715–722. [PubMed: 28865597]

Torres RS, Harper G, Sanches B, Fernandez M, The Adolescent Medicine Trials Netowrk for HIV/AIDS Interventions, 2012 Examining natural mentoring relationships (NMRs) among self-identified gay, bisexual, and questioning (GBQ) male youth. Child. Youth Serv. Rev 34, 8–14.

Highlights

- Transgender/gender non-conforming adolescents engage in NSSI at high rates.
- Connections to parents and other adults, and school safety are protective factors.
- Prevention involves creating connections with prosocial adults and safe schools.

Table 1.

Risk and Protective Factors Associated with Any Self-Injury among Transgender/Gender Non-Conforming (TGNC) Youth and Repetitive Self-Injury among TGNC Youth Who Self-Injure

	Any NSSI (*N* = 2,168)	**Repetitive NSSI (*N* = 1,076)**
	Odds Ratio (95% Confidence Interval)	
Demographics		
Female (1) vs. male (0)	**1.91 (1.50, 2.42)****	1.26 (0.89, 1.80)
Grade 9 (1) vs. grade 11 (0)	**1.27 (l.02, 1.57)***	1.04 (0.79, 1.38)
White (1) vs. non-White (0)	1.15 (0.91, 1.46)	1.21 (0.90, 1.64)
Free/reduced lunch (1) vs. not (0)	0.89 (0.71, 1.13)	0.80 (0.59, 1.07)
Metropolitan school location (1) vs. elsewhere (0)	0.99 (0.80, 1.23)	0.81 (0.62, 1.07)
Risk Factors		
Depression (1 yes vs. 0 no)	**3.11 (2.51, 3.87)****	**2.87 (2.03, 4.07)****
Gender-based bullying victim (1 yes vs. 0 no)	**1.92 (1.54, 2.39)****	1.13 (0.84, 1.52)
Physical bullying victim (1 yes vs. 0 no)	**1.76 (1.19, 2.59)***	1.35 (0.86, 2.11)
Protective Factors		
Parent connectedness	**0.72 (0.63, 0.82)****	**0.67 (0.56, 0.79)****
Teacher/school adult relationships	0.96 (0.74, 1.29)	0.94 (0.69, 1.28)
Other non-parental adult connectedness	**0.79 (0.69, 0.90)****	1.00 (0.84, 1.18)
School safety	0.95 (0.79, 1.15)	**0.78 (0.62, 0.99)***
Friend caring	0.96 (0.87, 1.07)	0.96 (0.85, 1.08)

Notes: NSSI = non-suicidal self-injury. TGNC = transgender/gender nonconforming.
Any NSSI was examined among the total sample of TGNC students.
Repetitive NSSI (10 or more episodes) was examined among TGNC students who reported self-injury (1 or more episodes).
Bolded results were statistically significant at $p < 0.05$.

*$p < 0.05$

**$p < 0.001$.