

Relational Aggression in Children With Preschool-Onset Psychiatric Disorders

Andy C. Belden, Ph.D., Michael S. Gaffrey, Ph.D., Joan L. Luby, M.D.

Objective: The role of preschool-onset (PO) psychiatric disorders as correlates and/or risk factors for relational aggression during kindergarten or first grade was tested in a sample of 146 preschool-age children (age 3 to 5.11 years). **Method:** Axis-I diagnoses and symptom scores were derived using the Preschool Age Psychiatric Assessment. Children's roles in relational aggression as aggressor, victim, aggressive-victim, or nonaggressor/nonvictim were determined at preschool and again 24 months later at elementary school entry. **Results:** Preschoolers diagnosed with PO psychiatric disorders were three times as likely as the healthy preschoolers to be classified aggressors, victims, or aggressive-victims. Children diagnosed with PO disruptive, depressive, and/or anxiety disorders were at least six times as likely as children without PO psychiatric disorders to become aggressive-victims during elementary school after covarying for other key risk factors. **Conclusions:** Findings suggested that PO psychiatric disorders differentiated preschool and school-age children's roles in relational aggression based on teacher report. Recommendations for future research and preventative intervention aimed at minimizing the development of relational aggression in early childhood by identifying and targeting PO psychiatric disorders are made. *J. Am. Acad. Child Adolesc. Psychiatry*, 2012;51(9):889–901. **Key Words:** relational aggression, preschool psychiatric disorders, aggressive-victim, bullying

The experience of peer aggression as perpetrator, victim, or both during childhood is one of the strongest social predictors of developmental difficulties and maladjustment in later childhood.¹⁻⁶ Historically, investigations of peer aggression have focused on physical forms in males during middle childhood and adolescence.⁷⁻¹² Physical aggression involves the intent to hurt, harm, or injure others using physical force, such as hitting, kicking, punching, pushing, and forcibly taking things away from peers.^{13,14} To assess nonphysical forms of peer aggression, thought to be more characteristic of females, Crick and Grotpeter developed and tested an instrument that reliably measured and differentiated physical and relational forms of peer aggression.¹⁵ Relational aggression is defined as the intent to hurt or harm others through nonphysical manipulation, threat, or damage to close relationships, friendships, and/or social status.^{16,17} That is, relational aggression is the expression of aggression and manipulation of others through the use of social inclusion or exclusion.

Crick *et al.* have examined the factor structure of physical versus relational peer aggression.¹⁸ Results indicated that despite several overlapping characteristics, physical and relational forms of peer aggression have discrete factor structures. When examined simultaneously, measures of relational aggression accounted for unique portions of variance in social, emotional, and cognitive development outcomes above and beyond physical peer aggression.¹⁸⁻²⁰ Although a rich body of literature has informed patterns of physical aggression in early childhood,^{21,22} the pioneering work of Crick *et al.* examining relational aggression resulted in a more comprehensive understanding of physical and social forms of aggression throughout development.²³ These findings also provided initial evidence that relational forms of peer aggression occur much earlier in development than originally thought.²⁴⁻²⁷

Relational Aggression Among Preschool-Age Children

Only recently has the study of relational aggression broadened from an almost exclusive focus

on middle childhood and adolescence to the preschool-age period of development. Despite a broad understanding of overt physical aggression among preschoolers, it had been widely accepted that relational forms of peer aggression were a relatively uncommon occurrence among preschoolers (for exception, refer to Bjorkqvist *et al.*⁹). Because researchers had historically focused on measuring overt aggression, it was thought that peer aggression in preschoolers was predominantly exhibited by boys in the form of physical aggression.²⁸⁻³⁰ Findings consistently demonstrated that preschool boys compared to girls were in fact more physically aggressive during peer interactions.^{31,12} These findings led many researchers to assume that the social lives of preschool-age girls were largely devoid of peer aggression. A second problematic assumption held before the early 1990s was that preschoolers did not possess the social, emotional, and cognitive capacities to use more sophisticated forms of peer aggression characteristic of relational aggression. Both assumptions were challenged when empirical studies began examining relational and physical forms of peer aggression simultaneously within samples of preschool children.^{26,31}

Studies using multiple methods and informants have demonstrated validity, reliability, and short-term stability of relational aggression measured in preschool children.^{12,26,27,31-33} Relationally aggressive behaviors in preschool-age children tend to be overt and direct (and therefore easily observed) as opposed to indirect, discrete, or subtle, as more often manifest in older children. An example of overt relational aggression used by preschool-age children would be a child putting their hands over their ears indicating they are actively ignoring and rejecting a peer. Another example is when an aggressor directly tells the victim that he/she will not be invited to his/her party unless the victim does what the aggressor demands. Indirect relationally aggressive behaviors more commonly used by school-aged children include behaviors such as disseminating malicious rumors about victims to peers. Although studies examining relational aggression in preschoolers have indicated both genders engaged in this behavior, relational aggression is used more frequently by preschool girls than boys.^{8,29-32,34-36} Preschool girls engage in and experience more sophisticated, complex, and socially directed forms of

peer relational aggression.^{12,37-39} It has been estimated that 70% of girls' aggressive behaviors directed at peers are relationally focused and nonphysical.³² By measuring children's use of physical and relational forms of peer aggression, several studies have illustrated developmental continuity of peer aggression from early to middle childhood for both boys and girls.⁴⁰⁻⁴²

Peer Aggression in Preschoolers

Monks *et al.* reported that, in their study, 25% of preschool children were aggressors and 22.1% were victims of peer aggression.⁴³ Preschool children who are persistently aggressive toward peers ("aggressors") show greater oppositionality, poorer school adjustment, greater emotion dysregulation, and more symptoms of inattention and depression; they are also more likely to become antisocial in adolescence.^{6,44-47} Being persistently victimized during early childhood has been associated with poorer school performance and impaired social adjustment, greater loneliness, and increased social withdrawal and isolation, as well as episodic reactive aggression.^{19,48-50} Of particular importance is a distinct subgroup of children who are aggressors as well as victims of peer aggression, referred to as "aggressive-victims."

Preschoolers classified by their teachers and/or peers as being aggressive-victims differ in several important ways from peers classified as being "pure-aggressors" or "pure-victims." Aggressive-victims are more likely to show reactive aggression, in contrast to pure-aggressors, who proactively use aggression to achieve a goal.⁵¹ Compared to "pure-aggressors" or "pure-victims," aggressive-victims are described as being more anxious, physically reactive, and annoying to other children.⁵² Findings have also indicated that aggressive-victims have distinct temperamental characteristics that differ from children classified as being pure-aggressors or pure-victims. Aggressive-victims are more likely than pure-victims and pure-aggressors to be impulsive, irritable, and impatient during interactions with peers.⁵³ The temperamental and behavioral characteristics of aggressive-victims are often the least socially desirable and are known risk factors for continued involvement in peer aggression. The maladaptive behavioral and temperamental characteristics of aggressive-victims, as well as findings that these children often have significantly greater functional and developmental impairments, sup-

port the finding of increased risk for and/or rates of mental illness in this group.^{54,55}

The prevalence of being an aggressive-victim is estimated to be approximately 6% to 8% in young children.^{56,57} Results from kindergarten students showed that 18% of boys and 8% of girls were classified as aggressive-victims using teacher-reports.⁵⁸ In addition to experiencing more severe developmental impairment, aggressive-victims have a greater risk for manifesting psychiatric problems.^{59,60} Prior results demonstrated that after controlling for pre-existing adjustment problems at age 5 years, aggressive-victims compared to aggressors or victims had significantly higher internalizing and externalizing behavior problem mean scores by the age of 7 years.⁵⁶ Aggressive-victims are consistently reported as having the highest level of maladjustment among all children involved in peer aggression, exhibiting more symptoms of both internalizing and externalizing problems.^{54,55}

PO Psychiatric Disorders as Risk Factors for Relational Aggression in Preschool

Of particular public health concern are findings that school children involved in relational aggression are more likely to manifest an array of mental health problems that often continue into adolescence and adulthood.^{59,61-63} Findings from older children suggest that correlations between relational aggression and mental disorders may exist before children enter elementary school.^{5,6,64} To date, studies that have examined emotional and behavioral problems associated with relational aggression in preschool children have predominantly used more general dimensional measures of internalizing or externalizing symptoms but have not examined more specific categorical *DSM-IV* psychiatric disorders.²⁵ A mounting body of literature has established that reliable and valid *DSM-IV* Axis-I psychiatric disorders can be identified in children as young as 3 years (reviewed by Egger *et al.*⁶⁵). The importance of early identification of psychiatric disorders during the preschool period continues to gain attention based on new findings demonstrating the developmental continuity of these disorders from preschool to early adolescence.⁶⁶ The preschool period represents a unique phase of life during which rapid social development takes place and patterns of social interactions begin to form in the context of the “semi-structured” environment of the preschool classroom. Therefore,

the social milieu of the preschool classroom, playground, and lunchroom provide the stage for the emergence of aggressor and victim related social behavior. This preschool classroom also represents a unique opportunity for observations of these behaviors, as a result of minimal self-monitoring, limited cognitive capacities to anticipate future consequences of misbehavior, and decreased awareness of social norms previously described. Following this, identifying and characterizing associations between early onset mental illness and relational forms of aggression may be key to inform how these early behaviors influence each other developmentally.⁶⁷ Thus, the current study tested expected associations and group differences between children diagnosed with preschool-onset (PO) psychiatric disorders and their roles in relational aggression at preschool and 2 years later in elementary school.

METHOD

Recruitment and Participants

This investigation used data from a National Institute of Mental Health (NIMH)-funded study entitled Validation of Preschool Depressive Syndromes (PDS). This ongoing, longitudinal, multi-method and multi-informant (i.e., parents, children, and teachers) study was designed to examine the nosology, etiology, and course of PO major depressive disorder [MDD] (additional recruitment details in Luby *et al.*⁶⁸). Between May 2003 and March 2005, caregivers with children between 3.0 and 5.11 years of age were recruited from pediatricians’ offices, daycare facilities, and preschools in a large metropolitan community using the Preschool Feelings Checklist (PFC).⁶⁹ The PFC is a brief validated screening tool for early-onset emotional disorders. Excluded were children with chronic medical illnesses, neurological problems, pervasive developmental disorders, and language and/or cognitive delays, as well as those out of the study age range. It is important to note that the recruitment techniques used in this study were designed to oversample for preschoolers with or at risk for MDD and/or attention-deficit/hyperactivity disorder (ADHD). Therefore, diagnostic data from the present study cannot be used to calculate the prevalence rates of PO psychiatric disorders in the general population.

A total sample of 306 caregiver-child dyads agreed to participate and completed their baseline assessment in a laboratory. Of the total sample of 306 children at baseline, a subsample of 202 children had complete teacher data. Children who stayed at home with a primary caregiver accounted for 80 of the total 104 children with missing teacher data on the MacArthur Health and Behavior Questionnaire—Teacher Version (HBQ-T; described in Measures section). The remaining group of 24 children

TABLE 1 Demographic and Diagnostic Characteristics at Baseline

Demographics	Preschool NonAggressor/ NonVictim (n = 69)	Preschool Aggressor (n = 28)	Preschool Victim (n = 28)	Preschool Aggressive-Victim (n = 21)
Gender, n				
Male	33	12	14	11
Female	36	16	14	10
Age, years, n				
3	17	3	7	6
4	40	13	15	8
5	12	12	6	7
Ethnicity, n				
Black	17	7	11	8
White	45	19	11	9
Other	6	2	6	4
Income, n				
0–20K	10	6	7	8
20,001–40K	11	5	6	4
40,001–60K	8	4	6	1
>60,001K	35	10	8	7
Highest Level of Education, n				
High school diploma or less	7	4	4	3
Some college/2-year degree	20	11	14	9
4-Year degree	16	5	5	6
Schooling beyond 4-year degree	26	8	5	3
Diagnostic Characteristics at time 1 (n)				
Healthy (72)	37	15	15	5
Disruptive only (17)	4	2	4	7
Anxiety only (16)	10	3	2	1
Depression only (9)	5	2	0	2
Disruptive and anxiety (4)	2	0	0	2
Disruptive and depression (10)	3	2	3	2
Anxiety and depression (5)	4	0	0	1
Disruptive and anxiety and depression (13)	4	4	4	1

Note: Differences in sample sizes and percentages not equal to 100% in text and in this table are the result of missing data from individual participants.

with missing teacher data were the result of caregivers refusing to consent for us to contact children's preschool teachers or teachers failing to return a completed HBQ-T. For the cross-sectional analyses at baseline, children had to be enrolled in formal (i.e., home daycare facilities were not included) preschool or pre-kindergarten program. Of the 202 children with completed HBQ-T data at baseline, 42 children were attending home daycare. A total of 14 children were already enrolled in kindergarten at baseline (i.e., did not have preschool data available). Thus, the final sample size of preschoolers eligible for analysis was 146. Children attending preschool or pre-kindergarten programs at baseline and who were enrolled in kindergarten or first grade 24 months after their baseline assessment were examined in the longitudinal analyses (n = 121). The 25 children with missing data at school age had either dropped out of the study or had teachers who

did not complete the HBQ-T. Descriptive data for demographic and diagnostic variables used in the analyses are included in Table 1.

Procedure and Measures

Parent-child dyads participated in a 3- to 4-hour annual assessment. During this time, primary caregivers (94% mothers) were interviewed about their children's behaviors, emotions, and age-adjusted manifestations of psychiatric symptoms. Caregivers were also asked for permission to contact children's current or most recent teacher. Teachers of consenting families were contacted within 7 to 10 days of the annual assessment and were sent a brief study description, directions for participating, and questionnaires to be completed.

Ratings of Childhood Aggressors and/or Victims

Children were classified as aggressors, victims, aggressive-victims, or nonaggressor/nonvictims using preschool and elementary school teachers' reports on the MacArthur Health and Behavior Questionnaire-Teacher Version (HBQ-T 1.0).⁷⁰ Aggressors (i.e., perpetrators of relational aggression) were assessed using six items from the HBQ-T, as follows: when mad at peer, keeps that peer from being in the playgroup; tries to get others to dislike a peer; tells others not to play with or be a peer's friend; tells peers that he/she won't play with peers or be peers' friend unless peers do what he/she asks; verbally threatens to keep a peer out of the playgroup if the peer does not do what he/she wants; and tells a peer that the peer will not be invited to the aggressor's birthday party unless that peer does what the aggressor wants. For each item, teachers rank (0 = never; 1 = sometimes; 2 = often) children's engagement in relational aggression as aggressors. The six items are averaged together to create a relational aggressor mean score for each child.

Victims of relational aggression were identified using four items from the peer victimization subscale of the HBQ-T, as follows: other children refuse to let him/her play with them; is actively disliked by other children, who reject him/her from their playgroup; is picked on by other children; and is teased and ridiculed by other children. For each item, teachers rated children as 1 = not at all like this; 2 = very little like; 3 somewhat like; 4 = very much like. Mean scores were computed to provide continuous victim scores.

To create a categorical aggressor variable, at preschool and again during elementary school, children with an aggressor mean score in the top 20th percentile and a victim score in the bottom 80th percentile were classified as aggressors. Children scoring in the top 20th percentile of the victim subscale and in the bottom 80th percentile of the aggressor subscale were classified as victims. Children who scored in the top 20% of the aggressor and victim scales were classified as aggressive-victims. Children who scored in the bottom 80th percentile on both the aggressor and victim subscales of the HBQ-T were in the nonaggressor/nonvictim group. This method resulted in four mutually exclusive groups at preschool and elementary school: aggressor, victim, aggressive-victim, or nonaggressor/nonvictim. Similar classification methods for differentiating aggressors, victims, and aggressive-victims have been used and validated in several publications from independent studies.^{31,61}

The functional impairment subscale of the HBQ-T was also used as a covariate in the final set of analyses. Impairment was included as a covariate to test whether the hypothesized effect of PO psychiatric disorder on school age relational aggression behaviors remained significant after controlling for the potential effects of social impairment associated with children's psychiatric disorder present at school age. The HBQ-T

impairment subscale uses teacher report to measure functional impairment that children are exhibiting in the classroom. This subscale of the HBQ-T includes seven items that are rated using a likert scale (0 = none, 1 = a little, and 2 = a lot). Studies reporting the psychometric properties of this subscale suggest that it has moderate to strong internal consistency and acceptable test-retest reliability across reporters and age ranges.

PO DSM-IV Psychiatric Disorders

The Preschool Age Psychiatric Assessment (PAPA) is an interviewer-based semi-structured diagnostic interview with established test-retest reliability that is designed for use in caregivers of children 2.0 to 6.0 years of age.⁶⁵ Although psychometric properties of the PAPA have been published only for children up to age 6 years, it is important to note that the PAPA has been successfully used in children up to age 8.0 by a number of research groups. The PAPA includes all relevant *DSM-IV* criteria and their age-appropriate manifestations. Diagnoses are derived by computer algorithms that apply all of the *DSM-IV* criteria (with the exception of duration criteria for MDD). The PAPA rates the intensity, frequency, and duration of symptoms as well as impairment from symptoms in three separate contexts (i.e., at home, at school, and elsewhere). Interviewers undergo 5- to 7-day training, and practice assessments are done until proficiency is achieved. Interviews were audio-taped for later quality control and interviewer calibration. A master coder reviewed 20% of each interviewer's PAPA assessments; when discrepancies arose, items were re-coded in consultation with a senior child psychiatrist. To maintain high levels of interviewer reliability, weekly coding meetings were conducted with a "master" rater as recommended by the authors of the measure.

Data Analyses

One-way univariate analysis of variance tests, χ^2 analyses, and correlation analyses were conducted to examine variation and/or differences in relational aggression during preschool and elementary school that were associated with demographic variables. To examine the stability of children's mean aggressor and victim scores at preschool and school age, Pearson correlation matrices were calculated. Multinomial logistic regression analyses were conducted to test whether children diagnosed with PO psychiatric disorders were significantly more or less likely than healthy peers to be classified as aggressors, victims, aggressive-victims, or nonaggressors/nonvictims during preschool and/or elementary school. For the final set of analyses, multinomial logistic regression analyses were conducted using covariates previously found to influence children's involvement in relational aggression during elementary school. The following co-

variables were tested: children's mean aggressor scores and victim scores obtained at preschool, schoolchildren's current level of functional impairment (teacher report on the HBQ-T), as well as the total number of disruptive, anxiety, and depression symptoms experienced at school-age. The criterion variable for each model was children's role in relational aggression as an aggressive-victim versus nonaggressor/nonvictim during elementary school.

RESULTS

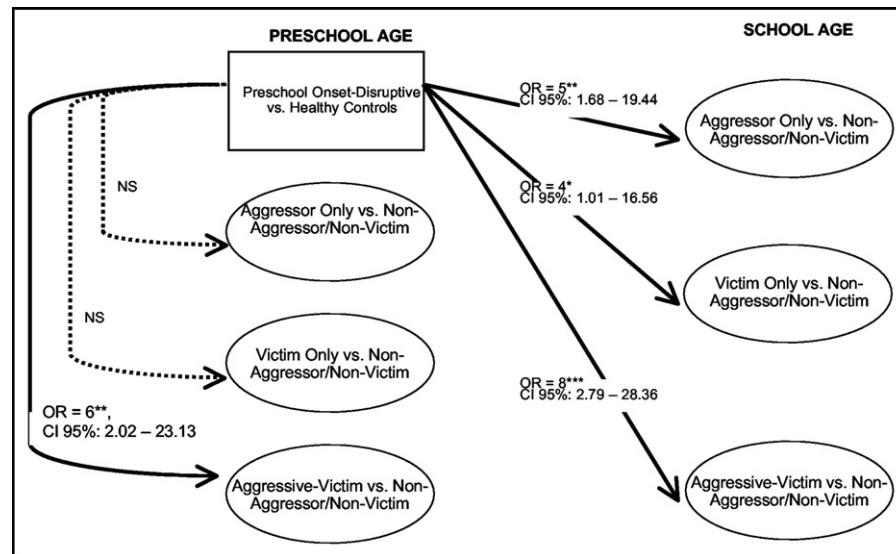
Demographic and Diagnostic Characteristics at Baseline and Preschoolers' Relational Aggression
Children's roles in relational aggression (i.e., aggressor, victim, aggressive-victim or nonaggressor/nonvictim) during preschool and/or elementary school did not differ in relation to children's gender, age, ethnic origin, family gross income or their primary caregivers' highest level of education achieved. At baseline, 74 children had a diagnosis of 1 or more preschool-onset psychiatric disorder. A total of 42 children had a disruptive disorder that, for the current study, included ADHD as well as oppositional defiant disorder (ODD) and/or conduct disorder (CD). A total of 37 children had an anxiety disorder that included generalized anxiety disorder (GAD), social anxiety disorder (SAD), and/or post-traumatic stress disorder (PTSD); 41 children had been diagnosed with MDD. The remaining 72 preschoolers had no psychiatric disorders and comprised the healthy comparison group for the following analyses. Table 1 provides a further breakdown of diagnostic group and comorbidity.

Descriptive Analyses Examining the Stability of Children's Involvement in Relational Aggression
Pearson correlations indicated that children's aggressor scores at preschool were significantly associated with their aggressor scores at school age ($r = .34; p < .001$). Similarly, children's mean scores for the victim subscale of the HBQ-T at preschool were significantly associated with their mean scores on the victim subscale 2 years later at school age ($r = .31; p < .01$). Descriptive analyses revealed that approximately 60% of preschool nonaggressor/nonvictims continued to be classified this way by teachers when measured again 24 months later. The remaining 40% of preschoolers classified as nonaggressor/non-

victim had a different classification once they were school age, 17% became aggressors, 8% were classified as victims at school age, and 15% were aggressive-victims at school age. In all, 45% of children classified as aggressors during preschool were classified as nonaggressor/nonvictim when measured at school age. Of the children classified as aggressors during preschool, 20% went on to be classified as aggressors once they were school age. The remaining 35% of preschool aggressors were classified as aggressive-victims when measured at school age. Results indicated that 36% of children classified as victims during preschool were classified as nonaggressor/nonvictims at school age. Of the remaining children classified as victims during preschool, 14% became aggressors, 22% retained their victim status, and 28% were classified as aggressive-victims when measured at school age. Among the children classified as aggressive-victims during preschool, 36% were also classified as aggressive victims at school age. Of the remaining 64% of children who were aggressive-victims during preschool, their classifications changed as follows once they were school age: 29% were nonaggressor/nonvictim, 21% were aggressors, and 14% were classified as victims based on teacher-report at school age.

Presence versus Absence of PO Psychiatric Disorders and Children's Roles in Relational Aggression during Preschool and at School Age
Preschoolers' roles in relational aggression differed significantly between diagnostic groups at preschool [$\chi^2 (3, n = 146) = 6.68, p < .05$]. Compared with healthy peers, preschoolers diagnosed with one or more PO psychiatric disorder were significantly more likely to be classified into one of the following mutually exclusive groups during preschool: aggressive-victim (odds ratio [OR] = 3.75, 95% CI = 1.22-11.23, $p < .05$), aggressor (OR = 3.61, 95% CI = 1.06-12.87, $p < .05$), or victim (OR = 3.64, 95% CI = 1.04-12.87, $p < .05$) when using nonaggressor/nonvictim as the reference group. Most notably, findings indicated that among all preschoolers identified as being aggressive-victims ($n = 21$), 76% had PO psychiatric disorder(s). In sum, children with PO psychiatric disorders were on average at least three times as likely as healthy same age peers to be classified by teachers as being either aggressors, victims, or aggressive-victims during preschool.

FIGURE 1 Preschool-onset (PO) disruptive disorders and children's relational aggression status at preschool and school age. Note: NS = not significant; OR = odds ratio. * $p < .05$, ** $p < .01$, *** $p < .001$.



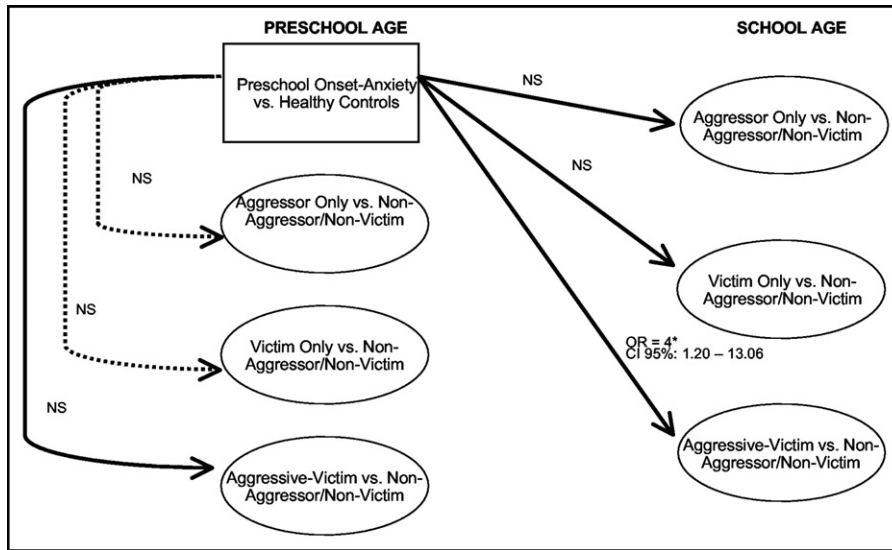
Children's relational aggression roles were measured again 2 years after their baseline diagnostic assessment when they were in elementary school. Schoolchildren's relational aggression roles during elementary school differed significantly in relation to their history of PO psychiatric disorder(s) [$\chi^2(3, n = 121) = 10.46, p < .01$]. Schoolchildren diagnosed with PO psychiatric disorders compared to schoolmates with no history of PO psychiatric disorders were twice as likely to be classified as aggressors than as non-aggressors/nonvictims (OR = 2.88, 95% CI = 1.01-7.80, $p < .05$). Schoolchildren with PO psychiatric disorder(s) were four times as likely as healthy peers to be classified as aggressive-victims compared to a nonaggressors/nonvictims (OR = 4.21, 95% CI = 1.60-11.09, $p < .01$). Schoolchildren's risk for being classified as victims of relational aggression did not differ significantly between diagnostic groups.

PO Disruptive, Anxiety, or Depressive Disorders and Children's Relational Aggression Roles during Preschool and Elementary School
PO Disruptive Disorders. Preschoolers' roles in relational aggression differed between healthy and disruptive disordered groups [$\chi^2(3, n = 116) = 10.94, p < .01$]. Compared with healthy peers, preschoolers with PO disruptive disorder(s) were significantly more likely to be classified as aggressive-victims than aggressors (OR = 4.51, 95%

CI = 1.17-17.37, $p < .05$), victims (OR = 3.20, 95% CI = 0.89-12.02, $p < .05$), or nonaggressor/nonvictims. It is important to note that disruptive preschoolers were equally as likely as healthy preschoolers to be classified by their teachers as "pure aggressors" or "pure victims" when non-aggressors/nonvictims status was used at the reference group (Figure 1).

As seen in Figure 1, when measured again during elementary school, schoolchildren previously diagnosed with PO disruptive disorder(s) versus schoolchildren who were healthy throughout preschool differed significantly in their relational aggression roles [$\chi^2(3, n = 100) = 17.89, p < .001$]. Schoolchildren diagnosed with PO disruptive disorders were more than eight times as likely as children in the healthy comparison group to be classified as aggressive-victims. Schoolchildren with PO disruptive disorders were more than five times as likely as healthy peers to be identified by teachers as aggressors. In contrast, schoolchildren with PO disruptive disorders were four times less likely than healthy peers to be classified as victims when using nonaggressor/nonvictim as the reference group.
PO Anxiety Disorders. Preschoolers' relational aggression roles did not differ significantly between anxiety disordered and healthy preschoolers (Figure 2). When testing PO anxiety disorders as predictors of relational aggression roles at school age, the overall χ^2 testing for proportional differ-

FIGURE 2 Preschool-onset (PO) anxiety disorders and children’s relational aggression status at preschool and school age. Note: NS = not significant; OR = odds ratio. * $p < .05$.

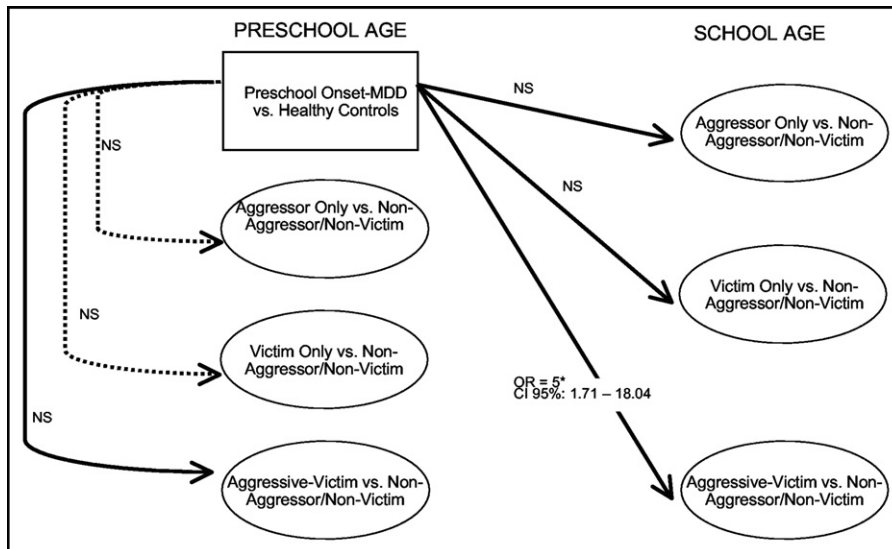


ences in the relational aggression roles of schoolchildren who were healthy during preschool versus classmates with a history of PO anxiety disorders was non significant ($\chi^2 (3, n = 89) = 5.47, p = .07$). However, one pairwise result was significant and is worth noting. That is, schoolchildren diagnosed with PO anxiety disorders were four times as likely as schoolmates who were healthy preschoolers to be classified as

aggressive-victims than nonaggressors/nonvictims (Figure 2).

PO MDD. Healthy and PO MDD preschoolers did not differ in their relational aggression roles during preschool (Figure 3). Roles in relational aggression at school age differed between schoolchildren who were healthy as preschoolers compared with schoolmates previously diagnosed with PO MDD [$\chi^2 (3, n = 90) = 8.55, p < .05$].

FIGURE 3 Preschool-Onset (PO) major depressive disorder (MDD) and children’s relational aggression status at preschool and school age. Note: NS = not significant; OR = odds ratio. * $p < .05$.



School-age children with PO MDD were five times more likely than the healthy comparison group to be classified as aggressive-victims than nonaggressor/nonvictims during elementary school (Figure 3).

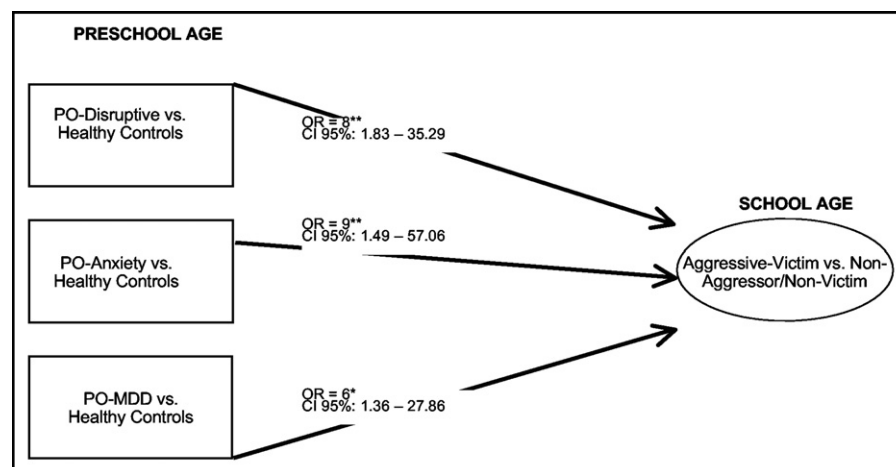
PO Psychiatric Disorders as Predictors of Later Aggressive-Victim Status: Controlling for Relational Aggression Roles at Preschool, Psychopathology, and Functional Impairment at School Age

The above findings indicated that schoolchildren with a history of PO disruptive, PO anxiety, and PO MDD were significantly more likely than their healthy peers to be classified as aggressive-victims than nonaggressor/nonvictims. To further explore this finding, a series of multinomial logistic regression analyses were conducted to test whether PO psychiatric disorders continued to predict schoolchildren's relational aggression roles when covarying for children's relational aggression behaviors during preschool as well as schoolchildren's current experience of psychiatric symptoms and associated functional impairments. The following covariates were tested: schoolchildren's mean aggressor and victim scores obtained at preschool, schoolchildren's current level of functional impairment (teacher

report), as well as the total number of disruptive, anxiety, depression symptoms experienced at school age. The criterion variable for each model was children's role in relational aggression as an aggressive-victim versus nonaggressor/nonvictim during elementary school.

Results indicated that PO disruptive disorders continued to be a significant predictor of the aggressive-victim classification during elementary school ($p < .01$). Specifically, schoolchildren with PO disruptive disorder were eight times as likely as schoolchildren who were healthy preschoolers to be classified as aggressive-victims after including covariates in the model (Figure 4). Similarly, schoolchildren with a history of PO MDD were significantly more likely than the healthy comparison group to be classified as aggressive-victims [χ^2 (df 21, n = 84) = 37.53, $p < .01$]. Schoolchildren diagnosed with PO MDD were six times as likely as schoolchildren who were healthy as preschoolers to be classified as aggressive-victims after covariates were included in the model (Figure 4). Schoolchildren with a history of PO anxiety disorders compared with schoolchildren who were healthy preschoolers were also significantly more likely to be classified by teachers as aggressive-victims during elementary school [χ^2 (df 21, n = 76) = 42.81, $p < .01$].

FIGURE 4 Preschool-onset (PO) psychiatric disorders and likelihood of being an aggressive-victim at school age after covarying for school-age psychiatric disorder severity, functional impairment, and mean aggression and victim scores at preschool. Note: Results illustrated included the following covariates in the final model: (1) Aggressor score on the MacArthur Health and Behavior Questionnaire—Teacher Version (HBQ-T) at preschool age; (2) Victim score on HBQ-T at preschool age; (3) Functional impairment score on HBQ-T at school age; (4) Total number of disruptive disorder symptoms endorsed at school age; (5) Total number of anxiety disorder symptoms endorsed at school-age; (6) Total number of major depressive disorder (MDD) symptoms endorsed at school age. OR = odds ratio. * $p < .05$, ** $p < .01$.



Compared with schoolchildren who were healthy in preschool, schoolchildren diagnosed with PO anxiety disorders were nine times more likely to be aggressive-victims than nonaggressor/nonvictims after including covariates.

DISCUSSION

The association between childhood-onset psychiatric symptoms/disorders and involvement in overt or physical forms of peer aggression (e.g., bullying) throughout development has been well established.^{59,61} However, a growing body of literature suggests that covert and nonphysical forms of aggression, such as relational aggression, have equally deleterious effects on children's development, occur at relatively high frequencies, and start as early as the preschool period of development. With a few exceptions, a relatively limited number of studies have examined whether PO psychiatric disorders demonstrate associations with nonphysical forms of peer aggression consistent with findings examining physical forms of peer aggression (e.g., bullying). The aim of the present study was to examine whether preschool onset psychiatric disorders were concurrently related to preschoolers' involvement in relational aggression and/or predicted their later involvement in relational aggression at school age.

Despite overlap between peer focused aggressive behaviors and ODD symptoms (e.g., spiteful and vindictive) as well as CD symptoms (e.g., bullying), findings have illustrated that as few as 6% of children with ODD and/or CD also had high relational aggression scores (i.e., 1 SD above the sample mean). In contrast, the same study found that 14% of children without a diagnosis of ODD and/or CD had high relational aggression scores.⁷¹ Despite children diagnosed with ODD and/or CD being more likely to be involved in relational aggression, the majority of youth engaged in high levels of relational aggression do not meet symptom criteria for ODD and/or CD.

In the current study preschoolers diagnosed with ADHD, ODD, and/or CD were no more likely than healthy same-age peers to be classified as "pure-aggressors or victims" of relational aggression during preschool. However, disruptive-disordered preschoolers were six times as likely as healthy same age peers to be classified as aggressive-victims. This suggests that preschoolers with disruptive disorders are fre-

quently the perpetrator and victim of relational aggression. Once disruptive-disordered preschoolers were schoolchildren, they were significantly more likely than schoolmates without a history of PO disruptive disorders to be "pure-aggressors" and aggressive-victims but significantly less likely to be victims of relational aggression. This finding is consistent with results from older children, which have demonstrated that as aggressors grow in physical strength and join social groups with other aggressors, their likelihood of becoming victimized decreases. This may be the result of other aggressors becoming more fearful and avoidant of confrontation with known aggressors.⁷²

Arguably the most interesting and novel findings to emerge in the current study were children diagnosed with PO anxiety and/or depressive disorders were no more likely than healthy preschoolers to be involved in relational aggression as aggressors or victims during preschool or at school age. However, this same group of children (with PO anxiety and/or depressive disorders) were more than six times as likely to be classified aggressive-victims at school age compared to healthy preschoolers. These results emerged after controlling for children's involvement in relational aggression as aggressors and victims during preschool as well as their current disruptive, anxiety, and depressive symptoms and their functional impairment scores at school age. The high risk for this unique outcome (aggressive-victim) is also consistent with prior findings that have demonstrated during the beginning years of elementary school, aggressive-victims show significantly greater internalizing symptoms than aggressors and victims of relational aggression. In contrast to these findings, studies that measure aggressor and victim scores/status only (omitting an aggressive-victim score/group) in relation to children's concurrent anxiety and depressive symptoms typically demonstrate that increases in anxiety and depression are positively correlated with children's victim scores. These findings related to early-onset anxiety and depression in the context of the extant literature raise several interesting questions for future research. Of particular interest is the need for future studies examining the possibility of differing trajectories for children's involvement in relational aggression as a function of varying onsets as well as current severity of specific psychiatric disorders.

Findings examining gender differences in relational aggression during preschool have been mixed.^{9,17,23,29} Crick *et al.* found that preschool girls were more likely than boys to be involved in relational aggression.²⁶ In contrast, other studies including the current study did not detect gender differences.^{39,64} When examining gender differences in a sample of youth 9 to 17 years old, Keenan *et al.* concluded that gender similarities, and not differences in levels of relational aggression, were the norm.⁷¹ Although speculative, the lack of gender differences in the present study may have been related to the high percentage of children with PO psychiatric disorders in the sample studied. It is possible that when including children with disruptive and other PO psychiatric disorders boys and girls' use of relational forms of aggression may be more equally distributed.

The present study has several limitations. First the HBQ-T has no standardized cut-points for determining children's involvement in relational aggression as either perpetrator or victim. Consistent with prior literature, a 20% cutoff was used at each time point. Thus, children were assigned aggressor/victim status based on observed levels of aggression in the existing sample. Nonetheless, children's aggressor/victim status at time 1 was significantly predictive of their aggressor/victim status when measured 24 months later and was associated with later mental health problems. Second, there were high rates of psychiatric disorder comorbidity in the present sample. Given the relatively small sample size examining co-occurring disorders in relation to children's aggressor/victim status resulted in group sizes too small for statistical comparisons. As a result, the current findings should be interpreted with a degree of caution. Third, children's *DSM-IV* diagnostic group status (based on primary caregiver reports) as well as their aggressor/victim status (based on teacher report) was measured using a single informant. Although a multi-informant method is preferred for both constructs, caregiver report for assessing research based diagnostic status in preschool-age children remains the current standard in the field. Along these same lines, peer ratings and observational measures, in conjunction with teacher ratings, would have been ideal for assessing preschoolers and schoolchildren's involvement in relational aggression. Given the young age of the sample, there are numerous challenges

when using peer-based nominations of relationally aggressive behaviors. Arguably, teacher report of preschoolers' involvement in relational aggression may provide the most reliable source of information related to these forms of peer aggression in very young children. Finally, the recruitment methods used to obtain the present sample limits the generalizability of the current findings to the general population of children. However, findings from the current study warrant future studies in community-based and or clinical samples to test the generalizability of these findings to both healthy and clinical populations of young children.

Findings suggest that increased attention to the detection of psychiatric disorders in preschool populations, which currently remain undetected in the vast majority of affected preschoolers, may be a promising strategy for identifying those at high risk for later involvement in relational aggression as well as providing a target for preventative intervention for schoolchildren's involvement in relational aggression. These findings underscore two potentially key public health principles. The first is the importance of identifying and treating psychiatric disorders during the preschool period, given the established association to poorer peer relationship outcomes.^{30,73,74} Second is the importance of evaluating relational aggression behaviors as early as the preschool period, given their clear manifestation at this early juncture and the possibility of more effective intervention during this time of rapid social and emotional development.⁴⁰ In addition to this, and relevant to the prevention of school-age relational aggression, is the need to account for history of early-onset mental disorders in preschool populations as a possible mechanism to prevent later aggressive-victim behaviors. That is, the current findings suggest that the manifestation of psychiatric symptoms in preschool children may provide an observable and targetable antecedent to more severe forms of relational aggression (i.e., bullying) in schoolchildren. Based on the current findings we conclude that efforts to reduce relational aggression in schools should focus on the earliest possible detection of risk for or early onset psychopathology. Interventions designed to specifically target these subgroups, and focus on relieving psychiatric symptoms, appear to be indicated. Such strategies may in turn minimize the occurrence of relational aggression at

school age, an increasingly serious public health concern.²⁰ &

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Correspondence to Andy C. Belden, Ph.D., Washington University School of Medicine, Department of Psychiatry, Box 8134, 660 S. Euclid, St. Louis, MO 63110; e-mail: beldena@psychiatry.wustl.edu

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