Connectedness to family, school, peers, and community in socially vulnerable adolescents[*]

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Abstract

Youth who feel connected to people and institutions in their communities may be buffered from other risk factors in their lives. As a result, increasing connectedness has been recommended as a prevention strategy. In this study, we examined connectedness among 224 youth (ages 12–15), recruited from an urban medical emergency department, who were at elevated risk due to bullying perpetration or victimization, or low social connectedness. Regression analyses examined multiple domains of connectedness (family, school, peer, community) in relation to adjustment. Youth who felt more connected to parents reported lower levels of depressive symptoms, suicidal ideation, non-suicidal self-injury, and conduct problems, higher self-esteem and more adaptive use of free time. Youth who felt more connected to their school reported lower levels of depressive symptoms, suicidal ideation, social anxiety, and sexual activity, as well as higher levels of self-esteem and more adaptive use of free time. Community connectedness was associated with less social anxiety but more sexual activity, and peer connectedness was not related to youth adjustment in this unique sample. Findings suggest that family and school connectedness may buffer youth on a trajectory of risk, and may therefore be important potential targets for early intervention services.

1. Introduction

Connectedness is defined as the degree to which individuals or groups are socially close, interrelated, or share resources (CDC, 2013a). Connectedness has the potential to be a target of interventions designed to increase protective factors for youth (CDC, 2009, 2013a). Unfortunately, interventions that promote protective factors are under-utilized (Prince Embury and Saklofske, 2014) and little is known about their use with high-risk youth

(Brownlee et al., 2013). With our nation's youth experiencing an array of different types of risk factors, an improved understanding of how protective factors, like connectedness, might be of benefit for particular subgroups of youth is a research priority (Tolan, 2014) with potential to improve services to high risk youth.

1.1.   Connectedness/theoretical basis

The concept of connectedness is rooted in a wealth of previous theoretical and empirical work that has documented the importance of healthy supportive relationships to well-being across the lifespan. Concepts such as attachment (Bowlby, 1969) and family warmth and cohesion (Sturge-Apple, Davies, & Cummings, 2010) point to the importance of healthy connections between youth and their families. In addition, constructs such as social support (Cobb, 1976; Cohen & Wills, 1985), social integration (Durkheim, 1897), and social connection (Barber & Schluterman, 2008) point to the benefits of healthy relationships outside the family. Connectedness can exist between individuals or between individuals and social institutions, such as schools and other organizations. Proponents of connectedness as a framework for prevention posit that connections may contribute to an enhanced sense of belonging, a sizeable social network, active engagement in one's community, improved perceptions of closeness and support, the provision of tangible resources and health information, exposure to positive modeling, mentorship, and engagement in pro-social activities (Cohen & Wills, 1985). While social connections inside and outside the family have been linked to well-being, the absence of such connections has also been linked to risk for negative outcomes. It stands to reason that enhancing youth connectedness to helping adults and social institutions should reduce risk and promote positive outcomes for youth.

Connectedness to parents and family is defined as feeling loved, cared for, valued and respected by one's parents. Research suggests that youth who feel close to their parents are less likely to engage in violence (Farrell et al., 2010), have lower risk for internalizing disorders (Day & Padilla-Walker, 2009), and are less likely to attempt suicide (Borowsky, Ireland, & Resnick, 2001). School connectedness is the extent to which youth feel that they are a valued part of a school community in which adults and peers genuinely care for their well-being as learners and as individuals (Resnick et al., 1997; CDC, 2009). School connectedness has been found to be related to improved academic outcomes (Booker, 2006) as well as reductions in youth risk behaviors (Dornbusch et al., 2001). Youth who experience a sense of connection to their school exhibit fewer externalizing behaviors including violence and alcohol use (Brookmeyer, Fanti, & Henrich, 2006) and less risky sexual behavior (Catalano, 2004).

Peer connectedness is defined as perceptions of support, genuine caring, and trust in one's peer group (Bernat & Resnick, 2009). Research is clear that peers influence youth behaviors; for example, youth who affiliate with peers who engage in delinquent behaviors are more likely to engage in these behaviors themselves (Pardini, Loeber, Farrington, & Stouthamer-Loeber, 2012) while youth who have relationships with more positive peers are less likely to engage in violence and delinquency (Pardini et al., 2012). The quality of peer relationships is also linked to depression and suicidality (e.g., Prinstein et al., 2000). Finally, community connectedness is defined as youth's perceptions of being cared for by adults in their

community and being able to count on their community for support and assistance (Bernat & Resnick, 2009). Borowsky et al. (1999) found that connections to the broader community were protective against suicidal ideation and attempts in a national sample of Native American Youth. Community connectedness was also found to promote social competence and health behaviors in the National Survey of Children's Health (Youngblade et al., 2007). Converging evidence from community samples suggests that adolescents' perceptions of connectedness to parents, positive peers, schools, and community may reduce risk for maladaptive behaviors and increase adaptive behaviors in youth.

1.2. Vulnerable youth

High numbers of youth in the US are facing some type of adverse childhood circumstance (Children's Defense Fund, 2014) with many youth experiencing multiple risk factors. In this study, we examine youth who are vulnerable due to residence in an under-resourced urban area as well as due to social challenges such as peer victimization and/or isolation. Research is clear that growing up in poverty increases children's risk for mental, emotional, and behavioral problems (Samaan, 2000). Poverty has both a direct effect as well as a host of mediating impacts on children that may include marital and/or family distress, poor quality schools, limited access to health care, and unsafe neighborhoods (Yoshikawa, Aber, & Beardslee, 2012). Children who are raised in communities with high levels of violence are also at risk for negative outcomes. A recent meta-analysis (Fowler et al., 2009) suggests that exposure to community violence increases risk of trauma-related disorders, externalizing/ aggressive behavior, as well as internalizing difficulties. Social circumstances, such as poverty, although known to influence children's developmental outcomes, are difficult to alter, making the identification of modifiable factors that can protect children raised in under-resourced areas an especially high priority.

High numbers of youth also report facing social challenges with recent studies suggesting that 20.8% of youth in grades 6–12 have experienced bullying during the current school year (School Crime Survey, National Center for Education Statistics and Department of Justice Statistics, 2015). Bullying is defined as "any unwanted aggressive behavior(s) by another youth or group of youths who are not siblings or current dating partners, that involves an observed or perceived power imbalance and is repeated multiple times or is highly likely to be repeated. Bullying may inflict harm or distress on the targeted youth including physical, psychological, social, or educational harm" (Gladden, Vivolo-Kantor, Hamburger, & Lumpkin, 2014). Three categories of bully-involved youth have been identified: those who perpetrate bullying (5–17% of school-aged youth), those who are victimized (4–12% of school-aged youth), and those who bully others and are victims themselves (4–13%; Jansen et al., 2012; Vaillancourt et al., 2010).

Youth who have been victimized are known to have an increased likelihood of depression, suicidal ideation, anxiety, school problems, and somatic complaints (Arseneault, Bowes, & Shakoor, 2010; Smokowski and Kopasz, 2005) as well as behavioral problems such as delinquency, substance use, and early sexual behavior (DeCamp & Newby, 2015). It is also well-established that youth who bully other children have increased risk for substance abuse, academic problems, and other forms of violent behavior (Smokowski and Kopasz, 2005).

Data from the 2007 National Survey of Children's Health demonstrated a 3-fold increased risk of depression, anxiety, and ADHD among youth who bully (Benedict, Vivier, & Gjelsvik, 2015). Youth who are both victims and perpetrators of bullying (called bully-victims from this point forward) appear to be at highest risk of negative outcomes. A recent study of 6th, 9th, and 12th grade youth found that 1.2% of youth with no bullying involvement made a suicide attempt, in contrast to 5% of bullies, 6.5% of victims, and 11% of bully-victims (Borowsky et al., 2013). Popp&Peguero (2012) theorize that the experience of bullying (perpetration and victimization) may have a negative impact on social bonds, weakening a youth's connection to peers and social structures and thereby creating additive risk for additional negative outcomes. Youth who are victims of bullying as well as youth who are both bullies and victims have been found to have poorer relationships with classmates and report higher levels of loneliness, with victims reporting more difficulty making friends (Nansel et al., 2001). Bully-involved youth may have social skills difficulties, aggressive behavior, or other challenges that create difficulty developing secure interpersonal relationships.

In addition to being at risk for bullying, youth who report feeling lonely, isolated and disconnected from peers are at higher risk of mental health problems including ADHD, externalizing problems and internalizing problems (Hymel, Rubin, Rowden, Lemare, 1990), with recent longitudinal data suggesting that social isolation may begin as early as age 5 among youth with behavior problems and tends to be stable or increase over time (Matthews et al., 2015). It is unclear if socially isolated/lonely youth develop mental health problems due to their social difficulties or if their social challenges pre-date their peer rejection experiences; in either case, it is clear that youth with social challenges are at elevated risk for a variety of behavioral and emotional health conditions.

1.3. Connectedness in high-risk groups

If connectedness has potential to buffer youth from the effect of other risk factors in their lives, then studies should demonstrate relationships between connectedness and positive adjustment even in subgroups of at risk youth. Unfortunately, the majority of studies of connectedness have been conducted in large community samples of youth with little examination of the potential protective impact of connectedness within groups defined by specific risk factors. More research is needed to understand whether connectedness within particular contexts (family, school, peers, community) might be helpful (or harmful) for particular subgroups of youth (Bernat & Resnick, 2009).

Loukas et al. (2010) conducted a longitudinal study of 476 adolescents over three years starting in the 6th grade. They found that school connectedness was especially protective for youth who had lower connectedness in other areas of their lives, reducing the likelihood of substance use. This study suggests that youth who are disconnected in some contexts (e.g., peers, family) may be especially impacted by connections to school. Ahrens et al. (2011) studied the impact of a close relationship with a non-parental adult on outcomes for youth in foster care, finding that youth with a close and supportive relationship at school, church, or elsewhere in their community were less likely to report suicide risk, aggression, or sexually transmitted infections and reported improved overall health. Logan et al. (2011) examined

connectedness to parents, schools, and delinquent friends in a sample of youth recruited from a high poverty community. Findings suggested that youth suicidal ideation was negatively related to parent and school connectedness; however, friendships with delinquent youth increased risk for suicidal ideation even after controlling for connectedness, demographic and mental health risk factors. This study suggests that connections to peers may actually increase risk, depending on the types of behaviors engaged in by the peer group.

Examining connectedness within under-resourced communities is critical, as some previous research suggests that community affluence may impact connectedness. Several recent studies suggest that students from privileged backgrounds (with privilege being defined in these studies as two-parent households, owning their home, academic success, and extracurricular involvement) are more likely to report feeling connected to school (McNeely, Nonnemaker, &Blum, 2002; Thompson, Iachan, Overpeck, Ross, & Gross, 2006). In their chapter on Connectedness in Adolescence, Bernat and Resnick (2009) suggest that research efforts explore the role of connectedness in communities that have fewer financial resources as well as those in which rates of violence and crime are higher, to better understand the probably nuanced relationships among connectedness and youth outcomes. Taken together, these studies highlight the idea that certain connections may act as a buffer against risk, while other types of connectedness may increase risk in certain youth. These findings point to the need to examine domains of connectedness in relation to youth adjustment in subgroups of youth with well-defined risk factors.

1.4. Hypotheses

In this study, we sought to understand whether and to what extent specific types of connectedness (to family, school, peers, community) were beneficial for youth characterized by two specific categories of risk factors: social challenges (peer bullying, victimization, social isolation) and residence in an underserved urban community with high rates of unemployment, poverty, and crime. Evidence is clear that social connections are important determinants of healthy adolescent development; what is unclear is to what extent connectedness-an interpersonal, social phenomenon-would be protective for youth who were all experiencing their own social challenges. Moreover, because few studies have examined connectedness (or reported their findings specifically for) impoverished urban communities, we know little about how connections to social institutions (like schools and the larger community) function in neighborhoods that are challenged by barriers such as lack of funding and resources, despite the fact that the most meaningful prevention targets may vary by community context (Nation et al., 2003). In the hopes of documenting the potential of connectedness to buffer at risk youth from negative outcomes, we hypothesized that stronger connections to family, school, and community would be associated with lower levels of emotional (depressive symptoms, anxious symptoms, suicidal ideation) and behavioral problems (substance use, early sexual activity, non-suicidal self-injury, or conduct problems) and higher levels of positive adjustment (e.g., high self-esteem, prosocial behavior, and adaptive uses of leisure time) for the youth in our unique sample. Analyses examining peer connectedness were exploratory in nature given the social challenges in our sample as well as the inconsistency in previous research regarding peer influences.

2. Materials and methods

2.1. Participants

Adolescents, aged 12 to 15 years, who presented to a large, urban, pediatric emergency department or co-located urgent care clinic (January, 2010 to September, 2014) were eligible for participation ($N = 3900$) in the effectiveness trial, *Links to Enhancing Teens' Connectedness* (*Let's Connect*) a community-based mentorship program from which the current study sample was drawn. Trained staff members approached adolescents and their parents/guardians for assent and consent. Adolescents were offered small gifts (e.g., dollar store items) as an incentive for participation. Inclusion criteria included residence within the target geographical area. Initial exclusion criteria included 1) having a life-threatening medical condition, 2) participation in another study, 3) a sibling participating in Let's Connect, 4) severe cognitive impairment, 5) not understanding written or spoken English, or 6) in police custody, juvenile detention, or a residential facility. Because one intervention goal was to prevent the onset of suicidal behavior, youth with a suicide attempt history were also excluded.

As Fig. 1 demonstrates, 1485 adolescents (39.6%) were study eligible and, of these, parent/guardian consent and youth assent were obtained for 1018 (68.6%). Youth participated in a brief screen ($n = 1007$) to assess interpersonal risk factors. The present study included the subset of participants from the larger study who indicated that they 1) had no history of prior suicide attempts ($n = 964$), 2) were involved in bullying, either as a perpetrator and/or a victim, and/or were experiencing low levels of social connectedness ($n = 240$), and 3) could provide a minimum of two verifiable telephone contacts for follow-up. Adolescents who met these criteria and who completed the 45 to 60-min evaluation, were remunerated with $25. Evaluations occurred in the emergency department/medical clinic with research assistants available to respond to youth or parent questions.

The final sample in this cross-sectional study included 224 adolescent-parent dyads who completed the initial LET'S CONNECT evaluation. Youth (66.5% female) ranged in age from 12 to 15 years, ($M = 13.9$, $SD = 1.1$) and self-identified as African American (52.2%), Caucasian (29%), Multiracial (13.8%), and Other (2.7%). Only 2.2% of the sample reported Hispanic ethnicity. Parent participants were 83% biological mothers, 8% biological fathers, 7.1% legal guardians, and 1.8% step-parents. About 12% of participants had a mother or stepmother who had graduated from college; 6.7% of participants had a father who had graduated from college. Eighty-three percent of families were receiving public assistance. Participants were recruited from a midsize Midwestern city struggling with significant unemployment (15.8% at study initiation; ranked 355 out of 372 US metropolitan areas for employment opportunities; Bureau of Labor Statistics, 2010), cuts to public services, and high rates of violent crime (ranked within top 5 most violent cities in America). The median household income in the region was less than $25,000 (based on 2010 census data). With respect to social vulnerability, 64% ($n = 144$) of participants screened positive for bullying victimization, 18% ($n = 41$) for bullying perpetration, and 58% ($n = 130$) for low levels of perceived social connectedness. Another 12% ($n = 27$) of participants screened positive for both victimization and perpetration.

2.2. Measures

2.2.1. Demographics—During screening, parent/guardians completed information about youth age, gender, race/ethnicity, year in school, family receipt of public assistance, parental education, and parental residence. All other measures were completed by youth unless noted.

2.2.2. Screening instruments—The following measures were used for screening. The *Peer Experiences Questionnaire (PEQ)* is an 18-item self-report measure containing two 9-item subscales (ranges: 9–45) examining bullying perpetration and victimization. Each scale assesses overt/physical and relational aggression over the past 4 months on a scale from never, once or twice, a few times, about once a week, to several times a week (Prinstein, Boergers, & Vernberg, 2001; Vernberg, Jacobs, & Hershberger, 1999). Good internal consistency has been reported for both scales; in this sample, $\alpha = 0.82$ for perpetration and $\alpha = 0.79$ for victimization. Based on a study of over 1000 7th–9th grade youth (Vernberg, Jacobs, & Hershberger, 1999), a score approximately 1 standard deviation above the mean is considered an elevated score and was used for study eligibility. The *UCLA Loneliness Scale -Revised* (Russell, Peplau, and Cutrona, 1980; Russell, Peplau, & Ferguson, 1978) is a widely used measure assessing subjective feelings of loneliness, low connectedness, and social isolation. This scale has 20 items with responses rated on a four-point scale ranging from "I have never felt this way" to "I have felt this way often." The scale has been previously used in high-risk adolescent samples (Prinstein, Boergers, Spirito, Little, & Grapentine, 2000). Internal consistency in this sample was $\alpha = 0.80$. Sample items include: "I feel part of a group of friends [reverse coded]," and "I feel isolated from others." A score of 44 (approximately 1 standard deviation above the mean) was considered an elevated score sufficient for study eligibility.

2.2.3. Connectedness—The following measures were used to assess connectedness within family, peer, school, and community contexts. Parent-Family Connectedness (Resnick et al., 1997) was assessed with an 11-item self-report measure. Sample items included "How much do you think your mother (or father) cares about you?" and "How much do people in your family understand you." Internal consistency was established among 7– 12th grade students, across gender and racial groups; and concurrent validity was established with other measures of school connectedness and self-esteem (Sieving et al., 2001). Internal consistency in the current sample was excellent ($\alpha = 0.90$). School Connectedness (Resnick et al., 1997) was assessed with a 6-item measure. Higher scores indicate greater connectedness. Sample items include "You feel like you are a part of the school," and "your teachers care about you," rated on a 5-point Likert scale ranging from "strongly agree" to "strongly disagree." Internal consistency was good in the current sample ($\alpha = 0.84$). Our measure of Peer Connectedness was adapted from Hemingway's Adolescent Connectedness Scale (Karcher & Sass, 2010) and assesses adolescents' trust in and perceived support by friends. The scale demonstrates good internal consistency ($\alpha = 0.79$) in this sample. Responses are rated on a 5-point Likert scale ranging from 1 (not at all true) to 5 (very true). Sample items include "I have friends I am really close to and trust completely" and "I spend as much time as I can with my friends. " The Community Connectedness Scale (CCS) (Fletcher & Shaw, 2000) was developed for a study of adolescent social integration and

correlated significantly with middle schoolers' community involvement. Responses are rated on a 4-point Likert scale ranging froml (strongly disagree) to 4 (strongly agree). We reduced this scale from 5 to 3 items because use of the 5 item scale yielded an unacceptable internal consistency coefficient ($\alpha = 0.35$), whereas the final 3-item version had an acceptable internal consistency of $\alpha = 0.75$. We suspect, based on observations by research staff, that two factors accounted for the low internal consistency: 1) the first was a question asking youth if they wanted to reside in their community when they got older with some youth indicating a preference to move to a safer community with more opportunities and 2) was a poorly worded item ("few adults in my neighborhood know who I am") that youth seemed to interpret in multiple ways, with some believing the question meant "a few" and others thinking it meant "not many adults know who I am." Retained items were 1) "I get along with some adults in my neighborhood", 2) "I value the relationships I have made with adults in my neighborhood," and 3) "There are adults in my neighborhood I can go to if I need help. " As a result of these changes, it is likely that the scale assesses youth perceptions of connection to adults in their community rather than the community at large. Correlations between the 3-item community connectedness scale and the parent-family connectedness scale were 0.286, $p < 0.01$, suggesting that although related, the constructs are distinct.

2.2.4.   Adolescent adjustment—The following measures were utilized to assess markers of youth adjustment in three main areas: emotional problems (depressive symptoms, suicidal ideation, anxiety symptoms, parent-rated emotional distress) behavioral problems (non suicidal self-injury, youth and parent/guardian-reported conduct problems, substance use, sexual behavior), and adaptive functioning (self-esteem, prosocial behaviors, free time activities). Adolescent depressive symptoms were assessed with The Reynolds Adolescent Depression Scale, Second Edition: Short Form (RADS 2:SF) which was developed for community-based screening, is brief (10 items), easy to read, has excellent psychometric properties, and has extensive grade- and gender norms (Reynolds, 1987). Youth rate symptom frequency on a 4-point scale; raw scores > 23 suggest clinically significant symptoms. Internal consistency in this sample was $\alpha = 0.82$. Current suicidal ideation (SI) was assessed with the Suicidal Ideation Questionnaire-Junior: SIQ-JR (Reynolds, 1988), which was developed for community-based screening, is brief, and has grade- and gender-based norms. The SIQ-JR is a 15-item self-report questionnaire assessing the frequency (on a 7-point scale) of a wide range of suicidal thoughts. Total scores have excellent, well-documented psychometric properties (Reynolds, 1988, 1992). SIQ-JR total scores of psychiatrically hospitalized adolescents have been found to be significant predictors of suicidal thoughts and attempts 6-months post hospitalization (King, Hovey, Brand, Wilson, and Ghaziuddin, 1997). Raw scores > 31 are of clinical concern; internal consistency in this sample was excellent (0.92). The Social Anxiety Disorder subscale is a 7-item measure that was adapted from the 41-item Screen for Child and Anxiety Related Emotional Disorders (SCARED; Birmaher et al., 1999). A 3-point rating scale is used, ranging from 0 (not/hardly ever true) to 2 (true/often true). Used previously as an independent measure of social anxiety in youth, a cut-off of six is suggested to distinguish youth with clinical anxiety (Bailey, Chavira, Stein, & Stein, 2006). Internal consistency in this sample was $\alpha = 0.83$.

Youth behavior problems included NSSI, substance use, age of first sexual intercourse, and conduct problems. The Columbia Suicide Severity Rating Scale (Posner et al., 2011) was used to assess behaviors consistent with non-suicidal self-injury (NSSI). NSSI was measured with one item and scored as absent = 0 or present = 1. The first three items of the 10-item Alcohol Use Disorders Identification Test (AUDIT-C) were used to assess alcohol consumption in the past year and presence of at-risk drinking (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993). The modified AUDIT has been validated for use with adolescents in the emergency department (Chung, Colby, Barnett, & Monti, 2002); compared to other brief screening tools, it has shown superior discrimination in identifying adolescents with alcohol use disorders. Internal consistency in this sample was good ($\alpha = 0.78$). Frequency of illicit drug use (marijuana, cocaine, inhalants, or other illegal drugs) was assessed with items from the Monitoring the Future (MTF) study (Johnston, O'Malley, Bachman, & Schulenberg, 2005). A standard question was repeated for each type of substance: On how many occasions (if any) have you used Drug X during the past month, and in your lifetime: 0 occasions, 1–2, 3–5, 6–9, 10–19, 20–39, and 40 or more occasions. Due to low rates of endorsement of alcohol and drug use in this sample of early adolescents, a categorical variable combining reports on the AUDIT and MTF questions representing endorsement of any substance use (1) and no use (0) was created. Age of onset of sexual activity was derived from the Youth Risk Behavior Survey (YRBS; CDC, 2013b); youth responses included "I have never had sexual intercourse" (76% of the sample), to age of first intercourse ranging from age 11 to age 15. YRBS data have been used in numerous studies (e.g., Martins & Alexandre, 2009) to assess youth engagement in risky activities. The Strengths and Difficulties Questionnaire-Parent Report version (SDQ; Goodman, 1999) was completed by parents/guardians regarding youth functioning over the past six months, using 25 items that are rated on a 3-point Likert scale ranging from "not true" to "certainly true." The present study focused on three subscales of the SDQ: emotional distress ($\alpha = 0.72$), conduct problems ($\alpha = 0.77$), and prosocial behaviors ($\alpha = 0.81$); higher scores reflect more of the construct.

In addition to parent ratings of pro-social behavior described above, measures of adaptive functioning also included self-esteem and adaptive use of free time. Self-esteem was assessed with the 10 item Rosenberg Self Esteem Scale (RSES; Rosenberg, 1965), one of the most widely used measures of global self-esteem. The RSES uses a 4-point Likert scale ranging from strongly agree to strongly disagree and has strong internal consistency in this sample ($\alpha = 0.86$). The Social Adjustment Inventory for Children and Adolescents (SAICA; John, Gammon, Prusoff, & Warner, 1987) is a semi-structured parent-report interview developed to assess adaptive functioning. The SAICA has demonstrated good reliability in a sample of 124 youth, ages 6 to 18 years (John et al., 1987) as well as concurrent validity with the Child Behavior Checklist scales and the Global Assessment of Functioning (Biederman, Faraone, & Chen, 1993). The 6-item Free Time Problem scale was used for this study and assesses concerns such as boredom/indifference to activities, getting into trouble in free-time, or difficulty using spare time productively. Items are scored with a 4-point scale from "not at all a problem" to "severe problem;" in the current sample, internal consistency is adequate ($\alpha = 0.71$).

3. Theory, calculations, and data analysis

Based on theory and previous research, we hypothesized that connectedness to family, school, and community would be associated with lower rates of emotional and behavioral problems and with higher rates of positive adjustment in youth; we did not offer a strong hypothesis regarding peer connectedness and considered these analyses to be exploratory due to inconsistencies in previous research regarding peers and the unique nature of our participants' social challenges. Initial analyses explored associations between demographic factors (gender, race/ethnicity, age) and dependent variables using independent samples *t*-tests for continuous variables and chi-square analyses for categorical variables. Descriptive data were used to inform decisions about which variables to control for in subsequent analyses. Due to the variability in types of and extent of bullying experiences that characterized the sample, bully/perpetrator status was controlled for in subsequent analyses. The social connectedness measure used for screening was not included in subsequent analyses as it was strongly correlated with the more specific connectedness measures (e.g., *r* = 0.425 with parent-family connectedness, *r* = 0.356 with peer connectedness, 0.274 with school connectedness, and 0.203 with community connectedness) and would have limited power in examining differences between types of connectedness. Bivariate analyses examined relationships between connectedness and indicators of adolescent adjustment. Hierarchical linear and logistic regressions were used to examine the relative impact of 1) youth status as a bully perpetrator or victim and 2) the four connectedness domains on measures of youth emotional problems, behavioral problems, and positive adjustment. Gender and age were controlled and entered on Step 1 based on *t*-tests (Table 1) demonstrating their relationship to dependent variables. Participant race was not a significant predictor in regression models and thus was excluded from final regression models. Experience as a perpetrator and/or victim was entered on Step 2 of each model in order to explore their relation to youth adjustment and to examine the relations between connectedness and each outcome with severity of bullying experiences controlled. All 4 connectedness domains were entered simultaneously on Step 3 to examine the unique contribution of types of connectedness to youth outcomes. Standardized betas for independent variables and adjusted R^2 values, and changes in R^2 by step can be seen in Tables 2 and 3, with final full models in the Step 3 column. Log transformations were computed for several variables (depression, suicidal ideation, prosocial behaviors, free-time problems, conduct problems) for the regression analyses to meet assumptions of normality.

4. Results

4.1. Descriptive results

Table 1 presents the means, standard deviations, and ranges for participants' scores on all four connectedness measures as well as continuous youth and parent report indices of adjustment for the full sample and by sex.

4.1.1. Emotional problems—Overall, the levels of depressive symptoms reported by both males and females in our sample were within normal limits relative to the measure's standardization sample. Girls reported significantly higher levels of depressive symptoms,

suicidal ideation, and social anxiety than boys. Older youth were more likely to endorse depressive symptoms ($r = 0.18$, $p < 0.01$).

4.1.2. Behavior Problems—With respect to risky behaviors, 24.4% of the full sample reported engaging in some type of non-suicidal self-injury (NSSI), with girls reporting a significantly higher level of NSSI than boys (30.4% vs. 12.3% respectively; $\chi^2(1) = 8.65$, $p < 0.01$). In our sample of 12–15 year olds, 21.2% reported engaging in sexual intercourse in their lifetime; and 22.5% endorsed some lifetime use of alcohol or drugs. There were no gender differences in youth self-reports of these risky behaviors. Older youth age was strongly related to engagement in sexual activity, $t(97.9) = 8.22$, $p < 0.001$.

4.1.3. Adaptive functioning—There were no gender or age differences in use of free time, although White participants were reported to have more free time problems than Black participants, $t(178) = 2.33$, $p < 0.05$. With respect to self-esteem, there were significant gender differences, with males reporting significantly higher levels than females, $t(220) = -4.04$, $p < 0.001$. Table 1 also illustrates differences in perceptions of connectedness by gender; younger participants perceived stronger connections to family ($r = -0.18$, $p < 0.01$) and Black participants reported stronger connections to school, $t(220) = 2.06$, $p < 0.05$.

4.2. Connectedness and youth adjustment

4.2.1. Emotional problems—Regression models examining youth depression, suicidal ideation (SI), anxiety, and parent-rated emotional distress are presented in Table 2. In the model examining depression [$F(8208) = 20.70$, $p < 0.001$], parent/family ($\beta = -0.419$, $p < 0.001$) and school ($\beta = -0.293$, $p < 0.001$) connectedness were significant independent predictors of lower depression scores. A similar pattern was found with respect to suicidal ideation [$F(8209) = 11.08$, $p < 0.001$]; parent/family ($\beta = -0.235$, $p < 0.01$) and school ($\beta = -0.220$, $p < 0.01$) connectedness were both significantly and negatively associated with suicidal ideation. In the regression examining social anxiety [$F(8207) = 4.11$, $p < 0.001$], school connectedness ($\beta = -0.160$, $p < 0.05$) and community connectedness ($\beta = -0.233$, $p < 0.01$) were significant independent factors, associated with lower anxiety scores. In the model examining parent-reported emotional problems [$F(8, 171) = 2.25$; $p < 0.05$], only school connectedness was associated with lower levels of emotional problems ($\beta = -0.188$, $p < 0.01$).

4.2.2. Behavior problems—Binary logistic and linear regression models examined behavior problems and are presented in Table 3. In the binary logistic regression examining history of NSSI [$\chi^2(8) = 23.68$; $p < 0.01$; $R^2 = 0.154$], only parent-family connectedness was associated with lower odds of NSSI (OR = 0.95). In the binary logistic regression examining history of sexual activity [$\chi^2(8) = 67.22$; $p < 0.001$; $R^2 = 0.419$], community connectedness (OR = 1.28) was associated with greater odds of sexual activity, whereas school connectedness (OR = 0.91) was associated with lower odds of sexual activity. Each additional year of age with associated with a 3.5-fold increase in odds of sexual activity. The logistic regression examining substance use [$\chi^2(8) = 28.59$; $p < 0.01$; $R^2 = 0.193$, $R^2 = 0.051$] was not included in Table 3, as none of the connectedness variables were significantly associated with substance use. In the linear regression examining parent- reported conduct

problems [$F(8, 171) = 1.71$; $p = 0.100$; $R^2 = 0.031$], only parent-family connectedness was associated with lower levels of conduct problems ($\beta = -0.223$, $p < 0.05$).

4.2.3.   Adaptive functioning—A linear regression examined self-esteem [$F(8207) = 18.15$; $p < 0.001$; $R^2 = 0.390$, $R^2 = 0.316$], with parent-family connectedness ($\beta = 0.335$, $p < 0.001$) and school connectedness ($\beta = 0.343$, $p < 0.001$) both associated with more positive self-esteem. A linear regression model examined parent reports of prosocial behaviors [$F(8, 172) = -1.84$; $p = 0.072$; $R^2 = 0.036$], and did not have any significant independent predictors. A linear regression examined free-time problems [$F(8, 207) = 5.28$; $p < 0.001$; $R^2 = 0.137$, $R^2 = 0.131$], with parent-family connectedness ($\beta = -0.342$, $p < 0.001$) and school connectedness ($\beta = -0.187$, $p < 0.01$) both associated with more adaptive uses of free time, and male gender ($\beta = 0.167$, $p < 0.05$) associated with less adaptive use of free time. Due to space limitations, these results are not included in Table form but are available by request.

5.   Discussion

This study is unique in its examination of specific types of connectedness in a sample of youth selected due to their social vulnerability and residence in an urban area characterized by high rates of crime and unemployment. By examining specific types of connectedness, we were able to determine the pattern of associations between types of connectedness and youth emotional, behavioral, and adaptive functioning in this high-risk group. These findings are directly relevant to the development and implementation of prevention and intervention services for higher risk youth.

In keeping with our hypotheses, study findings revealed significant relations between youths' levels of connectedness – especially to parents and schools- and their adjustment. More specifically, youth who reported strong connections to their parents were more likely to report lower levels of depressive symptoms, suicidal ideation, non-suicidal self-injury, and parent-reported conduct problems. These same youth were also more likely to report higher levels of self-esteem and more adaptive use of their free time. Youth who reported feeling connected to their schools reported fewer depressive symptoms, and less suicidal ideation, social anxiety, and sexual activity. These youth also reported higher levels of self-esteem and more adaptive uses of free time. Peer connectedness was unrelated to youth adjustment in this sample. Community connectedness was associated with lower levels of youth anxiety, but, contrary to expectation, was a risk factor for early engagement in sexual activity. To our knowledge, this is the first study of specific types of connectedness in such a sample. Study findings have the potential to inform the enhancement of targeted intervention and prevention services for youth.

Connectedness is a social and interpersonal phenomenon; the youth in our sample who were deliberately selected due to their social difficulties, reported significant benefits of their interpersonal connections to parents and the adults in their schools. Youth who experience bullying and who describe themselves as isolated and lonely may have a host of difficulties that can make connecting to others challenging. These may include features of temperament (e.g., shyness), social anxiety, Autism Spectrum Disorders, ADHD, communication/other

developmental challenges that may result in social skills difficulties. Nevertheless, these youth appeared able to form strong and helpful bonds with adults and these connections-to parents and school especially- were associated with lower levels of a host of emotional and behavioral problems and higher levels of adaptive functioning. Our findings replicate studies conducted in larger community samples with differing characteristics (Kaminski, Puddy, Hall, Cashman, Crosby, & Ortega, 2010; Loukas et al., 2010) supporting the benefits of parental and school connectedness and adding to evidence that connectedness to these primary contexts may be fundamental during adolescence.

Connectedness to parents appears particularly important in comparisons of four different types of connectedness. Consistent with a host of previous studies that link parent-child relationships to better outcomes for youth, (e.g., Sturge-Apple et al., 2010) our results are also meaningful when considering the contextual risk factors that characterized our sample (low income, high rates of crime and unemployment). Poverty and exposure to community crime are thought to create challenges such as higher parental stress and less ability to supervise and monitor youth (McLoyd, Mistry, and Hardaway, 2014); our findings highlight the resilient nature of the families in our study whose parent-child connections appear to be benefiting youth despite community-level risk factors. Prior studies have also found that parenting practices can buffer the impact of bullying victimization on youth self-harm behaviors (Hay & Meldrum, 2010) and that emotional support from caregivers can protect against depression in relationally victimized youth (DesJardins and Leadbetter, 2011). Our results and these prior studies support parent-child connectedness as a vital protective factor for vulnerable youth.

School connectedness was also clearly linked to positive youth adjustment in our sample. These findings replicate prior studies in large community samples that continue to document the protective impact of schools on youth development (Loukas et al., 2010). It seems particularly noteworthy that school connectedness was associated with positive outcomes even for youth who may not be experiencing positive peer relationships while at school. Our results link well to previous findings that suggest that school connectedness may serve a compensatory function (i.e., may "make up for" low levels of connection) in other areas of life (Loukas et al., 2010). Previous studies (McNeely et al., 2002; Thompson, et al., 2006) have suggested that students are more likely to feel connected to schools when the students themselves and the schools have more financial resources. In our sample, connectedness is present, important to youth adjustment, and does not appear dependent on school financial resources. Student connectedness may be more related to positive relationships with teachers, or to school climate.

We expected that community connectedness would be of greater importance in our sample, given previous findings regarding the importance of non-parental adults to youth resiliency (Ahrens et al., 2011). In our sample, community connectedness was associated with reductions in anxiety but elevated rates of sexual activity. Our measure of community connectedness is noted as a possible study limitation below; future research is needed to further explore community connectedness, especially in under-resourced communities.

Due to inconsistencies in the literature, we did not advance a strong hypothesis about the function of peer connectedness in this unique sample. Interestingly, peer connectedness was unrelated to any of our outcome measures, suggesting that there is more to learn about peer relationships among youth with social challenges who reside in potentially risky neighborhood contexts. Previous research (DesJardins and Leadbetter, 2011; Logan et al., 2011) has suggested possible iatrogenic effects of peer connectedness in higher risk samples (e.g., youth with histories of relational victimization, youth residing in under-resourced communities, youth associating with delinquent friend groups). For example, Desjardins and colleagues found that high levels of peer support were associated with increases in depression among youth with relational victimization. The authors posited that this may be due to co-rumination about negative thoughts or sharing too much personal information, which can increase risk for future victimization. The lack of association between peer connectedness and youth adjustment in this study may have been an artifact of variability in our sample in terms of the specific types of social challenges youth were experiencing. For example, youth who bully others may associate with peers whose presence is a negative influence; whereas youth who are victims may have felt their peer relationships to be helpful and supportive. Future research should continue to explore associations between peer connectedness and youth adjustment in more homogenous groups of socially vulnerable youth.

5.1. Limitations

There are several important limitations to this study. First, the youth in our study were selected based on residence within a catchment area that is over 55% African American with a median household income of < $25,000 (based on 2010 census data) as such they are not representative of all youth nor are they representative of all youth from under-resourced communities. Although previous research suggests that positive connections benefit adolescents across racial, ethnic, and economic groups, more research is needed to understand the ways in which community culture may impact associations between connectedness and youth adjustment (Bernat & Resnick, 2009). We have more to learn about how best to measure positive community connectedness in neighborhoods that are challenged by poverty and crime. Some of these issues may have impacted our findings regarding peer and community connectedness. All data in this study were collected within one time point, limiting our ability to address temporality. Future research should examine whether connectedness measured at one time point might have lasting benefits. Finally, our study may have been under-powered to detect small effects, but was sufficiently powered to detect moderate or large effects.

5.2. Conclusion and implications

Our findings have important implications for interventions targeting high-risk groups. Vast numbers of youth are faced with structural-level risk factors that are difficult to alter, such as poverty, low-resourced neighborhoods and schools, and exposure to community violence (e.g., Robbins, Stagman, & Smith, 2012; Finkelhor, Turner, Shattuck, & Hamby, 2013). In addition, many youth struggle with social challenges for a variety of reasons, such as temperament, social skills challenges, and psychopathology. Many of these factors characterized our sample of youth. "Upstream" prevention approaches are designed to target

modifiable factors that may have benefits across multiple areas of youth functioning and therefore may have more far-reaching impact (e.g., Wyman, 2014). Our findings suggest that connectedness, particularly to caregivers and schools, has the potential to protect against an array of emotional/behavioral problems even in youth with significant interpersonal problems (e.g., bullying victimization, perpetration, isolation) who are living in a low-income, high crime urban area.

From a clinical standpoint, our findings suggest the need to assess youth relationships and level of connectedness across multiple settings. Focusing on strengthening the parent-child bond and enhancing parenting skills (e.g., monitoring and specific communication) may also improve connectedness (Caldwell et al., 2011; Thomas et al., 2012) and result in better youth outcomes. At a public health level, programming that provides access to parenting education and support, especially in under-resourced communities, may be an important component of upstream prevention programming. Clinicians working with youth with social challenges would also be advised to build relationships with school staff, given our findings that school connectedness could serve to buffer and support youth who are struggling socially. Providing teachers with the time and training they need to support youth with mental health challenges may provide ongoing benefits for higher risk youth. A recent qualitative study of systems involved youth in Australia points to the power of connectedness in building resilience and positive outcomes for vulnerable youth (Noble-Carr, Barker, McArthur, & Woodman, 2014); these youth described the role of connections to caring others as critical to their recovery and as a vital contributor to the development of a positive identity. Once these youth experienced being "cared about" by someone, they described a cascade of positive impacts, including a sense of belonging, participation in meaningful activities, and a belief in their own abilities (Noble-Carr et al., 2014).

Future research should determine the extent to which connectedness is a modifiable intervention target among high risk youth and how enhancements in connections would translate into longitudinal outcomes for youth in the near and long term.

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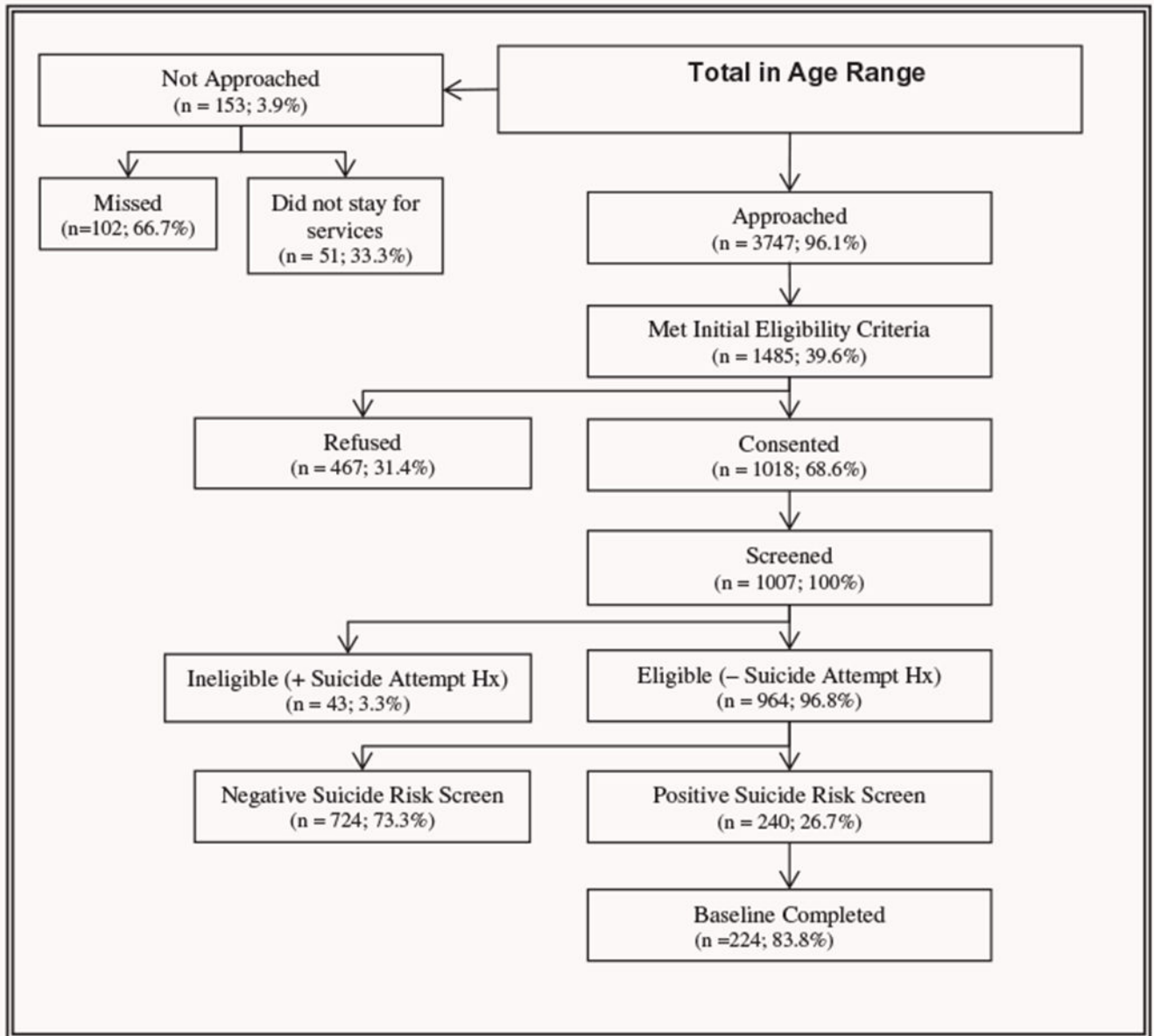
Fig. 1.
Subject flow diagram.

Table 1

Mean, Standard deviations, and *t*-test comparison of continuous variables by sex.

Variables	Scale range	Full sample	Male	Female	*t*-Test
		Mean (SD) *N* = 224	Mean (SD) *n* = 75	Mean (SD) *n* = 149	
Age	12.00–15.99	13.93 (1.1)	13.72 (1.1)	14.03 (1.1)	1.94
P-F Conn	11–55	40.58 (9.4)	43.38 (7.46)	38.18 (9.3)	−5.78 ***
School Conn	6–30	20.80 (5.8)	22.38 (5.0)	20.01 (6.0)	−3.14 **
Comm Conn	3–12	8.13 (2.5)	8.36 (2.4)	8.01 (2.6)	−1.02
Peer Conn	6–30	19.70 (5.5)	18.82 (5.2)	20.13 (5.6)	1.73
Depressive Sx	10–40	22.15 (6.8)	19.23 (6.1)	23.63 (6.7)	4.91 ***
SIQ	0–90	10.68 (13.8)	6.04 (8.0)	13.02 (15.5)	3.66 ***
Social anxiety Sx	0–14	8.25 (3.7)	7.20 (3.9)	8.78 (3.4)	2.94 **
Emotional distress[a]	0–10	3.37 (2.4)	3.39 (2.5)	3.37 (2.4)	−0.05
Conduct problems[a]	0–10	2.85 (2.5)	3.23 (2.6)	2.65 (2.4)	−1.49
Prosocial behaviors[a]	0–10	7.65 (2.3)	7.14 (2.5)	7.92 (2.2)	2.11 *
Self esteem	0–30	19.04 (6.3)	21.35 (5.5)	17.88 (6.3)	−4.04 ***
Free time problems[b]	6–24	10.11 (3.6)	10.28 (4.0)	10.03 (3.4)	−0.48

Note: SX = Symptoms.

[a] *Emotional Distress. Conduct Problems, and Prosocial Acts are derived from the Strengths and Difficulties Questionnaire. Parent Report Version and have a shghtly different sample size. Full (N = 187); Male (N = 64); Female (N = 123).*

[b] Free Time Problems are derived from parent report on the SAICA.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

Table 2

Regression analyses for emotional distress.

Variables	Step 1				Step 2				Step 3		
B	SE(B)	β	R²	B	SE(B)	β	R²	B	SE(B)	β	R²
Depression			0.118	–			+0.034	–			+0.270
Age	0.018	0.008	0.148*	–	0.020	0.008	0.161*	–	0.007	0.007	0.057
Sex (1-F; 2-M)	−0.089	0.019	−0.304***	–	−0.085	0.019	−0.291***	–	−0.029	0.017	−0.100
Victimization	–	–	–	–	0.003	0.001	0.121	–	0.001	0.001	0.065
Perpetration	–	–	–	–	0.004	0.002	0.132*	–	0.002	0.002	0.058
P-F Conn	–	–	–	–	–	–	–	–	−0.006	0.001	−0.419***
School Conn	–	–	–	–	–	–	–	–	−0.007	0.001	−0.293***
Comm Conn	–	–	–	–	–	–	–	–	0.001	0.003	0.015
Peer Conn	–	–	–	–	–	–	–	–	0.000	0.001	0.011
SI			0.069	–			+0.087	–			+0.115
Age	0.051	0.032	0.104	–	0.061	0.031	0.124	–	0.023	0.030	0.046
Sex (1-F; 2-M)	−0.290	0.078	−0.245***	–	−0.250	0.075	−0.212**	–	−0.096	0.076	−0.081
Victimization	–	–	–	–	0.022	0.006	0.260***	–	0.017	0.005	0.203**
Perpetration	–	–	–	–	0.012	0.008	0.102	–	0.005	0.007	0.048
P-F Conn	–	–	–	–	–	–	–	–	−0.014	0.004	−0.235**
School Conn	–	–	–	–	–	–	–	–	−0.021	0.006	−0.220**
Comm Conn	–	–	–	–	–	–	–	–	−0.021	0.014	−0.093
Peer Conn	–	–	–	–	–	–	–	–	0.010	0.006	0.103
Social Anx			0.039	–			+0.000	–			+0.065
Age	0.217	0.217	0.068	–	0.205	0.218	0.064	–	0.061	0.215	0.019
Sex (1-F; 2-M)	−1.52	0.520	−0.198**	–	−1.53	0.527	−0.199**	–	−1.26	0.553	−0.164*
Victimization	–	–	–	–	−0.017	0.040	−0.030	–	−0.036	0.039	−0.065
Perpetration	–	–	–	–	−0.060	0.052	−0.080	–	−0.085	0.051	−0.114
P-F Conn	–	–	–	–	–	–	–	–	0.006	0.029	0.015
School Conn	–	–	–	–	–	–	–	–	−0.101	0.046	−0.160*

Variables B	Step 1				Step 2				Step 3			
	B	SE(B)	β	R²	B	SE(B)	β	R²	B	SE(B)	β	R²
Comm Conn	–	–	–	–	–	–	–	–	–	-0.337	0.100	-0.233 **
Peer Conn	–	–	–	–	–	–	–	–	–	0.022	0.046	0.033
Parent-Report emotional distress [a]	0.003	–	–	–	+ 0.010	–	–	–	+ 0.040	–	–	–
Age	–	0.029	0.019	0.118	–	0.032	0.019	0.128	–	0.018	0.019	0.071
Sex (1-F; 2-M)	–	0.003	0.045	0.005	–	0.022	0.046	0.037	–	0.064	0.049	0.106
Victimization	–	–	–	–	–	0.006	0.004	0.135	–	0.004	0.004	0.091
Perpetration	–	–	–	–	–	-0.007	0.005	-0.114	–	-0.008	0.004	-0.141
P-F Conn	–	–	–	–	–	–	–	–	–	-0.003	0.003	-0.097
School Conn	–	–	–	–	–	–	–	–	–	-0.009	0.004	-0.188 *
Comm Conn	–	–	–	–	–	–	–	–	–	-0.010	0.009	-0.087
Peer Conn	–	–	–	–	–	–	–	–	–	0.002	0.004	0.042

Note. R^2 = Adjusted R^2.

P-F = Parent-Family; Comm = Community; Conn = Connectedness; SI = Suicidal Ideation; Anx = Anxiety.

[a] Parent Report measures have a slightly different sample size.

*
$p < 0.05$.

**
$p < 0.01$.

***
$p < 0.001$.

Table 3

Regression analyses for risky behaviors.

Variables	Step 1				Step 2				Step 3				
	B	SE(B)	Wald χ²	R^2[a]	B	SE(B)	Wald χ²	R^2[a]	B	SE(B)	Wald χ²	OR (95% CI)	R^2[ab]
NSSI				0.070				+ 0.012					+ 0.072
Age	0.140	0.144	0.95	–	0.159	0.145	1.19	–	0.069	0.154	0.20	1.07 (0.79, 1.45)	–
Sex (1-F; 2-M)	−1.10	0.402	7.50**	–	−1.08	0.406	7.05**	–	−0.593	0.438	1.83	0.55 (0.23, 1.31)	–
Victimization	–	–	–	–	0.024	0.026	0.84	–	0.009	0.028	0.10	1.01 (0.96, 1.07)	–
Perpetration	–	–	–	–	0.022	0.034	0.41	–	0.006	0.035	0.03	1.01 (0.94, 1.08)	–
P-F Conn	–	–	–	–	–	–	–	–	−0.050	0.021	5.86*	0.95 (0.91, 0.99)	–
School Conn	–	–	–	–	–	–	–	–	−0.051	0.032	2.64	0.95 (0.89, 1.01)	–
Comm Conn	–	–	–	–	–	–	–	–	−0.012	0.070	0.03	0.99 (0.86, 1.13)	–
Peer Conn	–	–	–	–	–	–	–	–	0.046	0.033	1.91	1.05 (0.98, 1.12)	–
Sexual activity				0.284				+ 0.042					+ 0.093
Age	1.11	0.203	29.9***	–	1.15	0.211	29.7***	–	1.26	0.238	27.9***	3.51 (2.21, 5.60)	–
Sex (1-F; 2-M)	−0.371	0.420	0.78	–	−0.491	0.441	1.24	–	−0.205	0.502	0.17	0.81 (0.31, 2.28)	–
Victimization	–	–	–	–	−0.012	0.033	0.14	–	−0.027	0.037	0.52	0.97 (0.91, 1.05)	–
Perpetration	–	–	–	–	0.103	0.041	6.24*	–	0.103	0.045	5.20*	1.11 (1.02, 1.21)	–
P-F Conn	–	–	–	–	–	–	–	–	−0.041	0.025	2.70	0.96 (0.91, 1.01)	–
School Conn	–	–	–	–	–	–	–	–	−0.095	0.040	5.73*	0.91 (0.84, 0.98)	–
Comm Conn	–	–	–	–	–	–	–	–	0.244	0.095	6.61*	1.28 (1.06, 1.54)	–
Peer Conn	–	–	–	–	–	–	–	–	−0.034	0.040	0.72	0.97 (0.89, 1.05)	–

Variables	Step 1				Step 2				Step 3			
	B	SE(B)	β	R^2	B	SE(B)	β	R^2	B	SE(B)	β	R^2
Conduct Probs[b]				0.002				+ 0.007				+ 0.022
Age	0.019	0.020	0.074	–	0.020	0.020	0.076	–	0.010	0.020	0.038	–
Sex (1-F; 2-M)	0.061	0.047	0.098	–	0.062	0.048	0.098	–	0.108	0.052	0.173*	–
Victimization	–	–	–	–	0.002	0.004	0.048	–	0.002	0.004	0.039	–
Perpetration	–	–	–	–	0.007	0.005	0.113	–	0.006	0.005	0.101	–

Variables	Step 1				Step 2				Step 3			
	B	SE(B)	β	R^2	B	SE(B)	β	R^2	B	SE(B)	β	R^2
P-F Conn	–	–	–	–	–	–	–	–	−0.007	0.003	−0.223[*]	–
School Conn	–	–	–	–	–	–	–	–	−0.002	0.004	−0.035	–
Comm Conn	–	–	–	–	–	–	–	–	0.007	0.010	0.057	–
Peer Conn	–	–	–	–	–	–	–	–	0.000	0.004	−0.007	–

Note. R^2 = Adjusted R^2. P-F = Parent-Family; Comm = Community; Conn = Connectedness; NSSI = Non-Suicidal Self Injury; SB = Suicidal behavior.

[*]
$p < 0.05$.

[**]
$p < 0.01$.

[***]
$p < 0.001$.

[a] Nagelkerke pseudo R^2.

[b] Parent report measure; sample size was smaller (n = 179).