The primary purpose of this multimethod and multimeasure study was to identify how the peer relationships of Australian adolescents (ages 9–15 years; N = 335) at school, including relational aggression and victimization, correlated with their symptoms of depression and anxiety. Moreover, relational aggression and victimization were measured via both self- and peer report, and discrepancies between reports were considered as correlates of symptoms and peer relationship status. Adolescents who reported more symptoms of depression and anxiety also self-reported more relational victimization and reported their peers as less trustworthy. Adolescents who overreported their own relational victimization and aggression compared with peer report had more symptoms compared with those who agreed with their peers or underreported their aggression and victimization. Adolescents who underreported their own aggression were not only more socially prominent but were also more disliked by their peers. When considered independent of self-reports, no measure of peer-reported peer status, aggression, or victimization was associated with depressive symptoms; but adolescents reported as more accepted by their peers had fewer anxiety symptoms. Longitudinal research should be conducted to examine adolescents’ increasing socioemotional problems as correlates of discrepancies between self- and peer reports of relational aggression and victimization. Aggr. Behav. 38:16–30, 2012. © 2011 Wiley Periodicals, Inc.

Keywords: relational aggression; victimization; peer relations; depression; anxiety

Sociometer Theory, Peer Relationships, and Mental Health

Baumeister and Leary [1995] have argued that all humans have an innate need to belong, and this is fundamental to a variety of human emotions, cognitions, and behaviors. The need for belonging, and whether this is satisfied, is strongly linked to well-being. Feelings of belongingness can evoke elation and happiness, and a lack of belongingness can evoke self-doubt and distress. According to a related theory, “Sociometer Theory” [Leary et al., 1995], negative affective states are expected to arise when rejection or low social status is perceived, and problems emerge in reaction to experiences of real, imagined, or anticipated social rejection.

More specific theories have been formulated to explain the importance of belongingness (e.g., friendships and acceptance) in childhood and adolescence for psychological and emotional adjustment. Bagwell et al. [2001] proposed a developmental psychopathology perspective on the importance of peer relationships for functioning. In this theory, peer relationships are more than simply companionship. Peer relationships are sources of support and intimacy, and they can provide developmental stability throughout school and into adulthood. Problems, such as social anxiety, loneliness, depression, low self-esteem, and negative school attitudes, are expected to be the most common forms of maladjustment associated with problematic peer relationships, and these links have been supported in many cross-sectional [e.g., Boivin et al., 1994; Crick and Ladd, 1993; Lopez and DuBois, 2005; Oldehinkel et al., 2007; Reijntjes et al., 2006] and longitudinal studies [e.g., Borelli and Prinstein, 2006; Coie et al., 1992; MacPhee and Andrews, 2006; Murray-Close et al., 2007; Woodward and Fergusson, 1999]. However, most of these studies have only focused on single aspects of peer relationships, such as focusing on correlations...
of being disliked by peers at school or being victimized by peers with negative affect and low self-worth.

The aims of this study were founded in sociometer theory and a developmental psychopathology perspective, which both identify social relationships, including belonging, acceptance, and a lack of rejection, as important for an individual's mental health and well-being. Hence, our first aim was to identify how adolescents' socioemotional functioning is associated with peer relationship problems and successes. More specifically, we examined and expected that peers' reports of peer status, relational aggression, and relational victimization would be associated with depression and social anxiety symptoms.

**Mental Health and Discrepancies Between Classmate Reports and Self-Perceptions**

There have been some investigations of mental health symptoms as a correlate of both classmate reports of peer likeability and children's own perceptions of their relationships or competence with peers [Graham et al., 2003]. Yet, some researchers have extended upon this by emphasizing the importance of examining discrepancies between "real" difficulties in encounters with others (usually those reported by classmates, other schoolmates, or teachers) and children's perceptions of their own peer status [Cole et al., 1998; Graham et al., 2003; Pomerantz and Rudolph, 2003; Zimmer-Gembeck et al., 2007]. Hence, in this study, we not only investigated peer difficulties derived from both classmate and self-report as correlates of depressive and social anxiety symptoms, but we also expected that symptoms would be associated with children's agreement or discrepancy with their peers when reporting their own peer problems. More specifically, we focused on discrepancies in reporting relational aggression and victimization, and expected children would be relatively more depressed and anxious when they overestimated their own aggression and victimization compared with their schoolmates' reports about them. Children who were more accurate or underestimated their relational aggression or victimization were expected to be relatively less depressed and anxious.

When taken together, this study and these study results extended previous research in four significant ways. First, we included multiple measures of peer relationships and social behavior in the peer group by assessing peer acceptance, peer rejection, popularity, unpopularity, social prominence, relational aggression, and relational victimization as reported by peers at school. All these are important aspects of child and adolescent peer relationships that have been associated with socioemotional functioning [Cillessen and Rose, 2005]. A second extension was our attention to the role of adolescents' perceptions of their own relational aggression and victimization, and their negative beliefs about their peers. The perception of victimization and perceived interpersonal problems have been strongly linked to mental health problems [Camodeca et al., 2002; Salmivalli and Isaacs, 2005; Zimmer-Gembeck et al., 2009], and we were interested in whether reports from others and self-perceptions of aggression and victimization would each uniquely covary with socioemotional problems.

Third, we tested peer interpersonal problems as correlates of both depressive and social anxiety symptoms. Depression and anxiety can be comorbid [Burns and Eidelson, 1998; La Greca and Harrison, 2005] making it very likely that each of these two mental health problems covary with poor peer relationships and low social standing in the peer group. However, when compared with the study of peer rejection and depressive symptoms, less is known about the peer relationship correlates of children's symptoms of anxiety [Buckley et al., 2004; Culotta and Goldstein, 2008; Rapee, 2001; Spence and Donovan, 1998; Verduin and Kendall, 2008].

Fourth and finally, we identified young people who had perceptions that were more discrepant with the reports of their peers and expected that this would help distinguish those with more mental health problems or with specific biased perceptions of their peer relationships that accompany depression and anxiety. Awareness of one's problems or perception of a problem when none exists seems to be a critical component in mental health problems. With regards to theory, sociometer theory suggests that it is perceptions that are important, but the theory does not explicitly discuss consistency or discrepancy between actual and perceived social interactions and status with peers. Individuals are expected to monitor their environments for signs of interpersonal problems, but it is unclear whether individual differences in the accuracy of this monitoring system are important [Leary and Downs, 1995]. Yet, this theory also suggests that discrepancies between “actual” interpersonal interactions and perceived events might identify individuals who are particularly at risk for mental health problems. For example, the overperception or positively biased perception of disapproval, rejection, or exclusion is emphasized as an important correlate of poor mental health.
In the empirical literature, there have been few studies that have had the opportunity to compare children’s self-reports of peer status or behaviors with peers to the reports of others. Yet, some researchers have concluded that it is self-views that are most predictive of depression [Graham et al., 2003; Zimmer-Gembeck et al., 2007], but also found that discrepancies can provide additional information useful for interventions [Zimmer-Gembeck et al., 2007]. Moreover, research has shown that erroneous perceptions (i.e., perceptions that are discrepant or less consistent from those of others) are associated with depression [Graham and Juvonen, 1998; Graham et al., 2003].

Theoretical Foundations

The aims and hypotheses of this study were developed after consideration and consolidation of (a) models of individual differences in cognitions when people are faced with stress or failure [Alloy, 2001; Rudolph and Asher, 2000], (b) the sociometer model [Leary and Downs, 1995; Leary et al., 1999], and (c) the human motive to belong and avoid exclusion [the “need to belong”; Baumeister and Leary, 1995]. Models of cognitions when people are faced with failure or stress focused our attention on the influence of individual differences in perceptions or attitudes on depression [Rudolph et al., 1997; see Rudolph and Asher, 2000 for a review]. Sociometer theory and the motive to belong and be accepted by others pointed toward the importance of environmental cues and the associated perception of a lack of social belongingness as correlates of negative affective states, as well as discrepancies between social cues and perception. In sociometer theory, self-esteem is identified as the internal sociometer that signals the possibility/perception of exclusion and lack of acceptance, and self-esteem and depressive affect have been found to strongly covary [Harter, 1999; Leary, 1990]. This link between self-esteem and perceptions of social failure found in sociometer theory, and the empirical evidence that depressive affect and social anxiety will covary with self-esteem, suggests that mental health problems also will be associated with perceived social failures or problems. Being relatively more disliked, actively rejected, and victimized by peers have each been associated with mental health problems among children and adolescents [Boivin et al., 1994; Harter and Whitesell, 1996; Zimmer-Gembeck et al., 2009]. Hence, relatively lower acceptance or outright rejection by peers was expected to be associated with elevated depressive symptoms and social anxiety; but, sociometer theory suggested that mental health symptoms also would be better explained by considering children’s own perceptions of their peer relationships.

Multiple Aspects of Peer Status and Relationships

Peer relationships and social standing with peers are multidimensional constructs and attending to this multidimensionality was expected to provide a better account of how peer relationship problems are associated with children’s mental health problems. Although it has been rare to include measures of rejection, acceptance, social prominence, popularity, unpopularity, and experiences of aggression and victimization in a single study, some investigators have reported that multiple of these dimensions add incrementally to the identification of children who have mental health problems. For example, being accepted in the peer group vs. being popular and dominant has been found to have differential associations with internalizing symptoms and school adjustment [Cillessen and Rose, 2005; Schwartz et al., 2006].

In previous research, peer social standing has been indicated by measures tapping popularity (i.e., leadership or high status), acceptance (e.g., being liked), and centrality within the peer group [e.g., Farmer and Rodkin, 1996; Lease et al., 2002a,b]. In this research study, multiple indicators of social standing were gathered. This included peer group acceptance and rejection [which are synonymous with general like and dislike by classmates; Lease et al., 2002a,b], popularity, unpopularity, and social prominence (e.g., leadership and respect from peers). Most often, studies have either emphasized children’s or adolescents’ affective perceptions of their peers (e.g., how much children like or dislike other children), or instead have focused on peer social standing, such as being prominent with peers, dominant and popular. Although dislike and like by peers are important correlates of children’s mental health problems [Zimmer-Gembeck et al., 2007], social dominance is another potential indicator of peer social status that may be important to mental health. Children and adolescents organize themselves hierarchically within their peer groups and have corresponding status in the form of more or less dominance [Hawley, 1999]. This also has been referred to as popularity [Parkhurst and Hopmeyer, 1998; Rose et al., 2004] and can indicate the level of social centrality, prominence, and prestige a child or adolescent possesses. Perceived popular children are
more often the center of attention and have a greater degree of power and influence over their peers. Low-to-moderate correlations have been found between acceptance and popularity, and each has been reported to have independent associations with mental health [Rose and Swenson, 2005]. It is believed that acceptance is shaped more by general peer approval and being well-liked, whereas popularity is based upon wide admiration from peers, being reputable, and higher in social standing. Research shows that although there is a moderate correlation between being liked and being popular, children who are identified as popular and socially prominent are not always necessarily well-liked [Lease et al., 2002a,b].

Being rejected or having low social standing does not always imply direct experiences of peer victimization and aggressive behavior between classmates [Pepler et al., 2005]. Hence, it was important to also examine victimization and aggression to account for their associations with adolescents’ socioemotional problems. We focused on relational aggression because it is a common concern of adolescents and begins to escalate in preadolescence [Crick et al., 2006; Currie et al., 2007]. Furthermore, although physical victimization by peers can also be a correlate of mental health, relational aggression is very often enacted with the specific intention of causing social and emotional harm [Crick and Grotpeter, 1995]. In addition, behaving aggressively toward one peers often indicates mental health problems, as it is known that externalizing (e.g., aggression) and internalizing (e.g., depression and anxiety) symptoms are often comorbid [Masten et al., 2005], and relational aggression and victimization have been associated with depressive symptoms in past research [Cullerton-Sen and Crick, 2005]. A range of negative behaviors have been included within the definition of relational or related forms of aggression, including spreading rumors, gossip, lies, telling secrets, exclusion from an activity or group, expression of dislike, and “the silent treatment”. Manipulating the relationship is the aggressive tactic of choice and is achieved via verbal, direct, or indirect aggressive behaviors [Linder et al., 2002; Rys and Bear, 1997; Tapper and Boulton, 2004].

Greater psychological maladjustment has been found among adolescents who are relationally aggressive compared with their nonaggressive peers. Relationally aggressive girls have been reported to be more shy, withdrawn, and depressed than nonaggressive girls [Henington et al., 1998], and links with mental health problems are even stronger when the victims of relational aggression are considered. Crick and Grotpeter [1995] found that victims of relational aggression were more depressed, had heightened symptoms of anxiety (social avoidance behaviors), and were more lonely compared with nonvictims (see also Cullerton-Sen and Crick, 2005; McNeilly-Choque et al., 1996). Moreover, some researchers have reported an overlap between peer relationship problems and relational aggression, with aggressors more likely rejected by peers [e.g., Hughes et al., 2001; Olthof and Goossens, 2007; Pepler et al., 2005; Tomada and Schneider, 1997], but it is also the case that relational aggression and victimization can have complex relationships with peer status. Children and adolescents may use relational aggression as a strategy to influence their social worlds, and some relational aggressors do benefit and are described as popular with their peers [Farmer and Xie, 2007]. Adolescents who are more relationally aggressive have been found to be more prominent with their peers [Card et al., 2005; Cillessen and Rose, 2005; Hawley et al. [Hawley, 2003; Hawley and Vaughn, 2003; Hawley et al., 2007] described the “well-adapted Machiavellian” who is able to achieve social dominance, whereas at the same time behaving in ways that serve to maintain some social relationships. This could characterize the highly skilled relational aggressor. Yet, few previous studies simultaneously consider peer relationship problems, peer social standing, and relational aggression and victimization when identifying adolescents with mental health problems [Card et al., 2008].

**Adolescents’ Perceptions of Their Peers**

Some studies have assessed peer status, relational aggression, and relational victimization using reports from peers at school (classmates or grade-mates). These reports are in the form of nominations of children who meet certain criteria (e.g., “are liked” or “exclude others”). Yet, how adolescents think about their own aggression and victimization and peer relationships is also important when attempting to identify adolescents with more socioemotional problems. What adolescents believe or perceive about their peer relationships has been found to better account for links between peer social standing or relational victimization and mental health symptoms [such as in Rudolph et al., 1997]. The second aim of this study was to test adolescents’ perceptions of their relationships with their peers as unique correlates of their depressive and social symptoms.
anxiety symptoms. The third aim was to contrast self-perceived and peer-reported relational aggression and victimization. Together, this should better discern how adolescents’ beliefs about their own aggression and victimization and their view of their peers covary with their schoolmates reports of peer problems, and understanding peer status based on multiple reporters was expected to isolate important correlates of depressive and anxiety symptoms.

These aims are consistent with recent calls for researchers to consider adolescents’ views of their relationships with peers when examining dimensions of peer group relationships and mental health [Hymel and Franke, 1985; Kistner et al., 2006; Lopez and DuBois, 2005]. The expected mental health symptoms associated with problematic peer relationships have been found when adolescents report their own awareness of their peer relationship problems and express negative attitudes toward their peers and their peers’ behaviors. In particular, Rudolph et al. [Caldwell et al., 2004; Rudolph and Hammen, 1999; Rudolph et al., 1997] and Zimmer-Gembeck et al. [2007, 2009] have recognized the importance of negative beliefs about peers or the self in relationships as part of a pathway or process linking others’ reports of relationship problems to mental health problems.

This Study

In summary, the primary purpose of this study was to identify correlates of adolescents’ depressive and social anxiety symptoms by focusing on the many dimensions of their relationships with their peers at school. This was a multimethod and multimeasure study that included reports from adolescents and their schoolmates. Analyses were completed to test whether (1) children have more depressive and social anxiety symptoms when their peers at school report that they have poorer peer status (low acceptance, high rejection, low popularity, high unpopularity, and low social prominence), are more relationally aggressive, and experience more relational victimization, (2) symptoms are also uniquely associated with adolescents’ self-reports of their own relational aggression, victimization, and negative views of their peers, and (3) agreement between peer and self-reports of relational aggression and victimization provides information to better isolate young people who have elevated depression and social anxiety symptoms relative to others.

METHOD

Participants

Participants were 335 Australian private school students from grades 5 to 10 (158 boys and 177 girls, age 10–16 years, age $M = 12.5$, $SD = 1.72$). Participants in grades 5 and 6 were students of one primary school, whereas participants in grades 7–10 were students at one high school. Both schools were on the same campus. In Australia, private schools are widely available and draw a range of students from diverse backgrounds. The parental consent rate and participation rate was 73%. No additional demographic information could be collected because of school restrictions, but families living in the area are approximately 85% white, 3% Aboriginal Australian or New Zealand Maori, 5% Asian, and 7% other sociocultural background. Most families are low/middle to upper/middle class in income. The regional statistics show that approximately 35% of adults attended at least some university and about 30% left high school before completing grade 12.

Measures

Depressive symptoms. The widely used Children’s Depression Inventory (CDI) [Kovacs, 1985] was used to assess depressive symptomatology. The CDI is a 27-item self-report questionnaire designed for 7–17 year olds and suitable for group administration. The frequency of symptoms in the past 2 weeks is reported from 0 (I am…once in a while) to 2 (I am…all the time). An overall score was obtained by summing responses to all items, thus the possible range of scores was 0 to 54. Higher scores denoted greater depressive symptoms. The internal consistency for the CDI in this study was $\alpha = .87$.

Social anxiety symptoms. The commonly used Social Anxiety Scale for Adolescents (SAS-A; La Greca and Lopez, 1998] was used to assess participants’ clinical symptoms of social anxiety. The SAS-A contains 18 descriptive self-statements with responses options ranging from 1 (not at all true) to 5 (really true). The validity of the scale has been established with students in grades 6–11 and the reading level is appropriate for Grade 5 children [Inderbitzen-Nolan and Walters, 2000]. Total scores of the SAS-A can range from 18 to 90, with higher scores indicating greater subjective experiences of social anxiety. In this study, the internal consistency for all items on the SAS-A was $\alpha = .92$.

Self-report of relational aggression and victimization. Nine items assessed relational
aggression and nine items assessed relational victimization, with responses ranging from 1 (not at all true) to 5 (very true). Six items were developed by Crick and Grotberg [1995] and the remaining items were developed for this study based on interviews with boys and girls known to be relationally aggressive or victimized [Pronk and Zimmer-Gembeck, 2010]. An example aggression item is “I have had to ditch a friend for a while to hang out with people who are more popular.” An example victimization item is “Some of my friends are nice to me one day and mean to me the next.” The interitem correlation for the nine aggression items was $\alpha = .76$ (.74 for boys and .79 for girls). The interitem correlation for the victimization items was $\alpha = .88$ (.88 for boys and .88 for girls).

Peer nominations of relational aggression and victimization. Eighteen items, designed to parallel the self-report items, assessed relational aggression and victimization. Students nominated others in their grade using a roster and identification codes. An example item is “Some people want to be more popular. Who might ditch their friends to hang out with others who are more popular?” The interitem correlation for the nine items was $\alpha = .96$ (.94 for boys and .97 for girls). Participants also nominated students in their grade who were victimized. An example item is “Who do students often say mean things about being their back?” The interitem correlation was $\alpha = .92$ (.95 for boys and .86 for girls).

Likeability and social status. Peer group acceptance, peer group rejection, unpopularity, and social prominence were assessed using peer nominations. Participants nominated others from their grade that best fit each of a series of descriptors. Peer acceptance and rejection were assessed via nominations of those “you like the most” and those “you like the least.” Unpopularity was assessed via nominations of those who “are the least popular,” whereas popularity was assessed by those who “are the most popular.” Nominating those who are “well-known”; those who “have influence over others”; those “who are leaders”; and those who “are admired” assessed other aspects of social prominence. Because of high correlations between nominations of popularity, well-known, influence, leadership, and admiration, these five items were averaged to form a “social prominence” score for each participant. These high correlations were anticipated given previous research summarized. The internal consistency for this scale was $\alpha = .93$. As is common practice for peer nominations, scores were standardized within grade.

Negative views of peers. Based on factor analyses in a pilot study [see Pronk, 2005], students’ views of their peers were measured with nine items from the Perceptions of Peers and Self Scale [Rudolph et al., 1995]. These items captured adolescents’ views that their peers were not trustworthy or dependable. An example item is other kids cannot be trusted. The internal consistency for this scale was $\alpha = .87$.

Procedure

After university ethical approval, parental consent forms were distributed to students to take home for their parents to complete. If the student was allowed to participate, the parental consent form required personal contact details in order to contact a parent about her/his child’s high level of depressive or anxiety symptoms, if necessary. Students were given a 2-week period to return parental consent forms. Incentives were offered to each school, whereby two $50 gift vouchers per grade were offered as a random draw for those that returned a consent form (regardless of forms saying “yes” or “no” to participation).

Data were collected during regular class hours within the students, normal classrooms, in one testing session. Those who were absent on the day of testing were promptly followed up for testing. Test booklets were distributed to all students who had parental consent. Students who did not have consent engaged in an alternate task prescribed by the class teacher. A researcher read aloud basic test instructions and made sure that participants had a clear understanding and were aware of the confidentiality of their responses. Students were informed of individual debriefing opportunities if they felt distressed for any reason. Students at the high school received lollipops for participation, whereas students of the primary school received a pen for participation.

RESULTS

Tests of Univariate Normality, Identification of Outliers, and Transformation of Data

Before conducting further analyses, the normality of variable distributions was checked using the KS–Lilliefors test. Although all measured variables showed some skew ($z > 3.29, P < .01$), peer nomination measures and depressive symptoms showed the most substantial positive skew. Logarithmic transformations were applied to the peer nomination
variables (after adding a constant to make all scores positive) and a square root transformation was applied to depressive symptom scores. Transformations applied to the peer nomination variables did not significantly improve skew. Hence, all analyses were conducted with the untransformed peer nomination variables. A square root transformation of depressive symptoms resulted in a distribution that approached normality. Therefore, the transformed depressive symptom scores were included in all analyses except when reporting descriptive statistics. Univariate and multivariate outliers were also examined, and none were detected.

**Descriptive Statistics Correlations and Gender Comparisons**

Table I summarizes the means and standard deviations of all measures and the correlations between them. Depressive symptom level was associated with negative aspects of peer relationships, including self-report of relational aggression and victimization, peer report of relational aggression, and adolescents’ negative views of their peers; but, depressive symptom level was not associated with positive dimensions of peer relationships. In addition, depressive symptom level was negatively associated with age, which was contrary to much literature showing increases in depressive symptoms with age or among older compared with young adolescents [Garber et al., 2002; Nolen-Hoeksema and Girgus, 1994]. Therefore, we examined the association between age and depressive symptoms further by comparing students in six age groups (age 10, 11, 12, 13, 14, and 15–16). This revealed a curvilinear pattern with higher depressive symptoms among both the youngest (age 10) and oldest (age 15–16) students ($F(5,334) = 3.1, P < .01$). To account for this U-shaped association between depressive symptoms and age, a squared age term was included in all of the following multivariate analyses of depressive symptoms.

Although correlated with depressive symptoms, social anxiety was associated with both negative and positive aspects of peer relationships, as well as children’s negative views of their peers (see Table I). In particular, children were less anxious when they were reported by peers to be more accepted and prominent. Children were more anxious when their peers reported them as more unpopular and relationally victimized or they self-reported more aggression or victimization. Social anxiety was lower among older children. But, different from depression, there was no significant age-related curvilinear pattern found.

![Table I. Correlations Between Symptoms, Peer Status, Aggression, Victimization, and Views of Peers (N = 335)](image)
Regarding associations between aspects of peer relationships, peer-reported relational aggression was associated with both increased social prominence as well as increased peer rejection (see Table I). Self-reported relational aggression was associated with more self-reported relational victimization. Peer-reported relational victimization was associated with higher levels of unpopularity among peers. In all cases, the correlation between a peer report and a self-report of relational aggression or victimization was modest but significant, ranging from $r = .12$ to $.25$, all $p < .05$.

Finally, boys and girls were compared on all measures. Only two gender differences were found. Boys self-reported more relational aggression than girls (boys $M = 15.0$, girls $M = 14.0$; $t(334) = 2.03$, $p < .05$). Girls were reported by their peers to be more relationally aggressive than boys (boys $M = -0.11$, girls $M = 0.09$; $t(334) = -2.07$, $p < .05$). Therefore, gender was included as a covariate in all analyses.

**Multivariate Models of Depressive and Social Anxiety Symptoms**

Two hierarchical multiple regression models were estimated to examine associations of depressive and social anxiety symptoms with age, gender, peer relationships, peer social standing, relational aggression, relational victimization, and adolescents’ views of their peers. These models were estimated in two steps. In the first step, the four measures of peer status were entered. In the second step, self-reports of relational aggression, relational victimization, and negative views of peers were entered. This order of variable entry was completed, because some previous research indicates that it is self-perceived peer problems that mediate associations between reports provided by others and mental health problems [Alloy, 2001; Boivin et al., 1994; Martin et al., 2003; Panak and Garber, 1992; Zimmer-Gembeck et al., 2007]. Therefore, we entered variables beginning with those expected to be most distal (peer reports) and ending with the most proximal (self-reports) correlates of mental health problems.

**Depressive symptoms.** The results of the hierarchical model regressing all variables on depressive symptoms can be seen in Table II. When depression was regressed on age, gender, and peer reports of peer relationships, aggression, and victimization in Step 1, the model was significant ($p < .01$; see Table II). However, only age and the square of age were significantly associated with

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**TABLE II. Results of Regressing Depressive and Social Anxiety Symptoms on Peer Relationships, Peer Social Standing, Relational Aggression and Victimization, and Views of Peers ($N = 335$)**

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>$B$ ($SE$ $B$)</th>
<th>$\beta$</th>
<th>$B$ ($SE$ $B$)</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1, $\Delta R^2$</strong></td>
<td>.06**</td>
<td></td>
<td>.14**</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>$-0.09$ ($0.04$)</td>
<td>$-0.12^*$</td>
<td>$-1.80$ ($0.41$)</td>
<td>$-0.22^*$</td>
</tr>
<tr>
<td>Age squared</td>
<td>0.08 ($0.02$)</td>
<td>.18**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>$-0.13$ ($0.14$)</td>
<td>$-0.05$</td>
<td>3.90 ($1.50$)</td>
<td>.14*</td>
</tr>
<tr>
<td>Peer Acceptance PR</td>
<td>0.01 ($0.08$)</td>
<td>.01</td>
<td>$-2.09$ ($0.84$)</td>
<td>$-0.15^*$</td>
</tr>
<tr>
<td>Social Prominence PR</td>
<td>0.01 ($0.10$)</td>
<td>.10</td>
<td>$-1.19$ ($1.07$)</td>
<td>$-0.08$</td>
</tr>
<tr>
<td>Peer Rejection PR</td>
<td>$-0.02$ ($0.12$)</td>
<td>$-0.02$</td>
<td>0.65 ($1.24$)</td>
<td>.05</td>
</tr>
<tr>
<td>Unpopularity PR</td>
<td>0.08 ($0.11$)</td>
<td>.07</td>
<td>1.49 ($1.18$)</td>
<td>.11</td>
</tr>
<tr>
<td>Relational aggression, PR</td>
<td>0.19 ($0.14$)</td>
<td>.14</td>
<td>$-1.23$ ($1.43$)</td>
<td>$-0.08$</td>
</tr>
<tr>
<td>Relational victim, PR</td>
<td>$-0.03$ ($0.13$)</td>
<td>$-0.02$</td>
<td>0.07 ($1.41$)</td>
<td>.00</td>
</tr>
<tr>
<td><strong>Step 2, $\Delta R^2$</strong></td>
<td>.28**</td>
<td></td>
<td>.37**</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>0.05 ($0.03$)</td>
<td>.04</td>
<td>$-0.66$ ($0.33$)</td>
<td>$-0.08^*$</td>
</tr>
<tr>
<td>Age squared</td>
<td>0.03 ($0.02$)</td>
<td>.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>$-0.19$ ($0.12$)</td>
<td>$-0.08$</td>
<td>2.77 ($1.15$)</td>
<td>.10*</td>
</tr>
<tr>
<td>Peer Acceptance PR</td>
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<td>.10</td>
<td>$-1.05$ ($0.66$)</td>
<td>$-0.08$</td>
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<tr>
<td>Social Prominence PR</td>
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<td>$-0.02$</td>
<td>$-1.09$ ($0.84$)</td>
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<td>.00</td>
<td>0.37 ($0.90$)</td>
<td>.03</td>
</tr>
<tr>
<td>Relational aggression, PR</td>
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<td>.14</td>
<td>$-0.79$ ($1.12$)</td>
<td>$-0.05$</td>
</tr>
<tr>
<td>Relational victim, PR</td>
<td>$-0.06$ ($0.11$)</td>
<td>$-0.04$</td>
<td>$-0.35$ ($1.07$)</td>
<td>$-0.02$</td>
</tr>
<tr>
<td>Relational aggression, SR</td>
<td>0.02 ($0.01$)</td>
<td>.10</td>
<td>0.12 ($0.12$)</td>
<td>.04</td>
</tr>
<tr>
<td>Relational victim SR</td>
<td>0.04 ($0.01$)</td>
<td>.22**</td>
<td>0.12 ($0.11$)</td>
<td>.07</td>
</tr>
<tr>
<td>View of peers SR</td>
<td>0.06 ($0.01$)</td>
<td>.37**</td>
<td>1.07 ($0.11$)</td>
<td>.58**</td>
</tr>
</tbody>
</table>

PR, peer report; SR, self-report. Depressive symptoms model $F(12, 322) = 13.98$, $p < .01$, $R^2 = .34$. Social anxiety symptoms model $F(11, 323) = 30.17$, $p < .01$, $R^2 = .51$, *$p < .05$. **$p < .01$. 

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*Aggr. Behav.*
depressive symptoms, showing a U-shaped association of depressive symptoms with age. When self-reports of aggression, victimization, and negative views of peers were entered in Step 2, there was a significant $R^2$ change of .28 and self-reported relational victimization and negative views of peers were each positively associated with depressive symptoms, $\beta = .22$ and .37, respectively ($P < .01$). Adolescents who reported more victimization and more distrust of their peers also reported more depressive symptoms. In total, after Step 2, 34% of the variance was accounted for in depressive symptoms ($F(12, 322) = 13.98, P < .01$).

**Social anxiety symptoms.** The results of the hierarchical model of social anxiety can be seen in the last two columns of Table II. When social anxiety was regressed on age, gender, and peer reports of status, relational aggression, and victimization, the model was significant ($P < .01$). Age, gender, and peer acceptance were significantly associated with social anxiety symptoms, showing lower anxiety at older ages, more anxiety among girls, and less anxiety among those who were more accepted by their peers. When self-reports of relational aggression and victimization as well as negative views of peers were entered in Step 2, there was a significant $R^2$ change of .37 and negative views of peers was positively associated with social anxiety symptoms ($\beta = .58, P < .01$). Adolescents who reported more distrust of their peers also reported more social anxiety symptoms. Moreover, the association between social anxiety and peer acceptance was no longer significant. In total, after Step 2, 51% of the variance was accounted for in social anxiety symptoms ($F(11, 323) = 30.17, P < .01$).

**Lack of Agreement Between Self- and Peer Reports of Aggression and Victimization**

To address the third aim of this study, and because so few of the peer report variables were associated with depressive symptoms and social anxiety in the multivariate models, we used a final set of analyses to examine whether the lack of agreement between self- and peer reports of relational aggression and victimization helped identify children with the most socioemotional problems. We also examined whether using self- and peer report further distinguished children who differed in peer acceptance, peer rejection, social prominence, and views of peers. To do these comparisons, we formed discrepancy scores by standardizing aggression and victimization scores and subtracting peer-reported aggression or victimization from the parallel measure based on self-report. In this way, positive and higher scores indicated adolescents who reported that they were more aggressive or victimized than they were reported to be by their peers. Negative and lower scores identified adolescents who were reported by peers to be more aggressive or victimized than when self-reported. Subsequently, we formed three groups based on the aggression discrepancy score and three groups based on the victimization discrepancy score. Adolescents who reported aggression more than .5 SD above what was reported by their peers were in one group, and adolescents who reported aggression less than .5 SD below what was reported by their peers were in a second group. All others were placed in a third, middle group, which had aggression scores that were fairly similar when reported by the self and by peers. The same strategy was then used to form three victimization discrepancy groups. Groups were compared to determine differences in depressive symptoms, social anxiety, acceptance, rejection, social prominence, and negative views of peers (see Table III).

As can be seen in Table III, group differences between aggression discrepancy groups were found for all measures with the exception of peer acceptance. More specifically, children who reported more aggression than was reported by their peers (group 3a in Table III) were particularly high in depressive and social anxiety symptoms. They also had more negative views of their peers. In contrast, those who reported less aggression than reported by their peers were highest in peer rejection and also highest in social prominence.

Group differences between victimization discrepancy groups were found for all measures except social prominence (see Table III). As was found for aggression, children who reported more victimization than was reported by their peers (group 3v in Table III) also were particularly high in depressive symptoms, social anxiety symptoms, and negative views of their peers. In contrast, children who reported less victimization compared with reports from their peers were particularly low in depressive symptoms and peer acceptance, and also highly rejected by their peers.

To assist with interpretation of the group differences shown in Table III, average relational aggression and victimization levels within groups are shown and compared in Table IV. As can be seen, the groups particularly high in symptoms of depression and social anxiety were also exceedingly high in self-reported aggression and victimization (groups 3a and 3v). But, these groups were lower in peer-reported aggression and victimization when compared with the
groups who underreported their aggression and victimization (groups 1a and 1v). Most often, the groups that underreported or reported a similar level of aggression or victimization compared with their peers (groups 1a, 2a, 1v, 2v) did not differ in aggression or victimization levels from each other.

**DISCUSSION**

One aim of this study was to test whether peer-reported status and relational aggression and victimization are unique correlates of depressive and social anxiety symptoms among adolescents.

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**TABLE III.** Peer Status of Children More, Less, or the Same in Aggression or Victimization when Compared With Reports From Peers (N = 335)

<table>
<thead>
<tr>
<th>Relational aggression groups</th>
<th>Depressive symptomsa</th>
<th>Social anxiety symptoms</th>
<th>Peer acceptance</th>
<th>Peer rejection</th>
<th>Social prominence</th>
<th>View of peers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a. Self-reported less aggression than reported by peers (n = 74)</td>
<td>2.71 (1.51)</td>
<td>37.86 (13.36)</td>
<td>0.11 (1.02)</td>
<td>0.82 (1.35)</td>
<td>0.46 (1.11)</td>
<td>19.14 (7.74)</td>
</tr>
<tr>
<td>2a. Self-reported the same aggression as peers (n = 176)</td>
<td>2.46 (1.09)</td>
<td>40.92 (13.24)</td>
<td>0.05 (1.02)</td>
<td>–0.23 (0.68)</td>
<td>–0.14 (0.73)</td>
<td>20.06 (7.20)</td>
</tr>
<tr>
<td>3a. Self-reported more aggression than reported by peers (n = 85)</td>
<td>3.10 (1.10)</td>
<td>46.07 (14.42)</td>
<td>–0.19 (0.90)</td>
<td>–0.01 (0.98)</td>
<td>–0.11 (0.84)</td>
<td>22.89 (7.52)</td>
</tr>
<tr>
<td>F (3,331)</td>
<td>8.23***</td>
<td>7.63**</td>
<td>2.22</td>
<td>42.81***</td>
<td>13.73**</td>
<td>5.97**</td>
</tr>
<tr>
<td>Pairwise comparisons</td>
<td>2a &lt; 3a</td>
<td>1a, 2a &lt; 3a</td>
<td>1a &gt; 2a &gt; 3a</td>
<td>1a &gt; 2a, 3a</td>
<td>1a, 2a &lt; 3a</td>
<td></td>
</tr>
</tbody>
</table>

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**TABLE IV.** Aggression and Victimization Levels of Children More, Less, or the Same in Aggression or Victimization When Compared With Reports From Peers (N = 335)

<table>
<thead>
<tr>
<th>Relational aggression groups</th>
<th>Relational aggression, self-report</th>
<th>Relational victimization, self-report</th>
<th>Relational aggression, peer-report</th>
<th>Relational victimization, peer-report</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a. Self-reported less aggression than reported by peers (n = 74)</td>
<td>11.9 (2.9)</td>
<td>16.9 (7.9)</td>
<td>0.94 (1.21)</td>
<td>0.23 (0.94)</td>
</tr>
<tr>
<td>2a. Self-reported the same aggression as peers (n = 176)</td>
<td>12.7 (3.4)</td>
<td>16.7 (7.0)</td>
<td>–0.25 (0.51)</td>
<td>–0.03 (0.82)</td>
</tr>
<tr>
<td>3a. Self-reported more aggression than reported by peers (n = 85)</td>
<td>20.4 (4.4)</td>
<td>20.9 (8.4)</td>
<td>0.00 (0.87)</td>
<td>–0.14 (0.75)</td>
</tr>
<tr>
<td>F (3,331)</td>
<td>153.2***</td>
<td>9.6***</td>
<td>43.1***</td>
<td>4.3*</td>
</tr>
<tr>
<td>Pairwise comparisons</td>
<td>1a, 2a &lt; 3a</td>
<td>1a, 2a &lt; 3a</td>
<td>2a, 3a &lt; 1a</td>
<td>3a &lt; 1a</td>
</tr>
</tbody>
</table>

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**TABLE V.** Aggression and Victimization Levels of Children More, Less, or the Same in Aggression or Victimization When Compared With Reports From Peers (N = 335)

<table>
<thead>
<tr>
<th>Relational victimization groups</th>
<th>Relational aggression, self-report</th>
<th>Relational victimization, self-report</th>
<th>Relational aggression, peer-report</th>
<th>Relational victimization, peer-report</th>
</tr>
</thead>
<tbody>
<tr>
<td>1v. Self-reported less victimization than reported by peers (n = 76)</td>
<td>13.4 (4.7)</td>
<td>13.5 (5.3)</td>
<td>0.44 (1.25)</td>
<td>0.78 (1.25)</td>
</tr>
<tr>
<td>2v. Self-reported the same victimization as peers (n = 176)</td>
<td>13.8 (4.1)</td>
<td>15.2 (5.1)</td>
<td>–0.15 (0.65)</td>
<td>–0.24 (0.50)</td>
</tr>
<tr>
<td>3v. Self-reported more victimization than reported by peers (n = 83)</td>
<td>16.7 (6.1)</td>
<td>27.3 (6.3)</td>
<td>–0.10 (0.71)</td>
<td>–0.21 (0.41)</td>
</tr>
<tr>
<td>F (3,331)</td>
<td>12.49***</td>
<td>168.39***</td>
<td>13.83***</td>
<td>56.98***</td>
</tr>
<tr>
<td>Pairwise comparisons</td>
<td>1v, 2v &lt; 3v</td>
<td>1v &lt; 2v &lt; 3v</td>
<td>2v, 3v &lt; 1v</td>
<td>2v, 3v &lt; 1v</td>
</tr>
</tbody>
</table>

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*P < .05, **P < .01, ***P < .001.  
*aLog transformed.
The second aim was to test whether adolescents’ own perceptions of their aggression and victimization, as well as their negative views of their peers as untrustworthy and undependable, were additional important correlates of adolescents’ socioemotional problems. A third set of analyses was used to further distinguish how relational aggression and victimization are correlated with symptoms and peer status by forming discrepancy scores comparing peer and self-reports of aggression and victimization. These discrepancies were useful in identifying adolescents with more depressive and social anxiety symptoms, as well as identifying those who are more accepted or rejected by peers or more or less popular and prominent in their peer groups.

Before accounting for self-reports of relational aggression, relational victimization and negative views of peers and after accounting for age and gender, no measure of peer-reported peer status, aggression, or victimization was associated with depressive symptoms. Moreover, peer acceptance was the only aspect of peer status associated with social anxiety symptoms. Children who are more accepted by their peers reported fewer social anxiety symptoms. When self-reports of relational aggression, relational victimization, and adolescents’ views of their peers as untrustworthy were considered, there were much more consistent associations with depression and anxiety. Depressive symptoms were higher when adolescents perceived they were more victimized and had more negative views of their peers. Social anxiety symptoms were higher when adolescents had more negative views of their peers. This suggests that it is perceptions of problematic peer relationships and negative thinking patterns about peers that co-occur with symptoms of depression and social anxiety, rather than showing links between schoolmates’ views of who has less peer status or who is more aggressive or victimized with adolescents’ socioemotional problems. These findings are consistent with past research on the social cognitive deficits associated with internalizing symptomatology. In particular, previous evidence has shown that it is perceptions of peer relationship problems and negative views of peer relationships that are more directly associated with mental health problems among children and adolescents [e.g., Cole and Turner, 1993; Rudolph et al., 1997; Zimmer-Gembeck et al., 2009].

When discrepancies between self-report and peer report of relational aggression and victimization were considered, group differences were found that indicated how perceptual biases and peer relationship problems may be found among adolescents with elevated depressive symptoms and elevated social anxiety symptoms. First, adolescents were the highest in symptoms and negative views of their peers when they overreported their own aggression or victimization compared with reports from their peers, and on average their peers reported slightly below-average victimization. This suggests that perceiving the self as aggressive or victimized, as well as distrusting peers at school, may be perceptual biases that are symptoms or co-occur with having a high number of depressive and anxiety symptoms. Hence, this pattern of overreporting about one’s own aggression and victimization identifies young people most at risk for socioemotional problems.

Second, adolescents who underreport their own aggression compared with reports from their peers, show a complex pattern of not only higher peer rejection, but also higher social prominence and higher (but not significantly higher) peer acceptance. Yet, this group had only modest depressive symptoms and low social anxiety. This is consistent with research showing that aggressors can be more socially prominent members of the peer group; however, they were also more likely to be rejected and disliked by their peers [Lease et al., 2002a, b]. These findings of both high rejection and social prominence, coupled with moderate depressive symptoms and low self-reported aggression, suggest there could be longer term mental health problems for this group of adolescents if they continue to be perceived by their peers as aggressive and decline in social prominence as they get older [Zimmer-Gembeck et al., 2005].

Third, adolescents who underreport victimization compared with their peers are low in peer acceptance and high in peer rejection. However, they do not have highly negative views of their peers and have the lowest levels of depressive symptoms. Hence, it would seem that these children should show or be at risk for socioemotional problems but they seem relatively resilient to them. Perhaps these are children who are not integrated into the peer group, do not place importance on the peer social world, and/or have other supports or interests that can explain their relatively lower levels of symptoms of depression and social anxiety.

Finally, it is worth noting that we found associations of relational aggression with greater depression and social anxiety symptoms in bivariate correlations, but these associations were not significant in multivariate analyses. This suggests that previous associations of relational aggression and mental health symptoms may have been spurious owing to the overlap between aggression and victimization or
between aggression and other aspects of peer relationships that were measured in this study.

When taken together, these findings might be viewed as evidence that gathering peer reports of relational aggression and victimization provide limited additional explanatory power when attempting to predict which children will be more depressed or socially anxious. However, peer reports still have much value methodologically and practically; they reduce the possibility that shared method variance is partly responsible for associations and they could help identify young people who are especially known among their peers because of their negative behaviors. Moreover, when these reports are compared with self-reports they could also be used to channel young people into particular forms of interventions. For example, children who are reported as aggressive by peers, but who do not self-report aggression, may require a different intervention when compared with children who are seen to be aggressive by peers and recognize and report their own bad behavior.

Limitations and Future Research Considerations

Some limitations must be considered along with the findings. First, although multiple reporters were a benefit, the study design was cross-sectional. Hence, it is quite possible that these findings show that depressive and social anxiety symptoms are antecedents of peer relationship problems as much as they suggest that peer problems, aggression, and victimization are precursors of depressive and social anxiety symptoms. Further research is needed to test directional associations and, particularly, to determine whether reciprocal relationships exist between peer status, relational aggression and victimization, depressive symptoms, and social anxiety. For example, a recent study reported that depressive symptoms precede negative perceptions of peers, which in turn has negative implications for peer status [see Zimmer-Gembeck et al., 2009]. Similarly, there is evidence for reciprocal effects with withdrawal (measured as social disengagement) having an influence on later relational self-views and children withdrawing from peers as a consequence of their relatively more negative relational self-views [Caldwell et al., 2004]. It is also known that depressed children can prompt negative interactions from peers [see Rudolph and Clark, 2001] as much as peer problems can affect mental health [Bagwell et al., 2001; Caldwell et al., 2004; Zimmer-Gembeck et al., 2009].

It is possible that the cross-sectional correlations found here could be explained by unmeasured variables. Because of the size of the survey when capturing both peer and self-report data, it was not possible to also measure other potential individual and environmental factors that might play a correlational role in depressive and social anxiety symptoms [Rigby, 2003; Rudolph et al., 1995; Stauffacher and DeHart, 2006]. Future research could examine other competency domains within an adolescents’ life, such as athleticism, academic abilities, and physical appearance [Harter et al., 1998], especially when accounting for children who are described as victimized by their peers, but do not perceive this victimization and do not show signs of socioemotional problems.

Finally, we did not consider gender differences in this study. Gender has been a frequent focus in research on relational aggression [Geiger et al., 2004] and for research on peer relationships and social status [Card et al., 2005]. Future research should consider gender along with peer report, self-report, and discrepancies in relational aggression and victimization to determine their gender-specific links with mental health problems. This will probably also require extending the range of mental health problems to include externalizing disorders (e.g., delinquency, substance use) and other problems.

In conclusion, adolescents with poorer socioemotional functioning self-report more relational victimization, overreport victimization compared with reports from peers, and report their peers as more untrustworthy. In addition, when differences in self-perceptions and reports from peers are further considered, two other groups of adolescents are found. First, young people underreporting victimization when compared with peer report have lower socioemotional problems, on average even though their peers report them as generally high in victimization. Future research could consider what assists them to be resilient to mental health problems in the face of victimization. Second, relational aggression when perceived by peers, but underreported by the self, seems to identify a socially prominent group of adolescents who are also disliked by their peers. Such a group has been described in previous research [Little et al., 2003], but their lack of recognition of their own aggression has not been previously identified. This group has a moderate level of depressive symptoms. But, this pattern of findings may have identified a group that is at risk for continued relational aggression and escalating socioemotional problems over time [Geiger et al., 2004]. In the future, it would be productive...
to conduct a longitudinal study focusing on adolescents' changing socioemotional problems as correlates of their discrepant reporting of relational aggression and victimization as compared with their peers.

REFERENCES


Depression, Anxiety, and Relational Aggression


