Does School Connectedness Buffer the Impact of Peer Victimization on Early Adolescents’ Subsequent Adjustment Problems?

Alexandra Loukas¹ and Keryn E. Pasch¹

Abstract
The current study examined the role of school connectedness as a moderator of the associations between overt and relational forms of peer victimization and early adolescents’ subsequent adjustment problems. Data were collected from 490 adolescents when they were initially in the sixth and seventh grades and again 1 year later. Regression analyses indicated that overt, but not relational, victimization predicted increases in boys’ and girls’ conduct problems and social anxiety and girls’ depressive symptoms across the 1-year period. School connectedness was associated with decreases in adolescents’ conduct problems across time and buffered the impact of overt victimization on girls’ subsequent conduct problems. Study findings highlighted the protective role of the school context for girls experiencing overt victimization.

Keywords
externalizing behaviors, internalizing behaviors, school context, victimization

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Peer victimization, or being the target of aggressive behaviors, is associated with various externalizing and internalizing problems. Victimized youth are at elevated risk for conduct problems (Sullivan, Farrell, & Kliewer, 2006) because repeated attacks by peers contribute to the development of hostile attributions and, in turn, to aggressive retaliation (Troop-Gordon & Ladd, 2005). Alternatively, such youth are particularly likely to develop depressive symptoms and social anxiety (Hawker & Boulton, 2003) because they tend to internalize negative peer messages (Troop-Gordon & Ladd, 2005). Although adolescents who are victimized are more likely than their peers to report such adjustment problems, they are not automatically bound to experience them. Variability in outcomes suggests that certain factors may buffer or offset the impact of peer victimization on externalizing and internalizing problems (Hodges, Boivin, Vitaro, & Bukowski, 1999; Yeung & Leadbeater, 2010). The purpose of the present study was to examine the role of school connectedness as a moderator of the impact of overt and relational forms of peer victimization on the subsequent conduct problems, depressive symptoms, and social anxiety of 10- to 14-year-old adolescents.

Peer victimization occurs in various ways. Overt victimization refers to being threatened or harmed through physical damage and verbal assault, such as being hit and yelled at (Crick & Grotpeter, 1996). Relational victimization, on the other hand, involves being the target of hurtful or negative manipulation of peer relationships or friendships (Crick & Grotpeter, 1996). Also referred to as social or indirect victimization, relational victimization includes being excluded from a group and being the object of lies or rumors. While research indicates that boys are more likely than girls to be targets of overt forms of victimization, gender differences in relational victimization are conflicting. Some researchers find that girls are more likely than boys to experience relational victimization (Crick & Nelson, 2002; Putallaz et al., 2007) whereas others find no gender differences (Prinstein, Boergers, & Vernberg, 2001). Moreover, although fewer researchers have examined gender as a moderator of overt and relational victimization effects, existing evidence indicates that overt victimization might be particularly related to boys’ externalizing and internalizing problems whereas relational victimization might be related to girls’ (Crick & Nelson, 2002; Sullivan et al., 2006).

Given the negative consequences of peer victimization, researchers have become increasingly interested in examining the protective factors that buffer or offset the impact of both forms of peer victimization on early adolescents’ adjustment problems. Existing evidence indicates that various types of support, including friend, teacher, and parent support, act as buffers of the victimization adjustment problem association (Schmidt & Bagwell, 2007; Yeung
& Leadbeater, 2010). For example, Yeung and Leadbeater found that when data were examined prospectively, teacher, but not parent, emotional support buffered the impact of relational, but not physical, victimization on the subsequent emotional and behavioral problems of 12- to 19-year-old adolescents 2 years later. Yeung and Leadbeater’s findings highlight the protective role of interpersonal relationships within the school context and suggest that other aspects of the school experience, such as school connectedness, may similarly buffer or offset peer victimization effects.

School connectedness has been defined as students’ experiences of belonging and closeness with others at the school (Resnick et al., 1997). Because researchers disagree on the exact elements that comprise school connectedness and the term that best captures the concept (Libbey, 2004), various terms such as school attachment, school bonding, school belonging, and school connectedness are used interchangeably. In the present study, school connectedness was conceptualized as the affective and interpersonal aspect of the school experience, which includes students’ sense of safety, belonging at the school, and teacher fairness and support (Resnick et al., 1997). School connectedness may play a particularly important role during early adolescence, when the need for interpersonal affiliation and intimacy with nonfamilial adults and peers intensifies (Buhrmester, 1990). Indeed, a number of studies indicate that early adolescents’ reports of school connectedness are associated with fewer subsequent externalizing problems, such as conduct problems (Loukas, Ripperger-Suhler, & Horton, 2009) and internalizing problems, such as depressive symptoms and anxiety (Shochet, Dadds, Ham, & Montague, 2006).

In addition to its direct ameliorative role, school connectedness may serve a protective function, moderating the impact of peer victimization on adolescents’ externalizing and internalizing problems (e.g., Stadler, Feifel, Rohrmann, Vermeiren, & Poustka, 2010). According to social control (Hirschi, 1969) and social development (Catalano, Kosterman, Hawkins, & Newcomb, 1996) theories, adolescents who are connected to the school will adopt the school’s norms, values, and expectations, and for this reason, will refrain from engaging in behaviors inconsistent with the school’s expectations. From this perspective, early adolescents who are targets of victimization may escape elevated levels of conduct problems when they are connected to the school because they refrain from retaliating aggressively against their peers. Students who are connected to the school also may be protected from the negative consequences of peer victimization because they are likely to have good-quality interpersonal relationships with teachers (Whitlock, 2006) and peers (Battistich, Schaps, & Wilson, 2004). In particular, classmates and teachers can provide the emotional support needed to deal with the victimization
experiences and in this way decrease the possibility of externalizing and internalizing problems (Schmidt & Bagwell, 2007; Yeung & Leadbeater, 2010). Provision of emotional support by teachers may be particularly beneficial for victimized youth who report poor-quality friendships. Finally, teachers may provide instrumental support by intervening directly to decrease overt and relational attacks (Fekkes, Pijpers, & Verloove-Vanhorick, 2005).

One cross-sectional study has examined whether school support, a construct similar to school connectedness comprising school climate, teacher support, and school attachment, buffers or offsets peer victimization effects. Stadler and her colleagues (2010) found that school support buffered the association between peer victimization and students’ mental health problems for high school students, but not middle school students. However, Stadler and her colleagues combined overt and relational forms of victimization into one composite and as such were not able to establish whether school support moderated one or both forms of victimization. Moreover, the cross-sectional nature of the study makes it difficult to draw conclusions regarding the direction of associations. The present study extends Stadler et al.’s research by examining school connectedness as a moderator of the associations between both overt and relational forms of victimization and early adolescents’ reports of subsequent conduct problems, depressive symptoms, and social anxiety 1 year later.

In summary, we examined (a) the impact of overt and relational victimization on the subsequent conduct problems, depressive symptoms, and social anxiety (1 year later) of students initially in the sixth and seventh grades, and (b) the role of school connectedness as a moderator of the associations between both forms of victimization and subsequent adjustment problems. On the basis of prior research, we hypothesized that both forms of victimization would contribute directly to increased levels of early adolescents’ subsequent conduct problems, depressive symptoms, and social anxiety 1 year later and that school connectedness would contribute to decreased levels of these problems. We also hypothesized that school connectedness would moderate or buffer the impact of overt and relational victimization on subsequent adjustment problems. Finally, because evidence indicates that peer victimization and school connectedness effects may be moderated by gender (Crick & Nelson, 2002; Sullivan et al., 2006), we explored whether the direct and moderated associations varied for boys and girls.

Method

A total of 490 students aged 10 to 14 years and attending all three middle schools in a suburban school district in central Texas were recruited. At Wave 1, students
were in the sixth and seventh grades (mean age = 11.69, SD = 0.76). Wave 2 occurred 1 year later when students were in the seventh and eighth grades (mean age = 12.74, SD = 0.72). Fifty-three percent of these students were female; 76% were European American, 16% were Hispanic, 3% were African American, and the remainder reported another ethnicity. Data from an additional 10 students who were missing substantial information relevant to this research were removed and not used in the present study.

**Procedure**

At Wave 1, active parental consent was obtained from 76% (n = 884) of all sixth- and seventh-grade students attending the three schools. Because the study was not originally conceptualized to include multiple waves, active parental consent was reobtained when the decision was made to conduct a second wave of data collection. Although all three schools allowed students to participate at Wave 2, the principal for one school did not allow recruitment of the eighth-grade students (i.e., 130 students who participated in Wave 1 were not eligible to participate at Wave 2) because of their rigid standardized testing schedule for the year. Of the students participating at Wave 1 and who were eligible to participate at Wave 2, 71% received parental permission to participate in Wave 2. Of the 71% of these students, 8 students refused participation and 30 students were absent on the day of the survey and one make-up day. Consequently, 70% of the original sample participants participated at Wave 2, and for purposes of this study, only data from students participating in both waves were used. A questionnaire containing no personally identifying information and consisting of 161 items at Wave 1 and 160 items at Wave 2 was group-administered in one 40-minute homeroom class. A member of the research team read each question aloud to students to maintain compliance and to control for varying levels of reading comprehension.

**Measures**

**Overt victimization.** Overt victimization was assessed at Wave 1 with the 4-item Overt Victimization scale from the Social Experience Questionnaire—Peer Report (SEQ-PR; Crick & Bigbee, 1998). The four items were modified so that students could self-report how frequently they were picked on by bullies, hit, beat up, or yelled at by other students. Items were scored on a scale ranging from 1 (not at all) to 5 (all the time) The four items were averaged so that higher scores reflect elevated levels of overt victimization. The internal consistency reliability for the overt victimization scale was .78.
Relational victimization. Self-reported peer victimization was assessed at Wave 1 with seven items. Five items were adapted from the SEQ-PR (Crick & Bigbee, 1998) by modifying them so that adolescents could provide reports of their own experiences of victimization. The five items assessed the frequency that students felt that they were the object of lies and rumors, were left out of a group or things because someone was mad at them, and were ignored when someone was mad at them. Two additional items assessing the frequency of being the victim of negative facial expressions (make mean faces and roll eyes at you) were added given that such expressions are important features of girls’ aggressive behaviors (Galen & Underwood, 1997) and that early adolescents reported rolling eyes as the most frequently experienced nonphysically aggressive behavior (Paquette & Underwood, 1999). All seven items were scored on a scale ranging from 1 (not at all) to 5 (all the time) and were averaged so that higher scores reflect elevated levels of relational victimization. The internal consistency reliability (coefficient alpha) for this 7-item scale was .87.

School connectedness. Five items from the National Longitudinal Study of Adolescent Health (see McNeely, Nonnemaker, & Blum, 2002) were used to assess the level of connectedness to the school at Wave 1. Students responded to the following five items, “I feel safe in my school,” “The teachers at this school treat students fairly,” “I am happy to be at this school,” “I feel like I am part of this school,” and “I feel close to people at this school.” Each item was scored on a scale ranging from 1 (strongly agree) to 5 (strongly disagree). Items were reverse coded and averaged so that higher scores reflect higher levels of school connectedness. These five items have been shown to have acceptable reliability and to be predictive of lower levels of a variety of externalizing and internalizing problems (see Resnick et al., 1997). The internal consistency reliability of the five items for the present sample was .75.

Conduct problems. The self-report form of the 25-item Strengths and Difficulties Questionnaire (SDQ; Goodman, Meltzer, & Bailey, 1998) was used to assess adolescent conduct problems at Wave 1 and Wave 2. The SDQ is a brief behavioral screening questionnaire designed to assess conduct problems, prosocial behaviors, emotional symptoms, hyperactivity, and peer problems among 11- to 16-year-old youth. Only the five-item Conduct Problems subscale (e.g., “I fight a lot. I can make other people do what I want.” “I am often accused of lying or cheating.”) was used in the current study. Each item was scored on a scale ranging from 1 (not true) to 3 (certainly true) and averaged so that higher scores reflect more conduct problems. Goodman and colleagues (Goodman, 1997; Goodman et al., 1998) reported that the Conduct Problems subscale discriminates between psychiatric and control
samples of 11- to 16-year-old adolescents and is reliable. In the current study, the internal consistency reliability of the five-item Conduct Problems subscale was .61 for Wave 1 reports and .66 for Wave 2 reports.

**Depressive symptoms.** The 27-item Children’s Depression Inventory (CDI; Kovacs, 1992) was used to measure adolescent depressive symptoms at Wave 1 and Wave 2. The CDI is appropriate for children ranging in age from 7 to 17 and assesses the cognitive and somatic aspects of depression. Adolescents were presented with 26 sets of three-response alternatives and asked to pick the one that best described them in the past 2 weeks. One item regarding suicidal ideation was not included in the present study at the request of the school principals. The final score was based on the average of the 26 items. Each item was scored on a scale ranging from 0 to 2, with higher scores reflecting more depressive symptoms. The CDI distinguishes between adolescents with major depression and those with no depression diagnosis and has demonstrated excellent internal consistency reliability (Craighead, Curry, & Ilardi, 1995). The internal consistency reliability for the 26 items was .91 for both Wave 1 and Wave 2 reports.

**Social anxiety.** The 18-item self-report Social Anxiety Scale for Adolescents (SAS-A) adapted by La Greca and Lopez (1998) from the SAS-Revised (La Greca & Stone, 1993) was used to measure social anxiety at Wave 1 and Wave 2. The SAS-A assesses fear of negative evaluation from peers (eight items), social avoidance and distress in new social situations or with unfamiliar peers (six items), and generalized social avoidance and distress (four items). Each item was rated on a scale ranging from 1 (not at all) to 5 (all the time). The 18 items were averaged together so that higher scores reflect more social anxiety. La Greca and Lopez have shown that the social anxiety scale has satisfactory internal consistency reliability. In the present study, internal consistency reliability (coefficient alpha) was .91 for Wave 1 reports and .92 for Wave 2 reports.

**Attrition Analyses**

Analyses were conducted to determine whether students who participated at both waves of the study differed from their peers who participated only at Wave 1. Results indicated that in comparison with students who participated at both waves of the study, students who did not participate at Wave 2 reported more Wave 1 conduct problems, \( t(879) = 3.45, p < .001 \), and depressive symptoms, \( t(881) = 2.62, p < .01 \), and lower levels of school connectedness, \( t(880) = -2.46, p < .05 \). There were no differences between the two groups on overt victimization, \( t(879) = 1.03 \) (ns); relational victimization, \( t(879) = 1.71 \) (ns); or social anxiety, \( t(880) = 1.14 \) (ns).
Data Analysis

A series of five-step hierarchical regression analyses were conducted to test the main and interactive associations of peer victimization and school connectedness on early adolescents’ adjustment problems while controlling for adolescent gender and baseline levels of the outcome variable. Separate models were examined for the conduct problems, depressive symptoms, and social anxiety outcomes. The covariates of gender and the Wave 1 variable corresponding to the outcome were entered in Step 1. Inclusion of the baseline outcome variable allows for the examination of change in that variable of interest. Overt and relational victimization were entered simultaneously in Step 2 to examine the unique contribution of each to the outcome while controlling for the other form of victimization. School connectedness was entered in Step 3. Five two-way interactions were entered individually in Step 4. Three of the two-way interactions (Gender X Each Victimization variable and Gender X School Connectedness) tested whether the contributions of overt victimization, relational victimization, and school connectedness to the conduct problems, depressive symptoms, and social anxiety outcomes varied across boys and girls. The two remaining two-way interactions (School Connectedness X Overt Victimization and School Connectedness X Relational Victimization) tested the hypothesis that school connectedness would buffer the victimization effects. Two three-way interactions (Gender X Overt Victimization X School Connectedness and Gender X Relational Victimization X School Connectedness) were added in Step 5 to assess whether the role of school connectedness as a moderator of the overt and relational victimization effects was consistent across gender.

Results

Prior to testing study hypotheses, zero-order correlations were examined separately for boys and girls (see Table 1 for descriptive statistics and zero-order correlations). Results showed that Wave 1 overt and relational victimization were positively associated with Wave 1 and Wave 2 conduct problems, depressive symptoms, and social anxiety for both boys and girls. Students reporting elevated levels of overt and relational victimization reported elevated levels of externalizing and internalizing problems concurrently and 1 year later. Wave 1 school connectedness was negatively associated with Wave 1 and Wave 2 conduct problems and depressive symptoms for boys and girls and with girls’ Wave 1 social anxiety but not boys’ Wave 1 social anxiety or boys’ and girls’ Wave 2 social anxiety. Thus, students reporting
Table 1. Means, Standard Deviations, and Zero-Order Correlations for Boys’ \((n = 227)\) and Girls’ \((n = 263)\) Study Variables

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Girl, mean values (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Overt victimization</td>
<td>—</td>
<td>.66****</td>
<td>−.20***</td>
<td>.33****</td>
<td>.43****</td>
<td>.46****</td>
<td>.29****</td>
<td>.44****</td>
<td>.31****</td>
<td>1.37 (0.51)</td>
</tr>
<tr>
<td>2. Relational victimization</td>
<td>.65****</td>
<td>—</td>
<td>−.19****</td>
<td>.27****</td>
<td>.43****</td>
<td>.55****</td>
<td>.25****</td>
<td>.42****</td>
<td>.32****</td>
<td>2.06 (0.76)</td>
</tr>
<tr>
<td>3. Time 1 connectedness</td>
<td>−.27****</td>
<td>−.35****</td>
<td>—</td>
<td>−.27****</td>
<td>−.37****</td>
<td>−.14**</td>
<td>−.27****</td>
<td>−.22****</td>
<td>−.08</td>
<td>3.96 (0.62)</td>
</tr>
<tr>
<td>4. Time 1 conduct Problems</td>
<td>.39****</td>
<td>.48****</td>
<td>−.43****</td>
<td>—</td>
<td>.50****</td>
<td>.17***</td>
<td>.46****</td>
<td>.33****</td>
<td>.17***</td>
<td>1.30 (0.30)</td>
</tr>
<tr>
<td>5. Time 1 depression symptoms</td>
<td>.52****</td>
<td>.61****</td>
<td>−.48****</td>
<td>.63****</td>
<td>—</td>
<td>.51****</td>
<td>.45****</td>
<td>.62****</td>
<td>.33****</td>
<td>0.26 (0.26)</td>
</tr>
<tr>
<td>6. Time 1 social anxiety</td>
<td>.38****</td>
<td>.57****</td>
<td>−.11</td>
<td>.31****</td>
<td>.46****</td>
<td>—</td>
<td>.15**</td>
<td>.37****</td>
<td>.61****</td>
<td>2.55 (0.67)</td>
</tr>
<tr>
<td>7. Time 2 conduct problems</td>
<td>.35****</td>
<td>.34****</td>
<td>−.37****</td>
<td>.48****</td>
<td>.41****</td>
<td>.16**</td>
<td>—</td>
<td>.53****</td>
<td>.15**</td>
<td>1.28 (0.31)</td>
</tr>
<tr>
<td>8. Time 2 depression symptoms</td>
<td>.43****</td>
<td>.46****</td>
<td>−.38****</td>
<td>.37****</td>
<td>.68****</td>
<td>.26****</td>
<td>.55****</td>
<td>—</td>
<td>.48****</td>
<td>0.27 (0.28)</td>
</tr>
<tr>
<td>9. Time 2 social anxiety</td>
<td>.35****</td>
<td>.44****</td>
<td>−.01</td>
<td>.26****</td>
<td>.35****</td>
<td>.68****</td>
<td>.21***</td>
<td>.33****</td>
<td>—</td>
<td>2.33 (0.67)</td>
</tr>
<tr>
<td>Boy, mean values (SD)</td>
<td>1.72 (0.78)</td>
<td>1.97 (0.75)</td>
<td>3.70 (0.73)</td>
<td>1.40 (0.39)</td>
<td>0.27 (0.30)</td>
<td>2.41 (0.70)</td>
<td>1.37 (0.36)</td>
<td>0.26 (0.29)</td>
<td>2.14 (0.69)</td>
<td></td>
</tr>
</tbody>
</table>

Note: Girls’ zero-order correlations are above the diagonal and boys’ are below. 

\(*\*p < .05, **p < .01, ****p < .001.\)
elevated levels of school connectedness reported fewer concurrent and subsequent conduct problems and depressive symptoms, and girls reported lower concurrent levels of social anxiety. Examination of the cross-time stability of adjustment problems indicated that the magnitude of correlations (Cohen & Cohen, 1975) were medium ($r > .30$) for boys’ and girls’ conduct problems and large ($r > .50$) for boys’ and girls’ depressive symptoms and social anxiety.

**Predicting Conduct Problems**

Results for the conduct problems outcome indicated that overt victimization and school connectedness uniquely predicted subsequent conduct problems 1 year later, even after partialling out the contributions of baseline levels of conduct problems and gender (see Table 2). Despite a significant zero-order correlation between relational victimization and Wave 2 conduct problems, relational victimization was not uniquely predictive of this outcome when all other variables were included in the model. Early adolescents reporting elevated levels of overt victimization and lower levels of school connectedness reported increases in conduct problems across the 1-year period. The final main effects models (see Step 3) accounted for 27% of the variance in conduct problems, $F(5, 489) = 37.55, p < .001$.

Examination of two- and three-way interactions indicated that the three-way interaction among gender, relational victimization, and school connectedness was only marginally significant. However, the other three-way interaction among gender, overt victimization, and school connectedness was significant. Similar to other nonexperimental studies, the three-way interaction accounted for a small but significant portion of the variance (1%) in conduct problems, $F(1, 480) = 5.47, p < .05$. The methods outlined by Aiken and West (1991) were used to probe the significant interaction. First, we examined gender differences in the association between the Overt Victimization X School Connectedness interaction and the conduct problems outcome. Results indicated that the two-way interaction was significant for girls (beta = −.10, $p < .05$) but not for boys (beta = .02, ns). Probing the significant two-way interaction for girls (see Figure 1) showed that the relationship between overt victimization and Wave 2 conduct problems was positive and significant at low levels of school connectedness (beta = .13, $p < .01$), but not at high levels of school connectedness (beta = −.00, ns). Findings indicated that school connectedness buffered the impact of overt victimization on girls’ subsequent conduct problems.
### Table 2. Examining the Direct and Interactive Contributions of Wave 1 Peer Victimization and School Connectedness to Wave 2 Conduct Problems

<table>
<thead>
<tr>
<th></th>
<th>Wave 2 conduct problems</th>
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<tbody>
<tr>
<td></td>
<td>Step 1</td>
</tr>
<tr>
<td>Time 1 conduct problems</td>
<td></td>
</tr>
<tr>
<td>Gender (0 = girl/1 = boy)</td>
<td>.47****</td>
</tr>
<tr>
<td>Time 1 overt victimization</td>
<td>.06</td>
</tr>
<tr>
<td>Time 1 relational victimization</td>
<td>.15***</td>
</tr>
<tr>
<td>Time 1 school connectedness</td>
<td></td>
</tr>
<tr>
<td>Gender x Overt Victimization</td>
<td></td>
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<tr>
<td>Gender x Relational Victimization</td>
<td></td>
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<tr>
<td>Gender x School Connectedness</td>
<td></td>
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<tr>
<td>Connectedness x Overt Victimization</td>
<td></td>
</tr>
<tr>
<td>Connectedness x Relational Victimization</td>
<td></td>
</tr>
<tr>
<td>Gender x Overt Victimization x Connectedness</td>
<td></td>
</tr>
<tr>
<td>Gender x Relational Victimization x Connectedness</td>
<td></td>
</tr>
</tbody>
</table>

Note: N = 490. All two- and three-way interactions examined separately in the presence of appropriate lower-level interactions and main effects variables.

*p = .063. **p < .05. ***p < .01. ****p < .001.
Predicting Depressive Symptoms

Results for the depressive symptoms outcome indicated that once baseline levels of this outcome variable and gender were partialled out, only overt victimization contributed to Wave 2 depressive symptoms (see Table 3). The main effects model (see Step 3) accounted for 44% of the variance in the Wave 2 outcome, $F(5, 489) = 78.37, p < .001$. However, the overt victimization main effect was qualified by one two-way interaction with gender, which accounted for a small (0.4%) but significant portion of the variance in depressive symptoms, $F(1, 483) = 3.95, p < .05$. Probing the two-way interaction indicated that overt victimization predicted Wave 2 depressive symptoms for girls (beta = .22, $p < .01$), but not for boys (beta = .07, ns). In comparison with their peers, girls reporting elevated levels of overt victimization reported more depressive symptoms. Overt victimization did not predict boys’ depressive symptoms.

Predicting Social Anxiety

Main effect findings for the social anxiety outcome were similar to those for depressive symptoms (see Table 3). Once baseline levels of social anxiety
Table 3. Examining the Direct and Interactive Contributions of Wave 1 Peer Victimization and School Connectedness to Wave 2 Depressive Symptoms and Social Anxiety

<table>
<thead>
<tr>
<th></th>
<th>Wave 2 depressive symptoms</th>
<th>Wave 2 social anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Step 1</td>
<td>Step 2</td>
</tr>
<tr>
<td>Time 1 depressive symptoms</td>
<td>.65****</td>
<td>.56****</td>
</tr>
<tr>
<td>Time 1 social anxiety</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender (0 = girl/1 = boy)</td>
<td>−.02</td>
<td>−.05</td>
</tr>
<tr>
<td>Time 1 overt victimization</td>
<td>.11**</td>
<td>.11**</td>
</tr>
<tr>
<td>Time 1 relational victimization</td>
<td>.08*</td>
<td>.08*</td>
</tr>
<tr>
<td>Time 1 school connectedness</td>
<td>−.01</td>
<td></td>
</tr>
<tr>
<td>Gender X Overt Victimization</td>
<td></td>
<td>−.12**</td>
</tr>
<tr>
<td>Gender X Relational Victimization</td>
<td></td>
<td>−.08*</td>
</tr>
<tr>
<td>Gender X School Connectedness</td>
<td></td>
<td>−.04</td>
</tr>
<tr>
<td>Connectedness X Overt Victimization</td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>Connectedness X Relational Victimization</td>
<td></td>
<td>.04</td>
</tr>
</tbody>
</table>

Note: N = 490. All two- and three-way interactions examined separately in the presence of appropriate lower-level interactions and main effect variables.

*p < .09, **p < .05, ***p < .01, ****p < .001.
and gender were partialled out, only overt victimization made a unique contribution to Wave 2 social anxiety. Unlike the depressive symptoms findings, however, gender was only directly (and negatively) associated with social anxiety but did not moderate the overt victimization effect. Thus, although girls reported more social anxiety than boys, boys and girls reporting elevated levels of overt victimization experienced similar increases in social anxiety across the subsequent 1-year period. The main effects model accounted for 42% of the variance in Wave 2 social anxiety, $F(5, 489) = 72.90, p < .001$. None of the two- or three-way interactions were significant.

**Discussion**

The negative influence of peer victimization in the lives of early adolescents is well documented. Less well studied, however, are the factors that buffer or offset the impact of overt and relational forms of victimization on early adolescents’ adjustment problems. The present study extends existing research by indicating that school connectedness buffered the impact of overt victimization on increases in girls’ conduct problems over a 1-year period. Contrary to expectations, once baseline levels of adjustment problems and all other variables were taken into account, relational victimization did not make a contribution to any of the adjustment problems either directly or in interaction with school connectedness. Moreover, only overt victimization, but not relational victimization or school connectedness, predicted increases in depressive symptoms and social anxiety over the 1-year period, and the overt victimization-depressive symptoms association was significant only for girls.

Consistent with existing cross-sectional and longitudinal research (Crick & Nelson, 2002; Prinstein et al., 2001; Yeung & Leadbeater, 2010) results indicated that early adolescents who are targets of overt victimization report increases in conduct problems over a 1-year period. According to Troop-Gordon and Ladd (2005), victimized youth may develop negative attributions about their peers and react aggressively in retaliation. Although some researchers find that overt victimization may be more relevant to boys’ than girls’ outcomes (Crick & Nelson, 2002), results from the present study indicate that the impact of overt victimization on middle school students’ conduct problems is similar for both genders. Given that relatively little effort has been directed toward examining the role of gender in the overt victimization-conduct problems association, additional research examining gender as a moderator of this association is warranted.

Overt victimization also contributed to subsequent levels of boys’ and girls’ social anxiety. Social anxiety is characterized by fear of negative evaluation
and social avoidance (La Greca & Stone, 1993). Early adolescents who experience victimization are likely to internalize the negative peer messages (Troop-Gordon & Ladd, 2005) explicit in physical and verbal attacks and for this reason develop symptoms of social anxiety. Continued attacks may heighten youths’ fear of negative evaluation and lead to an avoidance of social situations (Storch, Nock, Masia, & Barlas, 2003). Findings corroborate research indicating that overt victimization contributed to boys’ and girls’ fear of negative evaluation and girls’ reports of social avoidance 8 months later in a sample of 12- to 14-year-olds (Vernberg, Abwender, Ewell, & Beery, 1992). Considering the detrimental impact of overt victimization on early adolescents’ externalizing and internalizing problems, it is important to continue to explore factors that may offset victimization effects.

In addition to conduct problems and social anxiety, girls responded to overt victimization with elevations in depressive symptoms over the 1-year period. This finding is consistent with research showing that victimized children are rated by their peers as more sad and by their teachers as more depressed than their nonvictimized peers (Putallaz et al., 2007). There are various explanations for the link between victimization and depressive symptoms. For example, in comparison with their peers, adolescents who are physically and verbally victimized tend to report higher levels of loneliness and poorer self-esteem (Hawker & Boulton, 2003), both of which elevate risk for the development of depressive symptoms (Orth, Robins, & Roberts, 2008; Witvliet, van Lier, Brendgen, Koot, & Vitaro, 2010). The internalization of victimization experiences may be particularly likely to result in negative evaluation of the self, which in turn may result in depressive symptoms (Crick & Bigbee, 1998). That overt victimization was predictive only of girls’ depressive symptoms may be due to girls’ heightened interpersonal vulnerability to internalizing problems. According to Leadbeater, Kuperminc, Blatt, and Hertzog (1999), girls tend to be overly concerned with interpersonal relationships and because of this may avoid open expressions of anger, which in turn contributes to elevations in internalizing problems such as depressive symptoms.

In partial support of the hypothesis that school connectedness would buffer the victimization effects, we found that school connectedness offset the impact of overt victimization on change in girls’ conduct problems. According to social control (Hirschi, 1969) and social development (Catalano et al., 1996) theories, adolescents who are connected to the school are more likely than their peers to refrain from deviating from its norms and expectations and for this reason are at decreased risk for acting out and being aggressive. Alternatively, because students who are connected to the school report better
quality relationships with peers (Battistich et al., 2004), they may obtain the emotional support needed to cope with victimization experiences and in this way escape the development of conduct problems. Consistent with this explanation, Hodges and colleagues (1999) reported that peer victimization was associated with subsequent externalizing and internalizing problems 2 years later, but only for students who did not have a best friend. Finally, being close with teachers may also explain the protective effects of school connectedness. Teachers may provide the emotional support needed to deal with victimization experiences (Yeung & Leadbeater, 2010) and the instrumental support to reduce episodes of peer victimization (Fekkes et al., 2005; Yoon, Barton, & Taiariol, 2004), both of which could result in fewer conduct problems (Yeung & Leadbeater, 2010).

In contrast to the girls’ findings, school connectedness did not act as a protective factor for boys’ peer victimization effects. Other research has also indicated that certain factors were protective for girls’ but not boys’ experiences of peer victimization (Schmidt & Bagwell, 2007). For example, Schmidt and Bagwell reported that friend support buffered the concurrent associations between relational and physical forms of victimization for fourth- and fifth-grade girls’, but not boys’, internalizing problems. Perhaps girls derive the protective benefits of school connectedness because they are more likely than boys to disclose their problems and seek support from teachers and peers in times of stress (see Rose & Rudolph, 2006). Boys may be particularly unlikely to enlist their teachers’ support if they believe that teachers are uninterested or unwilling to prevent peer victimization (Rigby & Bagshaw, 2003). Given that boys report more overt victimization and conduct problems than girls (Crick & Nelson, 2002; Prinstein et al., 2001), other putative moderators of the overt victimization-conduct problems association should be explored. Other variables that have been found to serve a protective function for boys’ victimization experiences include parent emotional support (Yeung & Leadbeater, 2010) and having friends (Hodges et al., 1999), both of which should be included in future investigations.

The most unexpected finding of the present study was that relational victimization did not make a unique contribution to subsequent levels of conduct problems, depressive symptoms, or social anxiety once all other study variables were taken into consideration. This finding is inconsistent with a number of cross-sectional studies (Hawker & Boulton, 2003; Prinstein et al., 2001) and one longitudinal study of adolescents (Yeung & Leadbeater, 2010) indicating that relational victimization was positively associated with externalizing and internalizing problems. However, this finding corroborates two other longitudinal studies showing that relational victimization did not predict
change in depressive symptoms 2 years later (Desjardins & Leadbeater, 2011) or social anxiety 1 year later (Storch, Masia-Warner, Crisp, & Klein, 2005). Taken together these findings indicate that relational victimization may contribute to concurrent levels of adjustment problems but not to change in adjustment problems across time. Perhaps examination of relational victimization at one time point is not sufficient to capture its detrimental impact on subsequent adjustment problems. Rather, it may be necessary to consider its chronic/enduring effects across multiple time points (Rosen et al., 2009). For example, using latent class analysis and four yearly waves of data, Rosen and her colleagues found that fourth-grade children who were chronically victimized (classified as victims for at least three of four waves) showed elevations in internalizing problems that persisted across time. Given the paucity of longitudinal studies on relational victimization, research examining the role of this form of victimization in subsequent adjustment problems across frequent, multiple time points is needed. In particular, researchers should use person-centered approaches to examine how change and stability in relational victimization contribute to change in early adolescents’ externalizing and internalizing problems.

The current findings should be interpreted in light of some limitations. First, only adolescents provided information on study constructs and although there was a 1-year lag between the predictor and outcome variables, the self-report nature of the study increases the possibility that the associations are inflated due to shared method variance. Inclusion of multi-informant data would decrease the possibility of inflated associations. However, it should also be noted that because individual behaviors tend to vary across contexts or situations, self-reports likely reflect the full repertoire of behaviors whereas reports by others may be limited to behaviors specific to particular contexts (Phares, Compas, & Howell, 1989). Self-reports also reflect the personal experiences of youth, which are particularly relevant to their own adjustment problems (Juvonen, Nishina, & Graham, 2001). Second, although our study improves upon cross-sectional work on relational victimization effects, it is limited to two waves of data. Collection of three or more waves would allow for examination of the direct and interactive associations of changes in peer victimization and school connectedness with changes in early adolescents’ adjustment problems. Third, the Conduct Problems subscale had low internal consistency reliability (coefficient alpha = .61 and .66 for Wave 1 and Wave 2, respectively), which may have decreased the possibility of detecting the three-way interaction among gender, relational victimization, and school connectedness on early adolescents’ conduct problems, which was only marginally significant. Future research should replicate findings with a measure.
of conduct problems that has high internal consistency. Finally, participant attrition may limit the generalizability of the findings. Students who participated in both waves of the study, and who were included in the present study, reported fewer conduct problems and depressive symptoms and more connectedness to the school than those who participated only at Wave 1.

Notwithstanding the limitations, the present study extends existing research by indicating that school connectedness acts as a protective factor in the association between overt victimization and change in girls’ conduct problems over a 1-year period. Despite reporting elevated levels of overt victimization in the sixth and seventh grades, girls who felt connected to their schools did not experience gains in conduct problems into the seventh and eighth grades. These findings provide additional evidence for the protective effects of school connectedness and highlight the importance of the school context in middle school students’ adjustment problems. Because chronic forms of peer victimization are particularly detrimental to youths’ outcomes (Biggs et al., 2010), future research should examine the role of protective factors, such as school connectedness, in offsetting the impact of overt and relational forms of victimization that are chronic and persistent across multiple periods of time. Finally, study findings have important implications for school personnel who should be educated to not only identify and intervene in episodes of peer victimization (Yoon et al., 2004) but also work to increase students’ feelings of safety, belonging at school, and teacher support. Teachers, in particular, may play an important role in decreasing externalizing and internalizing problems by providing emotional and instrumental support to students who are targets of peer victimization.

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