Adolescent Peer Victimization, Peer Status, Suicidal Ideation, and Nonsuicidal Self-Injury:

Examining Concurrent and Longitudinal Associations

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Abstract

This study examined concurrent and longitudinal associations among peer victimization, peer status, and self-injurious thoughts and behaviors (i.e., suicidal ideation and nonsuicidal self-injury [NSSI]) over a 2-year period. A community sample of 493 adolescents (51% girls) in Grades 6–8 participated in the study. Participants completed measures of suicidal ideation and NSSI at three time points. Measures of peer victimization (overt and relational) and peer status (preference-based and reputation-based popularity) were collected by using a standard sociometric procedure. The hypothesized model was examined by using a multiple group (by gender) latent growth curve analysis. Results suggested that high levels of overt victimization were associated with increases in suicidal ideation over time for girls. No effects were revealed for relational victimization in the prediction of concurrent or longitudinal associations with suicidal ideation for boys or girls. With respect to peer status, low levels of preference-based popularity were associated with increases in suicidal ideation over time. Implications for understanding the complex patterns of association among different forms of peer victimization, self-injurious thoughts and behaviors, and peer group status are discussed.

Recent data suggest that the rate of self-injurious thoughts and behaviors increases dramatically at the transition to adolescence (Centers for Disease Control and Prevention [CDC], 2004; Kessler, Berglund, Borges, Nock, & Wang, 2005; World Health Organization [WHO], 2005). Longitudinal studies suggest that the peak prevalence of suicidal ideation occurs during midadolescence and that there is a heightened incidence of individuals reporting suicidal thoughts in the adolescent period (Fergusson, Woodward, & Horwood, 2000; Kerr, Owen, Pears, & Capaldi, 2008; Rueter & Kwon, 2005). Although it is not uncommon for adolescents to have thoughts of suicide (Evans, Hawton, Rodham, & Deeks, 2005), suicidal ideation is a known risk factor for suicide attempt, which is associated with an increased risk of completed suicide (King, 1997). Moreover, whereas thoughts of suicide generally are less prevalent among adolescent boys than girls, suicidal ideation predicts

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suicide attempt regardless of gender (e.g., Evans et al., 2005; Reinherz, Tanner, Berger, Beardslee, & Fitzmaurice, 2006).

The transition to adolescence also marks a developmental period notable for a rise in the prevalence of nonsuicidal self-injury (NSSI) behaviors. NSSI has been defined as intentional, self-inflicted body tissue damage (e.g., repetitive cutting, burning), conducted neither with suicidal intent nor in adherence to religious or cultural customs (e.g., Nock, Joiner, Gordon, Lloyd-Richardson, & Prinstein, 2006). Approximately 7.5% of middle-school students engage in NSSI (Hilt, Nock, Lloyd-Richardson, & Prinstein, 2008), and this rate increases with age (e.g., 12–21% of high school adolescents in a community-based sample [Favazza, DeRosear, & Conterio, 1989; Ross & Heath, 2002; Whitlock, Eckenrode, & Silverman, 2006; Zoroglu et al., 2003]); the frequency of NSSI is notably higher within clinical samples (e.g., 40–60% of adolescent psychiatric inpatients [Darche, 1990; DiClemente, Ponton, & Hartley, 1991]).

To date, there has been growing interest in the role of peer victimization as a possible precipitant of self-injurious thoughts and behaviors. Anecdotal evidence drawn from several recent cases profiled in the media has led to much speculation that being victimized by peers is a cause of suicide, and the term *bullycide* has emerged in response to this proposition (e.g., Marr & Field, 2001). Despite the apparent salience of self-harm as a foreseeable consequence of peer victimization, there remains a relative paucity of developmental research examining causal associations between suicide-related behaviors and negative peer experiences. Moreover, although peer victimization has been linked to a host of concurrent (e.g., Hawker & Boulton, 2000) and longitudinal adjustment difficulties (see Juvonen & Graham, 2001), many unanswered questions remain regarding peer functioning within the suicide literature.

The importance of studying peer victimization as a potential risk factor in the development of suicide-related behaviors and NSSI is underscored by the fact that adolescents frequently cite interpersonal problems (e.g., peer rejection/victimization, social isolation, peer relationship disputes) as a precipitant of suicidal behavior (Berman & Schwartz, 1990; Hawton, Fagg, & Simkin, 1996). In addition, early studies based on interview or checklist data have suggested that peer problems (e.g., social isolation from peers) are reported by hospitalized suicidal adolescents more frequently than by nonsuicidal controls (Khan, 1987; Kosky, Silburn, & Zubrick, 1986; Rohn, Sarles, Kenny, Reynolds, & Heald, 1977; Topol & Reznikoff, 1982). There is preliminary evidence that several aspects of peer functioning (i.e., self-reported peer rejection experiences, low friendship support, deviant peer associations) may be concurrently or longitudinally associated with increases in suicidal ideation or behavior (Prinstein, Boergers, & Spirito, 2001; Prinstein, Boergers, Spirito, Little, & Grapentine, 2000; Rigby & Slee, 1999). With respect to NSSI, there is accumulating evidence that individuals engage in NSSI as a strategy for reducing a negative stimulus (e.g., negative affect) (e.g., M. Z. Brown, Comtois, & Linehan, 2002; Chapman, Gratz, & Brown, 2006; Klonsky, 2007; Nock & Prinstein, 2004, 2005). Given that peer victimization is likely to generate increased negative emotions, it follows that engagement in NSSI might function as a means of regulating associated distress in response to victimization experiences.

The present longitudinal study was designed to address five methodological and two conceptual limitations of prior work. First, it is notable that the extant literature examining associations between peer victimization and self-injury is exclusively comprised of cross-sectional studies (e.g., Ivarsson, Broberg, Arvidsson, & Gillberg, 2005; Kaltiala-Heino, Rimpelä, Marttunen, Rimpelä, & Räntanen, 1999; Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2007; Mills, Guerin, Lynch, Daly, & Fitzpatrick, 2004). This was highlighted by Kim and Leventhal (2008) in a systematic review of 37 published studies on school bullying and suicidal ideation as it was noted that all 37 past studies were cross-sectional designs. Similarly, in another review of the empirical literature on peer victimization and suicidality, King and Merchant (2008) reported that, to date, no longitudinal population- or community-based studies have examined the longitudinal effects of peer victimization on adolescent suicidality. In a more recent study, Klomek et al. (2008) found no predictive association between boys' childhood peer victimization at age 8 and their self-reported suicidal ideation at age 18; however, this remains the only known longitudinal study of links between victimization by peers and later suicidal ideation. Second, the vast majority of prior research efforts have been based on self-reports of peer victimization and/or peer status. Of the studies cited by Kim and Leventhal (2008), only two employed a peer nomination method as measures of peer constructs (Kim, Koh, & Leventhal, 2004; Rigby & Slee, 1999). This is an important limitation because traditional sociometric assessments are widely considered to be the most valid indicators of peer status (Coie & Dodge, 1983). Moreover, given that one of the major sources of common method variance is obtaining the measures of both predictor and criterion variables from the same rater, it follows that using a multimethod approach (i.e., self-report and peer report) to tap the constructs of interest is clearly advantageous. Third, many existing studies have assessed suicide-related thoughts and behavior by using brief screening instruments (i.e., single item), raising concern about the reliability of these measures. Measurement concerns also have arisen from the use of arbitrary metrics to assess the severity of suicidal ideation (see Nock, Holmberg, Photos, & Michel, 2007). Fourth, no prior studies have considered peer victimization as a predictor of NSSI. In fact, no known studies have examined NSSI longitudinally at all, suggesting a strong need for more research on the development of this high-risk self-injurious behavior. Fifth, studies rarely have examined the association between peer victimization and suicidal ideation above and beyond the contribution of depressive symptoms. This is important given that past research has demonstrated significant associations between peer victimization and depression (e.g., Prinstein, Cheah, & Guyer, 2005), and it will be important to determine whether peer experiences are relevant to the study of suicidal ideation as a unique outcome. The present study therefore offers an important extension of prior work by using standard peer nomination procedures to examine victimization, by implementing a more thorough assessment of the frequency of suicidal ideation and presence of NSSI, by controlling for the predictive value of depressive symptoms, and by examining associations longitudinally in a multiwave study.

In addition to addressing these key measurement limitations, the present study allowed for an examination of peer victimization in the context of two recent conceptual developments in the peer relations literature. First, this study offered an opportunity to examine how multiple aspects of peer relations may be implicated in suicidal ideation and NSSI. Indeed,

there is a long-standing tradition of considering multiple types of peer experiences that may be associated with adjustment (Hartup, 1996). In addition to peer victimization experiences that denote specific aversive interchanges among peers, group-level peer status focuses on reputations among peers within the overall social context (such as acceptance/rejection or popularity). For decades, group-level peer status has been defined as a preference-based construct, typically assessed by asking peers to nominate their preferred peers (those who are liked most or liked least) (Coie & Dodge, 1983). A distinct reputation-based construct has been developed to reflect youths' reputations of status and popularity at the group level (based on peer nominations of most and least popular) (Parkhurst & Hopmeyer, 1998). In light of the importance of considering multiple peer experiences in understanding the significance of peer victimization experiences, the present study explored both preference-based and reputation-based popularity as predictors of suicidal ideation and NSSI.

Second, prior research on peer victimization has been somewhat limited by a focus on overt, physical behaviors (e.g., hitting, pushing), which arguably are more common among boys than girls (e.g., Björkqvist, Lagerspetz, & Kaukiainen, 1992; Crick & Bigbee, 1998; Crick et al., 2001; Owens, Slee, & Shute, 2000). The concept of relational victimization was introduced to refer to behaviors designed to inflict harm on the targeted victim's relationships with other peers and includes behaviors such as lying, spreading rumors, social exclusion, and threatening to withdraw friendship (Crick & Bigbee, 1998; Crick, Casas, & Nelson, 2002; Crick & Grotpeter, 1996). These behaviors may be particularly important given that the high level of sharing and openness that characterizes many adolescent relationships creates a vulnerability to having information used against someone in the peer context (Prinstein, Boergers, & Vernberg, 2001). Indeed, the effects of peer victimization may be especially potent during adolescence because the adolescent transition marks a developmental period characterized by changes in the frequency and quality of peer interactions, corresponding decreases in parental monitoring, and experimentation with new social roles among peers (B. B. Brown, 1990). Changes in the frequency and quality of peer interactions are accompanied by notable changes in interpersonal expectations and functioning, and these changes may have particular import for girls (e.g., Rose & Rudolph, 2006; Rudolph, 2002). Specifically, compared to peer relationships in childhood, adolescent peer experiences involve greater emotional disclosure and esteem support, particularly among girls (Buhrmester & Furman, 1987; Furman & Buhrmester, 1992). Moreover, girls exhibit a stronger relational orientation and greater affiliative needs in adolescence as compared to boys (Cyranowski, Frank, Young, & Shear, 2000; Nolen-Hoeksema & Girgus, 1994; Rudolph, 2002). Unfortunately, this orientation also may be partially responsible for girls' difficulties with interpersonal stressors (Greene & Larson, 1991; Rose & Rudolph, 2006).

The importance of assessing both physical and relational forms of victimization is underscored by findings that relational victimization predicts indices of social-emotional functioning (e.g., depressive symptoms, social anxiety, loneliness) and peer status, over and above what is accounted for by physical victimization (Crick & Bigbee, 1998; Crick & Grotpeter, 1996; Paquette & Underwood, 1999). Moreover, some evidence suggests there may be gender-linked vulnerability to the subtypes of victimization. Specifically, it may be that, relative to boys, girls are especially distressed by relational victimization because of

their emphasis on peer evaluation and maintaining relationships. Conversely, the experience of physical victimization may be more damaging to boys because of the focus on dominance within the social hierarchy (for a review, see Rose & Rudolph, 2006). Findings reported by Prinstein, Boergers, et al. (2001) provide support for these contentions in that relational victimization contributed to depressive symptoms among adolescent girls but not adolescent boys, whereas physical victimization contributed to depressive symptoms for boys but not girls. Similarly, Storch, Brassard, and Masia-Warner (2003) found that relational victimization was linked to internalizing difficulties for girls but not for boys, whereas physical victimization was associated with internalizing difficulties for both boys and girls. It also has been argued that gender non-normative victimization (i.e., relational victimization for boys and physical victimization for girls) may be associated with maladjustment (e.g., Crick & Bigbee, 1998; Hoglund & Leadbeater, 2007), highlighting the complexity of gender differences in the study of outcomes associated with physical and relational victimization. Other studies have observed few notable gender differences in the risks associated with relational and physical victimization (e.g., Sullivan, Farrell, & Kliewer, 2006).

Although there is preliminary evidence to support physical and relational forms of victimization as unique predictors of adjustment outcomes, very few studies have examined physical and relational victimization as predictors of suicidal ideation or NSSI among adolescents. Baldry and Winkel (2003) found that both direct victimization (i.e., physical, psychological, or verbal bullying) and relational victimization (i.e., social exclusion, rumor spreading) were correlated with suicidal ideation; however, only relational forms of victimization predicted suicidal ideation when controlling for demographic variables, physical abuse by parents, and exposure to parental domestic abuse. In a similar vein, Toros, Bilgin, Sasmaz, Bugdayci, and Camdeviren (2004) reported that peer problems and victimization at school (e.g., humiliation, physical abuse) were predictors of adolescent suicide attempts, controlling for several environmental risk factors (e.g., substance use, skipping school). Although these studies point to the potential significance of different forms of victimization as independent predictors of suicide-related thoughts and behavior, both studies relied on self-reported victimization and involved different outcome variables (i.e., ideation and attempts).

The present study seeks to contribute to the emerging theoretical and empirical literatures by examining whether physical and relational peer victimization experiences predict suicide-related thoughts (e.g., suicidal ideation) and NSSI, both concurrently and longitudinally. Based on the extant literature, it is hypothesized that both physical and relational victimization will be associated with higher self-reported suicidal ideation and NSSI. In addition, it is hypothesized that both forms of victimization will predict increases in suicidal ideation and NSSI over time. Gender is predicted to moderate the associations between peer victimization and concurrent suicidal ideation, as well as growth over time. Specifically, it is predicted that relational victimization will be more closely associated with suicidal ideation and NSSI among girls than boys, whereas physical victimization will be more strongly associated with suicidal ideation and NSSI among boys than girls. It also is predicted that individuals who are disliked (i.e., low preference-based popularity) within the peer context will be more likely to demonstrate high levels of suicide-related behavior both concurrently

and longitudinally. A similar pattern of results is anticipated for individuals who are unpopular (i.e., low reputation-based popularity).

Methods

Participants

Participants included 493 adolescents (girls, 51%) in Grades 6 (35%), 7 (30%), and 8 (36%) at the beginning of the study. All participants were between the ages of 11 and 14 ($M = 12.60$, $SD = .96$). The ethnic composition of the sample included 87% White/Caucasian, 2% African American, 4% Asian American, 2% Latino American, and 6% of participants from mixed ethnic backgrounds. Participants were enrolled at one of two public schools within a city of fairly homogeneous middle-class socioeconomic status in the northeastern United States. According to neighborhood and school records, average adult per-capita income was approximately $30,220, and 11% of children were eligible for free or reduced-price lunch. Data were collected between 2000 and 2003.

At the outset of the study (i.e., Time 1), all students in Grades 6–8 were recruited from 15 classrooms for participation. Consent forms were returned by 92% of families ($n = 784$); of these, 80% of parents gave consent for their child's participation ($n = 627$; 74% of the total population). Students who were absent on one of the days of testing ($n = 10$), provided incomplete data ($n = 15$), or refused to participate ($n = 4$) were excluded from analyses, yielding a final sample of 598 participants at Time 1. A total of 520 (87%) of these participants completed testing approximately 1 year later (i.e., Time 2), when students were in Grades 7–9. Attrition was due to participants' moving away from the area ($n = 36$), absenteeism ($n = 7$), incomplete data ($n = 30$), and refusal to continue participation ($n = 5$). At Time 3, a total of 493 adolescents (84% of Time 2 participants, and 73% of Time 1 participants) were available for testing. Time 3 data were collected approximately 1 year after Time 2. Attrition between Time 2 and Time 3 was due mostly to students who moved away from the area ($n = 35$) or who were unavailable during testing ($n = 47$).

With respect to study variables, attrition analyses revealed several significant differences between adolescents with and without available data at all three time points. Specifically, as compared to adolescents who did not participate at all three time points, those with complete data had higher levels of peer acceptance (retained sample: $M = .18$, $SD = .88$; non-retained sample: $M = -.24$, $SD = 1.07$; $t[247.65] = 4.56$, $p < .001$), higher peer-perceived popularity (retained sample: $M = .09$, $SD = .96$; non-retained sample: $M = -.16$, $SD = 1.06$; $t[625] = 2.67$, $p < .001$), lower levels of overt/physical victimization (retained sample: $M = -.11$, $SD = .83$; non-retained sample: $M = .20$, $SD = 1.25$; $t[208.17] = 2.92$, $p < .01$), lower levels of relational victimization (retained sample: $M = -.11$, $SD = .90$; non-retained sample: $M = .18$, $SD = 1.18$; $t[223.69] = 2.85$, $p < .01$), lower levels of depressive symptoms (retained sample: $M = .27$, $SD = .24$; non-retained sample: $M = .32$, $SD = .29$; $t[596] = 2.17$, $p < .01$), and lower levels of suicidal ideation at baseline (retained sample: $M = 1.30$, $SD = .51$; non-retained sample: $M = 1.42$, $SD = .64$; $t[243.18] = 2.35$, $p < .05$). Given that there was evidence of nonrandom missing data, all analyses were conducted only on the subsample of 493 adolescents with complete longitudinal data.

Measures

Peer nominations of peer victimization (overt and relational) and peer status (preference-based popularity and reputation-based popularity) were conducted at Time 1. A self-reported instrument of depressive symptoms also was collected at Time 1, and measures of suicidal ideation and NSSI were administered at all three time points.

Peer victimization—Measures of peer victimization were collected by using standard sociometric procedures. Adolescents at the school were organized in 15 academic teams, each of which was roughly twice the size of a traditional academic classroom. At the initial time point, adolescents were presented with an alphabetized roster of all academic teammates. To control for possible effects of alphabetization on nominee selection, the order of names on the rosters was counterbalanced (e.g., Z through A). To assess forms of victimization, an unlimited nomination procedure was completed by using rosters of all academic teammates. Adolescents were asked to identify peers who were targets of the two forms of peer victimization. Peer nomination items were used to index overt victimization (i.e., "Who gets threatened or hit by others or has mean things said to them?") and relational victimization (i.e., "Who gets gossiped about or has rumors told about them behind their backs?"). The tallied number of nominations for each child on each form of peer victimization was then standardized within each academic team. Sociometric nomination procedures are believed to generate the most reliable and valid indices of peer constructs, and the procedure generates an ecologically valid measure that is not influenced by adolescents' self-report (Coie & Dodge, 1983; Parkhurst & Hopmeyer, 1998).

Peer status—At baseline, adolescents also were asked to nominate an unlimited number of peers whom they "liked the most" and "liked the least." The number of nominations received for each item was used to compute a standardized score. A measure of preference-based popularity (i.e., social preference) was then created by calculating the difference between "like most" and "like least" standard scores and restandardizing this value. Higher scores of preference-based popularity indicate greater likeability among peers (Coie & Dodge, 1983). Additionally, adolescents were asked to nominate peers who were "most popular" and "least popular" (LaFontana & Cillessen, 1999; Parkhurst & Hopmeyer, 1998). Standardized nominations were computed for these items. Difference scores were computed and restandardized to represent levels of reputation-based popularity (i.e., social reputation), with higher scores indicating that an adolescent was perceived by his or her classmates as having a higher reputation of popularity.

Depressive symptoms—The Children's Depression Inventory (CDI; Kovacs, 1992) includes 27 items that assess cognitive and behavioral depressive symptoms. The CDI assesses all but one criterion (psychomotor agitation) of the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision, American Psychiatric Association, 2000) criteria for a major depressive episode and is currently the most widely used self-report measure of depressive symptoms (Compas, 1997). A 3-item response format is used, scored 0 through 2, in which children endorse statements that best describe their level of depressive symptoms in the previous 2 weeks. A mean score was computed with higher scores indicating higher levels of depressive symptoms. Good psychometric properties have been

reported for the CDI as a reliable and valid index of depressive symptoms (Saylor, Finch, Spirito, & Bennett, 1984); it can be used with youth between the ages of 7 and 18 (Kazdin, 1990). In the current sample, internal consistency was high ($\alpha > 0.87$).

Suicidal ideation—Suicidal ideation was assessed by using a composite measure that includes 15 items designed to assess thoughts about suicide in adolescents (e.g., "I thought about how I would kill myself"; "I thought that killing myself would solve my problems"; "I wished I had the nerve to kill myself"; "I wished I were dead"). At the request of the school board, an abbreviated measure of suicide ideation was administered, including a composite of items drawn from the Suicidal Ideation Questionnaire (SIQ; Reynolds, 1988), and the NIMH Diagnostic Interview Schedule for Children version 4 (NIMH-DISC-IV; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000). The resulting measure allowed for an examination of active suicide ideation and suicide plans. Each item is scored on a 5-point scale ranging from 1 (never) to 5 (almost every day). The measure was administered at all three time points; internal consistency (α) was .83 at Time 1, .84 at Time 2, and .87 at Time 3. Higher scores are indicative of higher frequencies of suicidal ideation. At baseline, suicidal ideation over the past 12 months was assessed; at each follow-up time point, ideation over the prior 3 months was assessed.

Nonsuicidal self-injury—NSSI was assessed by using an item that is comparable to items used in existing instruments (e.g., Youth Risk Behavioral Surveillance). Specifically, adolescents responded to one item regarding the presence or absence of engagement in NSSI over the past year: "In the past 12 months, have you ever harmed or hurt your body on purpose, such as cutting or burning your skin, or hitting yourself, without wanting to die?"

Data Analysis

Means and standard deviations were computed for all study variables, and potential gender differences in the variables were evaluated by using *t* tests and chi-square analyses. Bivariate correlations also were computed among all continuous study variables.

Concurrent and longitudinal associations among suicidal ideation, both forms of peer victimization, and peer status were examined by using a multiple-group latent curve analysis using full-information maximum likelihood as implemented in Amos version 16.0 (Arbuckle, 2006). Specifically, a growth curve model was constructed to examine trajectories of suicidal ideation across three time points. The use of latent curve analysis allowed for an estimation of both the intercept and the pattern of growth (i.e., slope) in suicidal ideation within the entire sample and as predictors of individual temporal growth trajectories (Bollen & Curran, 2006).

As an initial step in examining hypotheses, an unconditional model first was estimated to examine intercept and slope factors for suicidal ideation across three time points. A latent intercept factor was estimated by using the three measures of suicidal ideation (i.e., at Times 1–3). Paths were set to 1 between each of these measures and the latent intercept factor. A latent slope factor was estimated with paths for suicide ideation at Times 1, 2, and 3 set to 0, 1, and 2, respectively. A multiple-group analysis was conducted to yield separate standardized estimates for boys and girls. Gender interactions in the estimation of the

unconditional model were tested by using chi-square difference tests, and the best-fitting model was then used for hypothesis testing as described in the next section.

Main study hypotheses were examined by including the four peer relations constructs (i.e., overt victimization, relational victimization, preference- based popularity, and reputation-based popularity) into the model as predictors of suicidal ideation intercepts and slopes. Depressive symptoms at Time 1 also were included as a predictor. Covariances among all five of these predictors were estimated. Again, a multiple-group analysis was conducted to yield separate standardized estimates for boys and girls. Gender interactions were examined by comparing models with paths either fixed or free to vary between groups, and the significance of chi-square difference tests between nested models was used to examine statistically significant gender differences in the magnitude of estimated paths.

A multivariate analysis of covariance (MANCOVA) was conducted to test concurrent associations among gender, Time 1 NSSI, and their interaction on the four peer constructs (i.e., relational victimization, overt victimization, preference-based popularity, and reputation-based popularity); depressive symptoms were included as a covariate. Finally, the prospective prediction of NSSI was examined in two hierarchical logistic regression analyses. One analysis examined Time 1 peer victimization, peer status, and depressive symptoms as predictors of NSSI at Time 2. A second logistic regression examined Time 1 peer victimization, peer status, and depressive symptoms as predictors of NSSI at Time 3. In each analysis, the dependent variable, engagement in NSSI, was examined as a dichotomous outcome variable (present/absent). The first step of each regression controlled for engagement in NSSI at Time 1. Main effects of Time 1 peer constructs (i.e., relational victimization, overt victimization, preference-based popularity, and reputation-based popularity) and depressive symptoms were entered on a second step.

Results

Descriptive Statistics

Means and standard deviations for all study variables, as well as the results of *t* tests examining gender differences, are presented in Table 1. Overall, results indicated that, at baseline, 6.4% of participants reported engaging in NSSI at least once during the previous year. The *t* tests to examine gender differences revealed that girls reported higher levels of suicidal ideation than did boys at both Times 1 and 3. Chi-square analyses revealed that a higher percentage of girls reported engagement in NSSI than did boys at Time 3. No significant gender differences were revealed in the incidence of NSSI at Times 1 and 2, however. With respect to peer victimization, *t* tests indicated that boys were more likely than girls to be nominated by peers as victims of overt aggression. No significant gender differences were observed on peer reports of relational victimization. Finally, preference-based popularity was higher for girls than boys, and there were no gender differences for reputation-based popularity (see Table 1).

Pearson correlations were calculated to examine bivariate associations among all continuous study variables (see Table 2). For boys and girls, a consistent pattern of associations emerged among the predictor variables. Specifically, significant positive associations were observed

between the two forms of victimization and also between the two peer status constructs. Significant negative associations were revealed between each form of victimization and preference-based and reputation-based popularity. For boys and girls, depressive symptoms were positively associated with each form of victimization and were negatively associated with the two peer status constructs. A slightly different pattern of results was observed between Time 1 suicidal ideation and the peer variables. For girls only, a significant association was revealed whereby high levels of suicidal ideation at Time 1 were positively associated with both relational and overt victimization. Time 1 suicidal ideation also was significantly negatively correlated with preference-based popularity (i.e., peer rejection) for girls but not for boys. Similarly, Time 2 suicidal ideation was negatively associated with reputation-based popularity for girls. Finally, suicidal ideation scores at each time point (i.e., Times 1 and 2, Times 2 and 3, and Times 1 and 3) were positively correlated for both boys and girls. Positive associations were observed also between depressive symptoms and suicidal ideation at all three time points.

Peer Victimization, Peer Status, and Suicidal Ideation

An initial unconditional growth curve model examined intercepts and slopes of suicidal ideation across the three time points, with all parameters allowed to vary freely between boys and girls. The model was an unsatisfactory fit: $\chi^2(2) = 10.39$, $p < .05$; $\chi^2/df = 5.20$, comparative fit index (CFI) = .96, and root mean square error of approximation (RMSEA) = .09. Given past research suggesting that rates of suicidal ideation may vary by gender (e.g., Evans et al., 2005), gender moderation was examined for estimated slope parameters and error variance for observed measurements of suicidal ideation. Parameter estimates were systematically fixed across gender or allowed to vary freely, and chi-square difference tests were conducted to determine significant improvement in model fit. The results of these tests suggested that three parameter estimates (i.e., the error variance for the observed indicators of suicidal ideation at Times 2 and 3, and the estimated mean for the latent slope factor) could be fixed across gender without significant detriment in model fit. These three parameters therefore were fixed in subsequent analyses for model parsimony. The resulting model was a satisfactory fit to the data ($\chi^2[5] = 11.95$, $p < .001$; $\chi^2/df = 2.39$, CFI = .96, RMSEA = .05) and was used as the base model for examining hypothesized associations between peer relations constructs and growth in suicidal ideation.

This unconditional model yielded estimated intercept parameters for suicidal ideation for boys ($M = 1.23$, $p < .0001$) and girls ($M = 1.31$, $p < .0001$), indicating relatively low levels of suicide ideation in this community sample. For boys and girls, the estimated slope parameter for suicide ideation was $-.03$, $p < .05$, indicating a negative slope significantly different from zero.

Specific hypotheses were tested by adding overt victimization, relational victimization, preference-based popularity, reputation-based popularity, and depressive symptoms as predictors of suicidal ideation intercepts and slopes. An initial model was examined allowing all paths predicting suicidal ideation and all covariances among predictors to vary freely by gender. This model was an adequate fit to the data: $\chi^2(12) = 26.27$, $p < .05$; $\chi^2/df = 2.19$, CFI = .99, RMSEA = .04. Gender moderation next was examined by allowing individual

paths and covariances to vary or remain fixed across gender, and by using chi-square difference tests to determine significant changes in model fit. As noted earlier, research examining associations between forms of victimization and psychological outcomes have suggested possible gender moderation. Accordingly, paths between each of the four peer relations constructs and suicidal ideation intercepts and slopes were examined for gender moderation. In addition, prior work has suggested that the associations among forms of victimization and peer status also may vary by gender (e.g., Cillessen & Mayeux, 2004), and therefore gender moderation also was examined for the covariances.

Results suggested that four paths (i.e., representing the associations between overt victimization and suicidal ideation intercepts; relational victimization and suicidal ideation intercepts; social preference and suicidal ideation intercepts; and social preference and suicidal ideation slopes) could be fixed across gender without significant detriment in model fit, suggesting similar magnitudes of association between these constructs among both boys and girls.

The conditional model including these fixed paths was a good fit to the data: $\chi^2(19) = 36.58$, $p < .01$; $\chi^2/df = 1.93$, CFI = .99, RMSEA = .04 (see Figure 1). In the conditional model, the estimated intercepts parameters for boys and girls were $M = 1.0$, $SE = .03$, $p < .0001$, and $M = .92$, $SE = .04$, $p < .0001$, respectively. For both boys and girls, the estimated slope parameter for suicidal ideation was .07, $SE = .02$, $p < .0001$, indicating a positive slope significantly different from zero once all of the predictors were in the model.

Covariances—After accounting for all of the estimated paths, the peer victimization and peer status predictor variables remained significantly intercorrelated for boys and girls. Specifically, for both boys and girls, high levels of relational victimization were associated with high levels of overt victimization; however, this association was significantly stronger among boys. High levels of preference-based popularity were associated with high levels of reputation-based popularity for both genders, but this association also was significantly stronger among boys. Adolescents who were less accepted by their peers (i.e., lower preference-based popularity scores) were more likely to be viewed by peers as targets of both relational and overt victimization. This association was significantly stronger among boys than among girls. Low levels of reputation-based popularity were associated with higher levels of overt victimization among boys and significantly less so among girls. Low levels of reputation-based popularity were associated with relational victimization among boys but not for girls. Depressive symptoms were more strongly associated with overt victimization among boys than among girls.

Prediction of suicidal ideation intercepts and slopes

In addition to the aforementioned associations, several significant associations between peer relations constructs and suicide ideation were revealed. After accounting for all estimated associations and correlations among all predictors, findings revealed that overt victimization was associated with suicidal ideation slopes among girls (see Table 3). Notably, this association was observed after controlling for the association between overt victimization and depressive symptoms and for the predictive value of depressive symptoms on later

suicide ideation. The direction of this effect indicates that higher levels of overt victimization were associated with steeper increasing trajectories of suicidal ideation.[1]

Results also suggested that relational victimization was associated with suicidal ideation slopes for girls but not boys. The direction of this effect was counter-intuitive, suggesting that high levels of relational victimization were associated with more steeply decreasing slopes of suicide ideation. Given this unexpected direction of this effect, it was considered that this result may be due to high levels of multicollinearity among peer predictors, causing suppression effects (see Table 2). To test this hypothesis, a reduced version of this model was examined that included only relational victimization and depressive symptoms as predictors of girls' suicide ideation intercepts and slopes. Results from these analyses confirmed that the unanticipated result likely was due to suppressor effects. In this reduced model, no significant association was revealed between relational victimization and girls' suicide ideation intercepts: $b = .04$, ns, and slopes, $b = -.02$, ns. In addition, when regression analyses were conducted to examine these associations, the results revealed no significant linear association between relational victimization and suicidal ideation at Time 2, controlling for Time 1 suicidal ideation and depressive symptoms: $b = -.04$, $SE = .03$, $\beta = -.09$, ns. Similarly, no significant linear association was observed between relational victimization and suicidal ideation at Time 3, controlling for Time 1 suicidal ideation and depressive symptoms: $b = -.02$, $SE = .03$, $\beta = -.04$, ns.

Finally, associations between the peer status constructs and suicidal ideation were examined. With respect to preference-based popularity, suicidal ideation slopes were significant for boys and girls (see Table 3). These findings suggest that, for boys and girls, higher preference-based popularity was associated with decreases (and/or less steep increases) in suicidal ideation over time. Thus, adolescents who were well liked by peers (i.e., high peer acceptance) were less likely to report increasing suicidal ideation than were grademates who were low in peer acceptance (see footnote 1).

In terms of reputation-based popularity and suicidal ideation, results indicated that high reputation-based popularity predicted greater decreases in suicidal ideation for girls over time. Given that this finding was unexpected, it again was considered that the results may have been due to high levels of multicollinearity among peer predictors, causing suppression effects. To test this hypothesis, a reduced version of this model was examined that included only reputation-based popularity and depressive symptoms as predictors of girls' suicide ideation intercepts and slopes.

Results from these analyses suggested that the unanticipated finding again appeared to be likely due to suppressor effects. In the reduced model, no significant association was revealed between reputation-based popularity and girls' suicidal ideation slopes: $b = .02$, SE

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[1]Given that several unanticipated findings appeared to be the result of suppressor effects, perhaps due to the high levels of multicollinearity among peer predictors, all models were reexamined in reduced models, including only the significant predictor and depressive symptoms as predictors of suicidal ideation intercepts and slopes. This procedure was conducted not only for counterintuitive findings, as reported in the text, but also for findings that were consistent with hypotheses. In addition, regression analyses were conducted to examine linear associations between Time 1 predictors and suicidal ideation at Times 2 and 3. With the exceptions of the two counterintuitive effects discussed within the text, all other reported effects remained significant, and in the expected direction, in these reduced and regression analyses.

= .02, *ns*. Regression analyses were conducted to assess this finding further. Results revealed a significant interaction between gender and reputation-based popularity as a predictor of suicidal ideation at Time 2, $b = -.08$, $SE = .04$, $\beta = -.12$, $p < .05$. Post hoc probing (Holmbeck, 2002) revealed no significant linear slope for girls, $b = -.02$, $SE = .03$, $\beta = -.05$, *ns*; or, for boys, $b = .04$, $SE = .02$, $\beta = .11$, *ns*. In addition, no main or interaction effects for relational victimization on suicidal ideation at Time 3 were revealed in regression analyses.

Peer Victimization, Peer Status, and NSSI

A two-way MANCOVA was conducted to examine concurrent associations among gender, Time 1 NSSI, and their interaction on the four standardized peer constructs (i.e., relational victimization, overt victimization, preference-based popularity, and reputation-based popularity); depressive symptoms were included as a covariate. The MANCOVA revealed multivariate effects of Time 1 NSSI, $F(4, 459) = 3.30$, $p < .05$; gender, $F(4, 459) = 7.11$, $p < .001$; and a marginal interaction effect, $F(4, 459) = 2.20$, $p = .07$, on peer relations constructs. Subsequent univariate analyses revealed two significant effects. First, a significant gender main effect was revealed replicating results from *t* tests presented earlier. Second, when controlling for depressive symptoms, individuals who endorsed engaging in NSSI at Time 1 had higher mean levels of preference-based popularity (adjusted $M = .62$, $SE = .17$) and reputation- based popularity (adjusted $M = .53$, $SE = .18$) than individuals who did not endorse a history of Time 1 NSSI (preference-based popularity: adjusted $M = .12$, $SE = .04$; and reputation-based popularity: adjusted $M = .05$, $SE = .05$), $Fs(1, 467) = 8.12$ and 6.26, respectively; $ps < .05$. Third, univariate results suggested a significant interaction effect between engagement in NSSI $\times$ gender for concurrent overt victimization: $F(1, 467) = 3.01$, $p < .05$. Boys who engaged in NSSI were more frequently nominated as victims of overt aggression (adjusted $M = .24$, $SE = .22$) than were boys who did not engage in NSSI (adjusted $M = .05$, $SE = .06$). The reverse pattern of findings was revealed for girls: engaged in NSSI: adjusted $M = -.69$, $SE = .25$; and did not engage in NSSI, adjusted $M = -.22$, $SE = .06$. These findings should be interpreted with caution, given the relatively small cell sizes used in the analyses.

To examine peer victimization, peer status, and depressive symptoms as longitudinal predictors of NSSI engagement, two stepwise logistic regressions were conducted. For both logistic regressions, there were no main effects of the peer victimization or peer status constructs on the prediction of NSSI.

Discussion

This longitudinal investigation offers an important extension of prior cross-sectional work by examining unique associations among overt and relational forms of peer victimization, peer status, and self-injurious thoughts and behaviors (i.e., suicidal ideation, NSSI). The inclusion of growth curve analyses provides new insight regarding the prospective prediction of suicidal ideation over time. Results suggested that low levels of preference-based popularity were associated with increases in suicidal ideation for both boys and girls. In addition, girls' experience of overt victimization was associated significantly with increases in trajectories of suicidal ideation over a 2-year follow-up period. Overt victimization was also

concurrently associated with NSSI, with different patterns observed for boys and girls. Specifically, boys who were nominated as victims of overt aggression were more likely to report engagement in NSSI than were nonvictims, whereas overtly victimized girls were less likely to engage in NSSI as compared to nonvictimized girls.

A key contribution of the present study relates to the fact that the effects of the peer relations variables on suicidal ideation and NSSI were observed even after accounting for levels of depressive symptoms. Indeed, prior studies have not consistently controlled for depressive symptoms, making it difficult to ascertain the nature of unique associations among peer victimization, peer status, and suicidality. In their recent review, Kim and Leventhal (2008) noted that only ten of the studies included a measure of depressive symptoms or emotional distress/problems as a covariate in the reported analyses. It is interesting to note that the only study that controlled for gender, depression, and prior suicidal behaviors found a negative association between bullying and suicidal ideation (see Park, Schepp, Jang, & Koo, 2006). It also is worth noting that the concurrent findings reported by Park and colleagues were based on a dichotomous, self-reported measure of school bullying and a single-item measure of suicidal ideation. Similarly, Klomek et al. (2008) reported no evidence of a longitudinal association between boys' experiences of childhood bullying and later suicidal ideation, controlling for depressive symptoms; however, the measure of victimization was based on three response items (i.e., never, sometimes, frequently) and did not differentiate among types of bullying (i.e., overt, relational), and the measure of suicidal ideation was based on a single item. Thus, although several studies have reported mixed findings of associations among peer victimization, depression, and suicidal ideation (i.e., Klomek et al., 2007, 2008), the present study is the first to observe a unique prospective effect of overt victimization and preference-based popularity on suicidal ideation, controlling for the effects of depressive symptoms.

Consistent with study hypotheses, overt victimization was associated with increasing trajectories of suicidal ideation; however, this effect was true only for girls. Indeed, results of the present study did not support the predicted link that boys' suicidal ideation would be more closely linked to experiences of overt victimization. Given that relational victimization is generally thought to be more common than overt victimization among girls (e.g., Crick & Bigbee, 1998), it may be that girls who were rated by peers as high on overt victimization were viewed as the most seriously victimized peer group members. In other words, perhaps because it is considered more normative (albeit still potentially hurtful) to be the subject of gossip and rumors, adolescent girls who are threatened physically by peers might represent a more distressing experience within the peer culture. This is inconsistent with previous research suggesting that girls have better recall and report more distress associated with relational victimization as compared to overt victimization experiences (e.g., Paquette & Underwood, 1999). It is important to note that the results of the present study are based on peer reports on a single item tapping each form of victimization. A more comprehensive evaluation of both forms of peer abuse might clarify seemingly inconsistent findings. Moreover, it has been contended that the high correlation between self-reports of overt and relational victimization may indicate that individuals do not differentiate between the forms when asked to rate their experiences of peer victimization (Cullerton-Sen & Crick, 2005). This might suggest that being a victim of multiple forms of harassment may result in an

overall perception of oneself as a victim, which may be relevant to understanding individual adjustment outcomes, including suicidal ideation. Indeed, future research aimed at integrating multiple perspectives (e.g., self, peer, friend) on peer harassment may offer insight into how specific types of victimization experiences may be implicated in the development of suicidal thoughts and behaviors.

Contrary to study hypotheses, no effects were observed for concurrent or longitudinal associations between relational victimization and suicidal ideation for either boys or girls. Although no prior work has examined change in suicidal ideation over time as a function of relational victimization, some preliminary evidence supports concurrent links between measures tapping self-reported relational victimization and suicidal ideation (e.g., Baldry & Winkel, 2003). The results of the present study should be considered in light of the limitations of the measurement of relational victimization and the high correlation between the measures of overt and relational victimization experiences, especially among boys. The hypothesized associations were predicated on evidence that girls report higher levels of negative affect than boys in response to experiences of relational victimization (Crick, 1995; Crick, Grotpeter, & Bigbee, 2002; Paquette & Underwood, 1999), and that relational victimization is perceived as more hurtful for girls than boys (Galen & Underwood, 1997). There also is support for the contention that girls are more distressed by negative interpersonal events and tend to struggle with interpersonal difficulties (e.g., Greene & Larson, 1991; Leadbeater, Blatt, & Quinlan, 1995; Rose & Rudolph, 2006). Taken together, it follows that the importance placed on interpersonal connectedness may serve to amplify the detrimental effects of the interpersonal stress associated with relational victimization for girls. The lack of support for this theoretical proposition may reflect the fact that relational victimization is not associated with highly problematic psychological outcomes because it is relatively common among adolescent girls. Thus, it may be that, for girls, being the victim of threats of physical harm is associated with more severe distress because it is relatively atypical, whereas being the subject of gossip or rumors may represent a more normative developmental experience.

Given that difficulties in interpersonal relationships are often identified as precipitants to adolescents' suicidal behavior (e.g., Hawton et al., 1996; Spirito, Overholser, & Stark, 1989), it is perhaps not surprising that low preference-based popularity (i.e., peer rejection) predicted increases in suicidal ideation over time. This finding is significant for two reasons: First, there remains a relative paucity of empirical literature examining how peer experiences may be implicated in the longitudinal development of suicide-related thoughts and behaviors in adolescence. Research documenting associations between adolescent suicide and interpersonal experiences within the family domain (for a review, see Wagner, 1997) laid the groundwork for studies of peer functioning and suicidality. To date, although studies have examined several facets of peer experiences (e.g., the role of perceived social support from friends, and friendship quality) as predictors of adolescent suicidal behavior, the role of peer rejection has received considerably less attention. Prior cross-sectional work conducted by Prinstein et al. (2000) suggested a direct effect of perceived peer rejection on the severity of suicidal ideation in a sample of adolescent psychiatric inpatients. A significant indirect pathway further suggested that perceived peer rejection and peer acceptance were linked to suicidal ideation via depressive symptoms. The present study extends these findings by

incorporating peer-report measures of peer rejection and peer acceptance in the prospective prediction of suicidal ideation, thereby providing a more stringent test of the hypothesized associations. Second, this finding provides preliminary support for the heuristic model of pathways linking peer rejection to adolescent suicide-related thoughts and behavior (Prinstein, 2003). Specifically, the proposed theoretical model suggests several co-occurring mechanisms whereby peer rejection may lead to heightened peer victimization, which may in turn represent an interpersonal stressor that directly precipitates suicidal behavior. Future research aimed at testing such theorized mechanisms will provide an extremely important contribution toward understanding how responses to interpersonal stressors, including peer rejection and victimization experiences, may be implicated in the development of adolescent suicidality.

The inclusion of measures of peer status (e.g., peer rejection/low preference-based popularity) in the study of peer victimization offers an important context for examining the implications of these related, yet conceptually and empirically distinct, constructs. Indeed, it has been suggested that negative peer status may represent an antecedent to peer victimization such that being victimized by peers may be central to the process of peer rejection (for a review, see Boivin, Hymel, & Hodges, 2001). To date, the study of associations between self-injury and group-level peer status has benefited considerably from drawing a distinction between the constructs of preference-based and reputation-based popularity. Indeed, peer nominations of popularity are only moderately related to nominations of likeability (e.g., LaFontana & Cillessen, 1999; Parkhurst & Hopmeyer, 1998). Results from the present study highlight the importance of considering associations between peer status and internalizing distress. Indeed, for both boys and girls, being disliked by peers (e.g., low peer acceptance/preference-based popularity) was related to increases in suicidal ideation trajectories over a 2-year period. This finding is consistent with prior research indicating that peer rejection may be associated with suicidal ideation. For example, Prinstein et al. (2000) reported an unmediated positive association between self-reported peer rejection and suicidal ideation in a sample of adolescent psychiatric inpatients. Although few concurrent studies have examined links between peer acceptance and suicidality, findings from the present longitudinal study suggest that this may be an important research imperative in efforts toward understanding the potential protective functions associated with being liked by peers.

With respect to NSSI, positive concurrent associations were revealed between NSSI and both peer status constructs, controlling for depressive symptoms. Though unexpected, these findings may reflect a growing belief among adolescents that NSSI represents a marker of social status or membership in a valued subculture. This proposition is further bolstered by the fact that the links between NSSI and peer status were significant even when controlling for depressive symptoms, suggesting that a general orientation toward risk-taking behaviors may be a contributing factor. There is indeed some evidence that adolescents who engage in NSSI are also more likely to engage in other health-risk behaviors (e.g., cigarette smoking, substance use, disordered eating) (Hilt et al., 2008). Thus, it may be that adolescents who self-injure are perceived by peers as more popular and more well liked because they are engaging in other behaviors that are socially valued and respected within the adolescent peer context. Finally, it should be noted that adolescent boys who were overtly victimized were

more likely to engage in NSSI than nonvictims, whereas the opposite effect was observed for girls. It is important that this observed gender difference be interpreted with caution, given the relatively small cell sizes in the analyses. Otherwise, it may be that the results reflect that the boys in this study had significantly higher mean levels of overt victimization as compared to the girls and that there was more variability in boys' overt victimization scores within the sample. It also is notable that the overall rates of NSSI for boys and girls were relatively low such that it will be important to replicate this finding in other samples, including in a clinical sample for which there are likely to be higher rates of NSSI. Taken together, findings suggest that future research is needed to examine the role of social status, perceived social norms, and peer influence processes in the emergence and maintenance of NSSI behaviors.

Several limitations must be considered when interpreting the findings of this study. First, the study involved a community sample of adolescents, and therefore the overall prevalence rates of suicidal ideation and NSSI were low in comparison to what would be expected in a clinical sample. In addition, other suicide-related behaviors (e.g., suicide attempts, suicide plans) were not assessed in the present study. Thus, although the study allowed for an examination of risk in a community-based sample by using a thorough measure of suicidal ideation, and can be valuable to inform prevention efforts, future research is needed to examine other suicide-related behaviors and other symptoms that may be relevant for more severe suicidal ideation. Moreover, the study employed a relatively homogeneous sample that was largely comprised of European American adolescents. Studies are clearly needed to test the reported effects in more ethnically diverse samples. A second limitation pertains to the fact that the NSSI measure involved only one item. A more thorough assessment of the frequency, severity, and function of NSSI would be useful in future research as efforts continue to understand this understudied phenomenon. Similarly, although this study was the first to examine both overt victimization and relational victimization (as well as peer status) as predictors of self-injury, relying on peer-reported measures of peer relations constructs, time constraints did not allow for a more comprehensive assessment of victimization by using multiple nomination items. Substantial research has highlighted the complexity of overt and relationally aggressive behavior, suggesting that multiple nomination items may capture these constructs more fully.

With respect to other future research directions, there is evidence that children are differentially affected by peer abuse such that many victimized children do not develop significant adjustment problems (e.g., Hoover, Oliver, & Hazler, 1992). Efforts to understand the heterogeneity of peer victimization consequences have focused on individual differences in children's coping strategies and emotional responses as moderators of the link between victimization and psychological functioning (e.g., Kochenderfer-Ladd, 2004; Kochenderfer-Ladd & Skinner, 2002). Accordingly, models that link peer victimization and suicide-related thoughts and behaviors would be well served to incorporate possible moderational influences into conceptualization of these linkages. For example, consistent with a diathesis-stress model, peer victimization may itself represent a moderator of the association between psychopathology and suicidality. Conversely, the interpersonal stress associated with being victimized by peers might potentiate the link between depressogenic attributions and suicidal ideation or NSSI.

In sum, findings of the present longitudinal study offer a contribution toward advancing knowledge of the role of peers in the developmental psychopathology of suicide-related behaviors and NSSI. Of note, whereas previous findings have supported a relatively consistent pattern of positive concurrent associations between types of peer victimization experiences and elevated suicidal risks, this is the first evidence of a prospective association for girls. Moreover, results of the present study are based on peer reports of victimization and status as predictors of self-reported suicide-related thoughts and behaviors, thus addressing the limitations associated with shared method variance. The findings contribute to a growing scientific literature aimed at identifying outcomes associated with peer victimization experiences and peer status in an effort to elucidate the differing pathways of adaptation and maladaptation.

Acknowledgments

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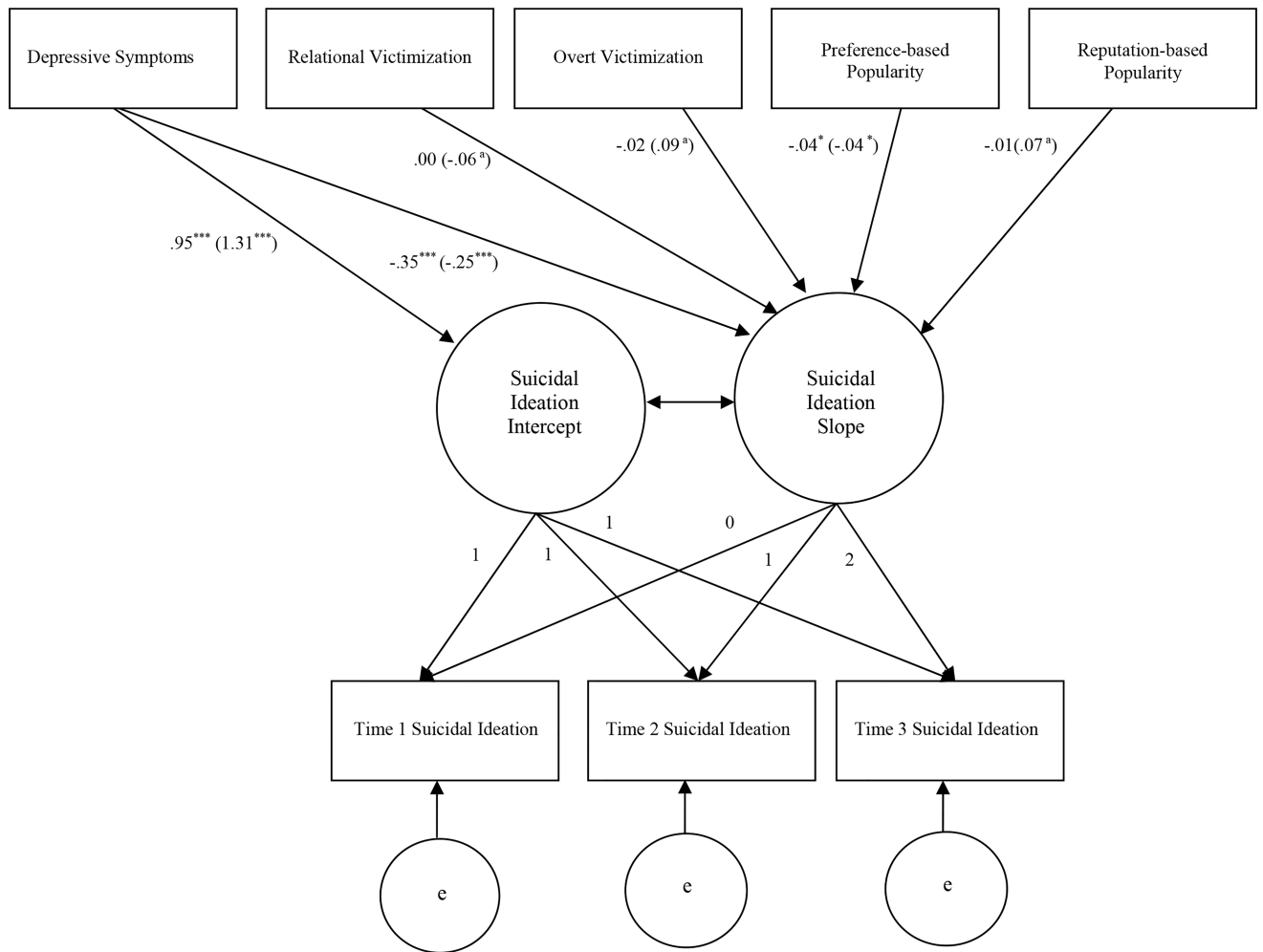
Figure 1.
Statistically significant unstandardized path weights for boys (and girls) from a latent growth curve model examining longitudinal associations among peer victimization, peer status, depressive symptoms, and suicide ideation.

Note. Paths listed with a single coefficient were fixed by gender.

p < .05. **p* < .01. ***p* < .001.

[a]As stated within the text, this association likely is due to suppressor effects and does not remain significant in reduced models.

Table 1

Means (and Standard Deviations) for All Study Variables

	Boys	Girls	$t(df = 491)$
Time 1 variables			
Suicidal ideation[a]	1.24 (.38)	1.35 (.61)	−2.47[*]
NSSI	17 (7.1%)	14 (5.7%)	$\chi^2(1) = .43$
Depressive symptoms	.25 (.21)	.29 (.27)	−1.81
Relational victimization[b]	−.17 (1.01)	−.02 (.88)	−1.66
Overt victimization[b]	.04 (1.16)	−.22 (.57)	3.15[**]
Preference-based popularity[b]	.07 (.98)	.25 (.81)	−2.19[*]
Reputation-based popularity[b]	.07 (1.04)	.10 (.90)	−.36
Time 2 variables			
Suicidal ideation[a]	1.18 (.33)	1.22 (.46)	−1.41
NSSI	4 (1.8%)	11 (7.6%)	$\chi^2(1) = 3.13$
Time 3 variables			
Suicidal ideation[a]	1.19 (.41)	1.27 (.47)	−1.99[*]
NSSI	3 (1.3%)	12 (4.9%)	$\chi^2(1) = 5.23$[*]

Note. NSSI = nonsuicidal self-injury.

[a]Scale reflects 1 (never) to 6 (almost every day).

[b]These variables are standardized scores where the mean = 0 and the standard deviation = 1.

[*]$p < .05$.

[**]$p < .01$.

Table 2

Bivariate Associations Between All Primary Study Variables

	Peer constructs					Suicidal ideation		
	Relational victimization	Overt victimization	Pref-based popularity	Rep-based popularity	Depressive symptoms	Time 1	Time 2	Time 3
Peer constructs								
Relational victimization	—	.88 **	−.62 **	−.45 **	.30 **	.06	−.03	.02
Overt victimization	.56 **	—	−.70 **	−.62 **	.35 **	.06	−.04	.00
Preference-based popularity	−.45 **	−.62 **	—	.73 **	−.28 **	−.05	.04	−.09
Reputation-based popularity	−.11	−.49 **	.64 **	—	−.26 **	−.02	.06	−.04
Depressive symptoms	.16 *	.25 **	−.25 **	−.26 **		.49 **	.30 **	.13 *
Suicidal ideation								
Time 1 suicidal ideation	.17 **	.19 **	−.14 *	−.13	.60 **	—	.27 *	.21 **
Time 2 suicidal ideation	.12	.13	−.12	−.16 *	.54 **	.40 **	—	.29 **
Time 3 suicidal ideation	.06	.18 **	−.11	−.01	.47 **	.47 **	.55 **	—

Note. All values above the diagonal represent correlations for boys. All values below the diagonal represent correlations for girls. Pref-based = preference based; Rep-based = reputation based.

*
$p < .05$.

**
$p < .01$.

Table 3

Results From a Multiple-Group Growth Curve Analysis: Unstandardized Path Weights (and Standard Errors) and Covariances (and Standard Errors) Among Peer Constructs, Depressive Symptoms, and Suicidal Ideation Intercepts and Slopes

	Peer constructs					Suicidal ideation	
	Relational victimization	Overt victimization	Pref-based popularity	Rep-based popularity	Depressive symptoms	Intercept	Slope
Peer constructs							
Relational victimization	—	1.03 *** (.10)	−.61 *** (.08)	−.47 *** (.08)	.06 *** (.01)	.04 (.03)	.00 (.03)
Overt victimization	.27 *** (.04)	—	−.79 *** (.09)	−.75 *** (.09)	.09 *** (.02)	−.04 (.03)	−.02 (.03)
Preference-based popularity	−.31 *** (.05)	−.28 *** (.03)	—	.73 *** (.08)	−.06 *** (.01)	.03 (.03)	−.04 * (.02)
Reputation-based popularity	−.08 (.05)	−.24 *** (.04)	.46 *** (.06)	—	−.06 *** (.02)	.02 (.03)	−.01 (.02)
Depressive symptoms	.04 * (.02)	.04 *** (.01)	−.06 *** (.01)	−.06 *** (.02)	—	.95 *** (.09)	−.35 *** (.07)
Suicidal ideation							
Intercept	.04 (.03)	−.04 (.03)	.03 (.03)	−.04 (.03)	1.31 *** (.09)	—	.01 (.01)
Slope	−.06 *** (.02)	.09 ** (.03)	−.04 * (.02)	.07 ** (.02)	−.25 *** (.05)	.03 * (.01)	—

All values above the diagonal represent correlations for boys. All values below the diagonal represent correlations for girls. Pref-based = preference based; Rep-based = reputation based.

*
p < .05.

**
p < .01.

***
p < .001.