Peer group victimization as a predictor of children’s behavior problems at home and in school

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Abstract

This study reports a short-term prospective investigation of the role of peer group victimization in the development of children’s behavior problems, at home and in school. Sociometric interviews were utilized to assess aggression, victimization by peers, and peer rejection, for 330 children who were in either the third or fourth grade (approximate mean ages of 8–9 years old). Behavior problems were assessed using standardized behavior checklists completed by mothers and teachers. A follow-up assessment of behavior problems was completed 2 years later, when the children were in either the fifth or sixth grade (approximate mean ages of 10–11 years old). Victimization was both concurrently and prospectively associated with externalizing, attention dysregulation, and immature/dependent behavior. Victimization also predicted increases in these difficulties over time, and incremented the prediction in later behavior problems associated with peer rejection and aggression. The results of this investigation demonstrate that victimization in the peer group is an important predictor of later behavioral maladjustment.

There is considerable evidence that a small subgroup of children are persistently targeted for systematic verbal and physical abuse by their peers (Olweus, 1978). These chronic victims have recently become the subject of increased empirical inquiry, perhaps because of concern that victimized children may be at risk for later adjustment difficulties. Presumably, such concern is rooted in the correlational finding that children who are frequent victims of peer aggression often experience marked psychological distress (Alsaker & Olweus, 1986; Björkqvist, Ekman, & Lagerspetz, 1982; Olweus, 1978). Researchers have also demonstrated that associated difficulties within the peer group (e.g., peer rejection, aggression) are powerful markers of later disorder (Parker & Asher, 1987; Kupersmidt, Coie, & Dodge, 1990).

Peer Group Victimization as a Predictor of Later Maladjustment

Surprisingly, the longitudinal risk associated with victimization has been directly investigated in only a handful of studies. Much of this work has been concerned with hypothesized causal linkages between victimization and self-reported internal distress. Alsaker and Olweus (1991, 1992), for example, conducted a series of short-term longitudinal studies examining associations between victimization and low self-esteem and depression. These researchers reported that within-
subject changes in self-reported victimization are positively associated with within-subject changes in self-derogation and depressive tendencies.

More recently, Boivin, Hymel, and Bukowski (1995) focused on victimization as a short-term predictor of loneliness and depressive feelings in an elementary school sample. In this investigation, initial levels of exposure to peer group victimization (as assessed via peer nominations) were predictive of increases in self-reported loneliness and depression over a 1-year period. Changes in victimization were not, however, associated with changes in self-reported distress.

Hodges and Perry (1995) conducted a related study with an elementary school sample. These investigators examined relations between victimization, social behavior, and social rejection, over a 1-year period. Increases in peer nomination scores for victimization were found to predict increases in internalizing behavior (assessed via peer nomination items that focused on withdrawal, hovering/peer entry, timid/fearful behavior, and sad facial expressions) and rejection by peers.

The long-term risk associated with peer group victimization has been examined in only one study. Olweus (1993) investigated associations between victimization by peers during childhood and early adolescence, and psychosocial difficulties in young adulthood. In general, individuals who had been identified as childhood victims of bullying were functioning adequately as young adults and did not experience serious maladjustment. Childhood peer victimization was, however, correlated with depressive tendencies and negative self-esteem in early adulthood.

The results of these investigations provide evidence that early exposure to victimization is associated with later loneliness, low self-esteem, and depressive feelings. Because the existing research has focused largely on linkages between victimization and self-reports of internalized difficulties, however, relatively little is known about the impact of victimization on children’s observable behavior. Potential developmental pathways between early victimization and later behavior problems have not been extensively explored by previous investigators. Thus, it is not clear whether the psychological distress experienced by bullied children is accompanied by associated displays of maladaptive behavior.

The current study reports a prospective investigation of the role of victimization in the development of children’s behavior problems. More specifically, we sought to determine whether exposure to high levels of victimization in the peer group leads to increased risk for such difficulties. Our assessments focused on maladaptive patterns of behavior that occur with a low frequency in the general population but occur with greater frequency in samples of clinic-referred children (see Achenbach, 1991a, 1991b). We were generally concerned with clinically relevant outcomes rather than individual differences in normative social behavior (e.g., submissiveness; see Schwartz, Dodge, & Coie, 1993).

**Dimensions of Maladaptive Behavior Outcomes**

Past research on children’s behavior problems has identified two broad-band clusters of problematic behaviors (Achenbach & Edelbrock, 1978). One cluster, which has been labeled “externalizing” behavior, includes aggressive, disruptive, antisocial, and acting-out behaviors (Achenbach, 1966). The other cluster has been labeled “internalizing” behavior and includes inhibited, anxious, or highly withdrawn behaviors (Achenbach & Edelbrock, 1978). In this investigation, predictive relations between peer victimization and each of these two general groupings of problematic child behaviors were examined.

Associations between victimization by peers and internalizing behavior have been investigated by previous researchers (e.g., Hodges & Perry, 1995), but the linkage between victimization in the peer group and the later development of externalizing behavior has not been extensively examined in any existing studies. There is, however, evidence that children who experience interpersonal victimization are at risk for the development of maladaptive social–cognitive biases (e.g., Dodge, Bates, & Pettit, 1990), which may underlie aggressive subtypes of externalizing behavior (see Dodge & Schwartz, in press). Frequently victimized children may also develop
aggressive behavior as a mechanism for defending themselves against their peers (Patterson, Littman, & Bricker, 1967). Moreover, persistent maltreatment by peers could be conceptualized as a childhood stressor (Olweus, 1978), and children tend to react to such stressors with a variety of related behavior problems (Compas, Howell, Pharer, & Williams, 1989).

Our analyses of broad clusters of internalizing and externalizing behaviors were supplemented by examination of more narrow band clusters of behavior problems. Specifically, we focused on victimization as a predictor of impulsiveness and difficulties in attention regulation. These behavior problems have been the focus of much research, separately and jointly (e.g., Hinshaw, 1987) and are strongly associated with peer group maladjustment (Pope, Bierman, & Mumma, 1991). Attention regulation was of particular interest because research in other domains has shown that children may display impaired concentration and increased distractibility as a result of interpersonal victimization (Pynoos & Nader, 1988). Victimization may also lead to the development of more generalized difficulties in self-regulation (Shields, Cicchetti, & Ryan, 1994).

We also examined other behavioral manifestations of problematic social adjustment with peers and adult caregivers, including immature, dependent, and socially unskilled behavior. Socially incompetent behavior is predictive of victimization in the peer group but can also occur as an outcome of persistent maltreatment by peers (Schwartz et al., 1993). Children may modify their social behavior as a result of negative experiences in the peer group (Coie, Dodge, & Kupersmidt, 1990).

**Victimization as an Incremental Predictor of Risk**

Behavior problems in general, and externalizing difficulties in particular, are moderately to highly stable over time (e.g., Eron, 1987; Olweus, 1979). Relations between victimization and later maladjustment might, therefore, reflect the stability of the concurrent behavioral correlates of victimization. Accordingly, we sought to determine whether victimization uniquely increments the prediction of later behavior problems, beyond the prediction associated with initial levels of behavior problems. That is, we examined relations between initial levels of victimization and residualized increases/decreases in behavior problems over time.

In a similar fashion, we examined the association between victimization and later problematic behavior, independent of the predictive contributions of aggression and peer rejection. Previous researchers have found that victimization is associated with both rejection (e.g., Olweus, 1988; Perry et al., 1988; Schwartz et al., 1993) and aggression (e.g., Boldizar, Jones, & Khatri, 1991; Dodge & Frame, 1982; Kupersmidt, Patterson, & Eckholdt, 1989; Patterson et al., 1967; for a contradicting finding see Perry et al., 1988). Rejection and aggression are, in turn, important markers of later maladjustment (Parker & Asher, 1987; Kupersmidt, Coie, & Dodge, 1990). Because our goal was to determine whether victimization uniquely increments the prediction of later behavior problems associated with these two indicators of peer group maladjustment, we examined the correlation between victimization and behavioral outcomes after statistically controlling the variance associated with peer rejection and aggression. Analyses of this nature are important to conduct because future efforts to identify at-risk children could be enhanced by an understanding of the incremental risk associated with each aspect of peer group maladjustment. In addition, a secondary goal of these analyses was to evaluate the evidence that victimization is associated with later difficulties through mechanisms of risk (e.g., shame, trauma) that are distinct from the mechanisms associated with peer rejection (e.g., reduced opportunities for age-appropriate friendships) and aggression (e.g., rebuff by nonaggressive peers, exposure to deviant peers).

**Mediation in the Prediction of Behavior Problems**

Conceptualizations of victimization as a mediating factor in the developmental pathways to later maladjustment can provide a theoretical
alternative to models of direct mechanisms of risk. Boivin et al. (1995), for example, described victimization as an experience within the peer group that mediates the association between early peer rejection, and later loneliness and depression. These researchers hypothesized that abuse by peers is one important mechanism through which rejection leads to internalized distress. That is, Boivin et al. hypothesized that disliked children are victimized by their peers and that the experience of victimization leads these children to become lonely and depressed. As an extension of Boivin et al.’s model, we examined evidence that victimization mediates relations between early peer rebuff and later behavior problems.

The converse model, with social preference mediating the relation between victimization and behavioral maladjustment, was also examined. The premise underlying this model is that victimized children are at risk for later difficulties as a result of the peer group rejection associated with victimization (Perry et al., 1988). From this perspective, overt abuse by peers is not considered to be causally related to later behavioral difficulties. However, other aspects of the experience of being rebuffed by peers are presumed to be mechanisms of risk (e.g., limited opportunities for friendship).

Gender as a Moderator of the Behavioral Outcomes of Peer Victimization

Past researchers have consistently found that there are strong gender differences in the topography and frequency of displayed behavior problems (see Achenbach, 1991a). The form and function of bullying in the peer group is also influenced by the gender of both aggressors and their victims (e.g., Crick & Grotpeter, 1995). It is not yet clear, however, whether there are gender differences in the effects of peer group victimization on development. In fact, to the best of our knowledge, this issue has not been examined in any existing study. Accordingly, in this investigation, we conducted exploratory analyses of the moderating influence of gender on the predictive relation between early victimization in the peer group and later outcomes.

The Current Study

The described research questions were investigated using a multi-informant approach. As in previous studies (e.g., Perry et al., 1988), victimization, peer rejection, and aggression were assessed using a peer nomination questionnaire. Behavior problems, on the other hand, were assessed using standardized checklists (i.e., the Teacher and Parent forms of the Child Behavior Checklist; Achenbach, 1991a, 1991b), developed for assessment of clinically relevant behavior problems. To obtain data on adaptive functioning in both the home and school contexts, checklists were completed by both mothers and teachers.

Method

Overview

This study was completed within an ongoing longitudinal investigation of the development of children’s social difficulties (Dodge et al., 1990). Two separate cohorts, recruited in consecutive years, are participating in this project. Data collection began in the summer before the children entered kindergarten. Children’s social and behavioral adjustment, at home and in school, has been obtained on a continuing basis. The current study examined relations between peer victimization in the fifth year of the project, and teacher and parent reports of behavior problems in the seventh year of the project. At the first of these two time points (T1), cohort one was in the fourth grade (mean age of 9 years old) and cohort two was in the third grade (mean age of 8 years old). At the second time point (T2), cohort one was in sixth grade (mean age of 11 years old) and cohort two was in fifth grade (mean age of 10 years old).

Subject recruitment and retention

The initial sample was recruited just prior to kindergarten enrollment in three geographic regions (Bloomington, IN; Knoxville, TN; Nashville, TN). Parents were approached by research staff and asked to participate in a longitudinal study of child development. About 75% of the parents consented.
A total of 585 children participated in the study (308 in cohort 1, 277 in cohort 2; 304 boys, 281 girls). In the fifth year of data collection (i.e., the T1 data point), 530 of these children were retained in the study and assessed by either teachers, mothers, or peers. However, due to resource limitations, we were able to obtain peer nomination data for only 389 of these children (comparable peer relations data were collected from teachers for the remaining subjects but those data will not be examined in the current report). In the seventh year of data collection (i.e., the T2 data point), 330 of these 389 children (85%) were assessed by either teachers or mothers (294 children were assessed by both teachers and mothers, 36 children were assessed by teachers only). However, the number of subjects varied across analyses due to missing data.

Of the children in the final subsample, 23.6% were from minority racial or ethnic backgrounds (almost all African American). The majority of the children were from lower-to-middle socioeconomic class backgrounds.

Assessment of victimization, aggression, and social preference

Victimization, aggression, and peer rejection were assessed using peer nomination data, collected in year 5 of the study. In each subject’s classroom, all peers whose parents consented participated in a group-administered sociometric interview (consent rates in each classroom exceeded 80%). These children were read standardized instructions by a trained research assistant. Each child was given a copy of a class roster and asked to nominate up to three peers who fit each of three victimization descriptors (i.e., “gets picked on,” “gets teased,” “gets hit or pushed”) and each of three aggression descriptors (“start fights,” “says mean things,” “gets mad easily”). The children also nominated liked and disliked peers. All items were read aloud by the research assistant.

For each child, a victimization score was calculated from the sum of the total nominations received for the three victimization items (α = .82) and an aggression score was calculated from the sum of the three aggression items (α = .89). The total number of received liking and disliking nominations was also calculated. All scores were standardized within classroom. A social preference score, which served as an index of peer group acceptance/rejection, was then calculated as the standardized difference between the liking score and disliking scores (Coie, Dodge, & Coppotelli, 1982).

Teacher reports of behavior problems

Each year of the study, teachers completed the well-validated Teacher Report Form of the Child Behavior Checklist (TRF; Achenbach, 1991a). The TRF contains eight internally consistent subscales. Three of these subscales (Withdrawn, Anxious/Depressed, Somatic Complaints) are summed to generate the Internalizing scale, and two of the subscales (Delinquency, Aggression) are summed to generate the Externalizing scale. The Externalizing and Internalizing scales were derived via second-order factor analysis.

Two additional subscales, which are not components of the Internalizing and Externalizing clusters (as indicated by the factor analysis; see Achenbach 1991a), were also of interest in the current investigation: Attention Problems and Social Problems. The Attention Problems subscale contains 11 items that assess impulsiveness and attention regulation difficulties (e.g., “Can’t concentrate, pay attention for long,” “Can’t sit still”). The Social Problems subscale contains 8 items that assess immature, dependent, or socially incompetent behavior with adults and peers (e.g., “Clings to adults or too dependent,” “Prefers playing with younger children”). Three of these 8 items assess peer group attitudes toward the child rather than the child’s behavioral difficulties (i.e., “Doesn’t get along with peers,” “Gets teased by peers,” “Not liked by peers”). These items, which are conceptually similar to the predictor variables, were not included in the final calculation of Social Problems subscale sum (α = .66 for the remaining five items).

Stability of the four behavior problem scores (from T1 to T2) in the current sample was as follows: $r = .52$ for Externalizing, $r =$
.27 for Internalizing, \( r = .48 \) for Attention Problems, \( r = .41 \) for Social Problems. It should be noted that the Internalizing score derived from the TRF was less stable than related self-report scores described in previous studies (e.g., Alsaker & Olweus, 1991).

**Mother reports of behavior problems**

Mothers completed the well-validated parent report form of the Child Behavior Checklist (CBCL; see Achenbach, 1991b). The CBCL contains eight internally consistent subscales that correspond to the subscales on the TRF. The Internalizing, Externalizing, Attention Problems, and Social Problems scores were examined in this study. As is described above, the three peer rejection and victimization items were dropped from calculation of the Social Problems sum (\( \alpha = .60 \) for the remaining five items). Stability of the scores (from T1 to T2) was: \( r = .67 \) for Externalizing, \( r = .65 \) for Internalizing, \( r = .73 \) for Attention Problems, \( r = .63 \) for Social Problems.

**Results**

**Overview**

Analyses were conducted using the raw scale sum scores from the TRF and CBCL. Square-root transformations were applied to each of the variables, in order to normalize distributions (Neter, Wasserman, & Kunter, 1989). However, analyses conducted with and without transformation yielded similar results. For ease of interpretation, the analyses of the untransformed scores will be presented.

Holm’s (1979) modified Bonferoni-type correction procedure was utilized to prevent inflation of Type I error rates. In this sequential procedure, critical values levels are adjusted based on the rank order of the effects. In a series of analyses containing \( j \) tests, each effect is assigned a rank value, \( k \), with \( k = 1 \) for the weakest effect, and \( k = j \) for the strongest effect. Effects are then evaluated at a critical value of \( \alpha/k \). Separate corrections were applied to the three predictor variables (i.e., social preference, victimization, aggression) within each series of analyses of the four outcome variables (i.e., externalizing, internalizing, attention dysregulation, social problems).

Separate analyses were conducted for mother and teacher reports of behavior problems. There is evidence that children’s behavior varies systematically across the home and school contexts (Ledingham & Younger, 1985). Moreover, mother-teacher agreement ranged from minimal to modest in our data (correlations ranged from \( r = .15 \)–.41).

Relations between each of the three indicators of T1 adjustment in the peer group and each of the dimensions of behavioral outcome were examined. However, we choose to report, but not interpret, results of analyses that focused on associations between peer-reported T1 aggression and teacher/mother reports of T1 and T2 Externalizing. Because aggression is a subtype of externalizing behavior (Achenbach, 1966), these results are probably not theoretically meaningful but, instead, represent a partial assessment of agreement between peer report and teacher/mother report data.

**Relations among the social adjustment indicators**

Relations among the three indicators of social adjustment with peers were assessed with a series of correlations, conducted with the effects of cohort and gender partialled out. Victimization was negatively correlated with social preference, \( (r(384) = -.58, p \leq .0001) \) and positively correlated with aggression \( (r(384) = .36, p \leq .0001) \). Aggression and social preference were also negatively correlated, \( (r(384) = -.46, p \leq .0001) \).

**Concurrent and predictive relations between peer group adjustment and behavior problems**

Concurrent and predictive relations between victimization, social preference, aggression, and teacher reported behavior problems were examined in a series of correlations with gender and cohort effects partialled out (see Table 1). Each of the three indicators of T1 adjustment in the peer group was significantly correlated with each of the T1 and T2 teacher...
Table 1. Correlations between T1 indicators of peer group adjustment and mother and teacher reports of T1/T2 behavior problems

<table>
<thead>
<tr>
<th>T1 Peer Nomination Social Adjustment Indicator</th>
<th>Teacher report</th>
<th>Mother report</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Externalizing problems</td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>.26*** .57*** −.27***</td>
<td>.19** .37*** −.25***</td>
</tr>
<tr>
<td>Time 2</td>
<td>.13** .49*** −.19***</td>
<td>.24*** .38*** −.28***</td>
</tr>
<tr>
<td>Internalizing problems</td>
<td>Time 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.19*** .16** −.11*</td>
<td>.10 .03 −.16*</td>
</tr>
<tr>
<td></td>
<td>Time 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.11* .13* −.20***</td>
<td>.06 .03 −.12*</td>
</tr>
<tr>
<td>Attention problems</td>
<td>Time 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.30*** .29*** −.31***</td>
<td>.29*** .21*** −.31***</td>
</tr>
<tr>
<td></td>
<td>Time 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.20*** .31*** −.32***</td>
<td></td>
</tr>
<tr>
<td>Social problems</td>
<td>Time 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.36*** .27*** −.26***</td>
<td>.19** .12** −.23***</td>
</tr>
<tr>
<td></td>
<td>Time 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.29*** .21*** −.31***</td>
<td></td>
</tr>
</tbody>
</table>

Note: For all correlations, the effects of gender and cohort were statistically controlled. n = 287 for mother report data and 325 for teacher report data.

*Significant effect at the .05 level; **significant effect at the .005 level; ***significant effect at the .0005 level.

reported behavior problem scores. The correlations between the T1 peer group adjustment indicators and T2 teacher reported behavior problems were, however, small in magnitude.

Correlations between the T1 peer group adjustment indicators and mother reports of T1 and T2 behavior problems yielded a similar pattern of findings. As is shown in Table 1, each of the three T1 peer group adjustment indicators was significantly correlated with Externalizing and Attention Problems at T1 and T2. T1 social preference and T1 victimization were also correlated with Social Problems at both time points. Interestingly, T1 vic-

timization was not significantly correlated with mother reported Internalizing at either time point.

Predictive relations between victimization and changes in behavior problems over time

In order to examine predictive relations between T1 victimization and increases in behavior problems over time, a series of partial correlation coefficients was generated. For each of these correlations, the T2 behavior problem score was predicted from T1 victimization, partialling out the corresponding T1
Table 2. Partial correlations between T1 victimization and T2 behavior problems

<table>
<thead>
<tr>
<th>Variables Partialled Out of Correlation with T1 Victimization</th>
<th>T1 Behavior Problems</th>
<th>T1 Aggression</th>
<th>T1 Social Preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>T2 teacher report</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Externalizing</td>
<td>.01</td>
<td>−.05</td>
<td>.02</td>
</tr>
<tr>
<td>Internalizing</td>
<td>.07</td>
<td>.07</td>
<td>.01</td>
</tr>
<tr>
<td>Attention problem</td>
<td>.06</td>
<td>.10</td>
<td>.01</td>
</tr>
<tr>
<td>Social problem</td>
<td>.16**</td>
<td>.24**</td>
<td>.14*</td>
</tr>
<tr>
<td>T2 mother report</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Externalizing</td>
<td>.15*</td>
<td>.13*</td>
<td>.09</td>
</tr>
<tr>
<td>Internalizing</td>
<td>−.01</td>
<td>.05</td>
<td>−.01</td>
</tr>
<tr>
<td>Attention problem</td>
<td>.13**</td>
<td>.25***</td>
<td>.12*</td>
</tr>
<tr>
<td>Social problem</td>
<td>.17**</td>
<td>.24***</td>
<td>.15*</td>
</tr>
</tbody>
</table>

Note: n = 287 for mother reports and 325 for teacher reports.

*A An effect that failed Holm’s (1979) modified Bonferroni-type correction procedure.

*Significant effect at the .05 level; **significant effect at the .005 level; ***significant effect at the .0005 level.

behavior problem score, gender, and cohort. As is depicted in Table 2, T1 victimization predicted residualized increases in teacher and mother reports of Social Problems, and mother reported Externalizing and Attention Problems. However, the correlation for mother reported Attention Problems failed Holm’s (1979) correction.

Incremental predictive relations between victimization and behavior problems

Analyses were then conducted in order to determine whether T1 victimization increments the prediction of T2 behavior problems beyond the prediction associated with T1 aggression. A series of partial correlation coefficients was generated with each T2 behavior problem score predicted from T1 victimization, partialling out T1 aggression, gender, and cohort. As is depicted in Table 2, three significant partial correlations were yielded. T1 victimization predicted teacher and mother reports of T2 Social Problems, and mother reports of T2 Attention Problems, even after the variance from T1 aggression had been statistically controlled.

We also examined predictive relations between T1 victimization and T2 behavior problems, independent of T1 social preference. Partial correlations were generated, predicting each T2 behavior problem from T1 victimization, partialling out T1 social preference, gender, and cohort. As depicted in Table 2, these analyses yielded only two significant effects. T1 victimization predicted teacher and mother reported T2 Social Problem scores, even after the variance from T1 social preference had been statistically controlled.

Victimization and social preference as mediators in the prediction of social problems

The meditational roles of social preference and victimization in the prediction of behavior problems were examined using criteria specified by Baron and Kenny (1986). According to these authors, the following criteria must be met in order to establish mediation (as modeled via regression analysis): the mediator must be significantly associated with the outcome, the predictor must be significantly associated with the outcome, and the mediator must significantly account for variance in the outcome above and beyond the variance assoc-
ciated with the predictor. Consistent with Baron and Kenny’s theoretical discussion of mediation, we also required that the predictor–outcome relation be nonsignificant, once the mediator–outcome relation was statistically controlled.

We considered these criteria with regard to the hypothesized model of social rejection predicting behavior problems through the mediator of victimization in a series of distinct analytic steps (for a similar approach to the analysis of mediation see Boivin et al., 1995). First, we examined the correlations between each of the T2 behavior problem scores (the outcome), T1 victimization (the mediator), and T1 social preference (the predictor). These correlations were discussed above. With the exception of mother reported T2 Internalizing, each of the behavior problems scores met these criteria. Next, for each T2 behavior problem score that was significantly correlated with both T1 victimization and T1 social preference, we conducted a regression analysis. The T2 behavior problem score was predicted from gender and cohort, T1 social preference, and T1 victimization. The mediational model was considered supported if T1 social preference did not significantly predict variance in the T2 behavior problem beyond the variance accounted for by T1 victimization, and T1 victimization predicted variance in the T2 behavioral outcome beyond the variance predicted by T1 social preference. We considered these criteria to be met if the \( \beta \) coefficient for T1 victimization was significant, and the \( \beta \) coefficient for T1 social preference was not. As depicted in Table 3, the specified mediational model was not supported for any of the teacher or mother report T2 behavioral outcome variables.

The converse model, with victimization predicting behavior problems through the mediator of peer rejection, was evaluated in a similar manner. The regression models described above were consulted and the mediational model was considered to be supported if the beta coefficient for T1 social preference was significant, and the \( \beta \) coefficient for T1 victimization was not significant. As is presented in Table 3, the pattern of findings was consistent with the specified mediational model for teacher and mother reported T2 Externalizing, teacher reported T2 Internalizing, and teacher reported T2 Attention Problems.

**Gender as a moderator of the behavioral outcomes of victimization**

In order to examine the moderating influence of gender on the behavioral outcomes of victimization, a series of exploratory regression analyses were conducted. Each of the teacher and mother rated T2 behavior problem scores was predicted from cohort, gender, T1 victimization, and the interaction between gender and victimization. We focused on the interaction term as an indication that gender serves a moderating role (i.e., the slope of the regression line differs as a function of gender; Baron & Kenny, 1986). These analyses yielded one significant interaction. The correlation between T1 victimization and mother reported T2 Attention Problems, \( t(1, 282) = -2.83, p \leq .01 \), differed as a function of gender. Analyses conducted separately for each gender indicated that the correlation between T1 victimization and mother reported T2 Attention Problems (with cohort partialled out) was stronger for boys, \( r(145) = .40, p \leq .0001 \), than girls, \( r(138) = .16, \) n.s.

The moderating influence of gender on the prediction of residualized changes in behavior problems was also examined. Each of the teacher and mother rated T2 behavior problem scores was predicted from the corresponding T1 behavior problem score, gender, T1 victimization, and the interaction between gender and victimization. These analyses yielded significant gender by victimization interaction terms for residualized increases in mother rated Attention Problems, \( t(1, 282) = -2.83, p \leq .01 \), and mother rated Social Problems, \( t(1, 282) = -2.70, p \leq .01 \). Analyses conducted separately for each gender indicated that the correlation (with cohort partialled out) between T1 victimization and residualized increases in Attention Problems was larger for boys, \( r(145) = .21, p \leq .01 \), than girls, \( r(138) = .00, \) n.s. Similarly, the correlation between T1 victimization and residualized increases in Social Problems was larger for boys, \( r(145) = .31, p \leq .005 \), than girls, \( r(138) = .03, \) n.s.
Table 3. Summary of regression models testing mediation of T1 victimization and T1 social preference in prediction of T2 behavior problems

<table>
<thead>
<tr>
<th>Predictors in Equation</th>
<th>Cohort</th>
<th>Gender</th>
<th>Victimization</th>
<th>Social Preference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>sr²</td>
<td>β</td>
<td>sr²</td>
<td>β</td>
</tr>
<tr>
<td>T2 teacher report</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Externalizing</td>
<td>.000</td>
<td>-.041</td>
<td>.040***</td>
<td>-.217***</td>
</tr>
<tr>
<td>Internalizing</td>
<td>.000</td>
<td>-.010</td>
<td>.001</td>
<td>-.035</td>
</tr>
<tr>
<td>Attention problem</td>
<td>.000</td>
<td>.002</td>
<td>.056***</td>
<td>-.237***</td>
</tr>
<tr>
<td>Social problem</td>
<td>.000</td>
<td>.000</td>
<td>-.045</td>
<td>.018*</td>
</tr>
<tr>
<td>T2 mother report</td>
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<td></td>
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<td></td>
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<tr>
<td>Externalizing</td>
<td>.000</td>
<td>.009</td>
<td>.014*</td>
<td>-.118*</td>
</tr>
<tr>
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<td>.040***</td>
<td>-.202***</td>
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<tr>
<td>Social problem</td>
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<td>-.047</td>
<td>.001</td>
<td>.013</td>
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</table>

Note: For each regression model, all predictor variables were entered simultaneously. A model predicting Mother reports of T2 Internalizing was not conducted because this behavior outcome score was not significantly correlated with either T1 victimization or T1 social preference. sr² is the squared semi-partial correlation coefficient, which represents the percentage of variance in the behavioral outcome score accounted for by each individual parameter. n = 287 for mother reports and 325 for teacher reports.

*An effect that failed Holm’s (1979) modified Bonferroni-type correction procedure.

**Significant effect at the .05 level; ***significant effect at the .005 level; ****significant effect at the .0005 level.

Discussion

The results of this investigation provide evidence that children who are frequently bullied by their peers are at risk for maladaptive behavior problems at home and in school. Peer victimization in middle childhood is associated with behavioral maladjustment on both a concurrent and prospective basis (i.e., across a 2 year period). Even after the influence of potential confounding variables (e.g., aggression, peer rejection, early behavioral maladjustment) is statistically controlled, victimization in the peer group remains an important predictor of behavioral difficulties in some domains. Thus, the stressful experience of victimization by peers probably plays an incremental role in the development of behavioral maladjustment.

Victimization by peers appears to be more strongly associated with externalizing/undercontrolled behavior problems than internalizing/overcontrolled difficulties (as assessed by teacher/mother reports). Behavior checklist scores for scales that assessed broad-band externalizing difficulties, attention dysregulation/impulsiveness, and immature/dependent social behavior were concurrently associated with peer nomination victimization scores. However, correlations between victimization and scores for scales that assess broad-band externalizing behaviors were relatively small in magnitude (in fact, mothers’ reports of internalizing were not significantly correlated with victimization).

This pattern of results should not be viewed as inconsistent with the existing evidence that victimized children suffer from low self-esteem, depression, and other forms of internalized psychological distress (e.g., Alsaker & Olweus, 1986; Olweus, 1978). Previous bully/victim researchers have examined children’s self-reports of internal difficulties (e.g., Alsaker & Olweus, 1991, 1992), whereas the current study focused on overtly observable aspects of such difficulties (e.g., frequent crying), as reported by teachers and parents. These two methods of assessment do not yield identical information (see Achenbach, 1991a, 1991b). One potential implication of these data, however, is that parents and teachers may not always be aware of psychological distress that is experienced by bullied children. These children may be unlikely to dis-
play observable signs of negative reactions to their peer group difficulties.

Similarly, our results do not contradict previous findings that bullied children often display a withdrawn/submissive behavioral profile (e.g., Hodges & Perry, 1995; Olweus, 1978; Schwartz et al., 1993). Past research has focused primarily on dimensions of behavioral inhibition that are normally distributed in nonclinical samples (e.g., submissive social behavior; Schwartz et al., 1993). However, a wider range of behaviors was assessed in this study, including clinically relevant behaviors that occur with a low frequency in the normative population (e.g., unusually fearful or anxious behavior, frequent somatic complaints without known medical cause). The association between victimization and these low base rate internalizing behaviors does not appear to be strong.

These findings do suggest, however, there may be stronger relations between victimization by peers and externalizing behaviors than has previously been thought. Past investigators have concluded that victimization and aggression are orthogonal dimensions of peer group maladjustment (e.g., Perry et al., 1988) for all but a small subgroup of “aggressive victims” (Olweus, 1978). However, we found that victimization was concurrently associated with both peer-reported aggression, and teacher and mother reports of externalizing behavior.

Victimization in the early elementary school peer group was a significant predictor of behavior problems 2 years later. Early victimization predicts increased Social Problems, as rated by both mothers and teachers, and increased Externalizing and Attention Problems, as rated by mothers. Thus, early peer victimization is a risk factor for later increases in these problems and may play in incremental role in their development.

Victimization also predicted variance in later immature/dependent social behavior and attention dysregulation (as reported by mothers), independent of variance predicted by social rejection and aggression. Knowledge of a child’s status with regard to victimization can, therefore, provide unique incremental information in the prediction of that child’s later adjustment in specific behavioral domains. Another important implication of these findings is that, to some degree, there are distinct underlying processes linking each aspect of peer group maladjustment to later behavioral difficulties.

The finding that each dimension of peer group maladjustment uniquely increments the prediction of later behavioral difficulties could also aid in identification of the subgroups of bullied children who are at particularly high risk for later behavioral difficulties. Children who are high on multiple indices of peer group maladjustment would appear to be at greater risk. This is an important conclusion because not all victimized children are rejected nor are all rejected children victimized (Kupersmidt et al., 1989; Perry et al., 1988). Similarly, some victimized children display high rates of aggressive behavior, whereas other victims do not (Olweus, 1988).

How might peer victimization exacerbate a child’s behavioral maladjustment? For some children, maladaptive changes in behavior may reflect a negative reaction to persistent maltreatment by peers (see Coie et al., 1990). Schwartz et al. (1993) have proposed a model wherein children’s social skill deficits lead to victimization by peers, which in turn predicts further changes in behavioral tendencies. The current findings would appear to be consistent with this model.

Interpersonal victimization may also have a pernicious impact on a child’s behavior through an influence on underlying social cognitive structures. Dodge (1990) has hypothesized that victimization in the home may result in hostile attributional biases and a characteristic hypervigilant and reactively aggressive style of social interaction. Perhaps victimization in the peer group is associated with similar difficulties.

This investigation also provided evidence that the relation between early victimization and some classes of later behavioral problems is at least partially mediated by other aspects of problematic peer group adjustment. Analyses guided by Baron and Kenny’s (1986) recommendations were supportive of a model in which victimization predicts later behavioral difficulties partially through the mediation of
peer rejection. We can speculate that this occurs through mechanisms such as reduced opportunity for friendship. Given the concurrent nature of our assessment of peer rejection and victimization, however, alternative models also remain viable. In any case, it does appear that the developmental processes linking early victimization by peers to later problematic behavior are complex and involve multiple aspects of children's social maladjustment.

These results demonstrate that victimization by peers is an important risk factor in later behavioral difficulties. However, the conclusions that can be drawn from this preliminary investigation are limited by aspects of the study design. Because the focus of this investigation was on early victimization as a predictor of later difficulties, victimization was only assessed at one time point. Therefore, we were unable to examine relations between changes in victimization and changes in behavior, or to explore the role of the stability of victimization in predicting later difficulties. This design also precludes strong statements regarding causal relations between behavior and victimization.

It should also be noted that the objective of this investigation was to examine the short-term prediction of behavioral difficulties. Similar to previous researchers (e.g., Alsaker & Olweus, 1991, 1992), we examined relations between victimization and children’s maladjustment over a relatively small period of time (i.e., 2 years). An important area of inquiry for future investigators will be linkages between victimization and longer-term risk.

Our analyses also failed to yield a clear pattern of findings regarding the influence of gender on the behavioral outcomes of victimization. There was some evidence that the association between victimization and specific classes of maladaptive behavioral outcomes (i.e., attention dysregulation) is stronger for boys than girls. However, the pattern of interaction effects was generally weak and was not consistent across informants. Future research on the risk associated with victimization in the peer group should examine the role of gender more extensively. For this work, it would be advantageous to include measures of “relational” forms of peer group victimization (Crick & Grotpeter, 1995) as well as the more overt forms of aggression examined in the current report. It may be the case, for example, that victimization via “relational aggression” is more strongly predictive of negative outcomes for one gender than the other.

Research on the risks associated with victimization in the peer group could also benefit from a categorical focus on the persistently victimized child. In the current investigation, we chose to conceptualize victimization as a dimensional/continuous variable in order to facilitate analyses of important mediating and moderating factors. However, researchers have demonstrated that a relatively small subgroup of children experience persistent and extreme abuse by peers (Olweus, 1988). Moreover, there is growing evidence that there are behaviorally distinct subgroups of victimized children (e.g., Stephenson & Smith, 1989).

In conclusion, the results of this investigation demonstrate that frequent victimization in the peer group is an important predictor of later behavioral difficulties. Furthermore, victimization independently increments the prediction of later behavior problems associated with peer group rejection and aggressive behavior. Future researchers could extend this work by focusing on longer-term outcomes, the role of gender, and causal relations.

References


tion as a consequence of victimization. Paper presented at the Biennial Meetings of the International Society for the Study of Behavioral Development, Minneapolis, MN.


