

UCSF

UC San Francisco Previously Published Works

Title

Informant-specific reports of peer and teacher relationships buffer the effects of harsh parenting on children's oppositional defiant disorder during kindergarten

Permalink

<https://escholarship.org/uc/item/11w018f7>

Journal

Development and Psychopathology, 32(1)

ISSN

0954-5794

Authors

Roubinov, Danielle S
Boyce, W Thomas
Bush, Nicole R

Publication Date

2020-02-01

DOI

10.1017/s0954579418001499

Peer reviewed



Published in final edited form as:

Dev Psychopathol. ; : 1–12. doi:10.1017/S0954579418001499.

Informant-specific reports of peer and teacher relationships buffer the effects of harsh parenting on children's oppositional defiant disorder during kindergarten

Danielle S. Roubinov, W. Thomas Boyce, and Nicole R. Bush

Departments of Psychiatry and Pediatrics, University of California, San Francisco

Abstract

Harsh and restrictive parenting are well-established contributors to the development of oppositional defiant disorder (ODD) among children. However, few studies have explored whether interpersonal relationships that develop outside the family environment attenuate the risk for ODD that is associated with harsh parenting. The current study tested multireporter measures of teacher–child closeness and peer acceptance as moderators of the association between harsh parenting and children's ODD as children's social worlds widen during the kindergarten year ($N = 338$ children, 48% girls, M age = 5.32 years). Harsh parenting interacted with *peer nominations* of peer acceptance and *children's report* of teacher–child closeness to predict children's ODD symptoms in the spring, adjusting for fall symptoms. Children exposed to harsh parenting exhibited greater symptom increases when they were less liked/accepted playmates and in the context of lower teacher–child closeness. However, harsh parenting was not associated with symptom change among children with higher levels of peer-nominated acceptance and those who reported closer relationships with teachers. There were no significant interactions using *teacher's report* of peer acceptance or *teacher's report* of teacher–child closeness. Findings highlight positive peer and teacher relationships as promising targets of intervention among children exposed to harsh parenting and support the importance of assessing multiple perspectives of children's social functioning.

Keywords

externalizing behavior; parenting; peer relationship; teacher–child relationship

Oppositional defiant disorder (ODD) is one of the most common childhood behavior disorders, with prevalence rates in community samples of young children ranging from 6.6% (Egger & Angold, 2006) to 13.4% (Lavigne, LeBailly, Hopkins, Gouze, & Binns, 2009). Early onset ODD may be particularly problematic, as symptomatology becomes increasingly resistant to treatment after age 6 (Speltz, McClellan, DeKlyen, & Jones, 1999) and is associated with elevated risk for poor outcomes in adolescence and adulthood, including antisocial behavior, anxiety, depression, substance abuse, criminal offenses and incarceration, and conduct disorder (Aebi, Plattner, Metzke, Bessler, & Steinhausen, 2013;

Burke, Rowe, & Boylan, 2014; Costello, 2007; Nock, Kazdin, Hiripi, & Kessler, 2007; Whittinger, Langley, Fowler, Thomas, & Thapar, 2007). Developmental cascade models suggest that contextual, parental, and child risk factors operate through interactive, multilevel pathways to influence onset and change of ODD symptoms over time (Dishion & Patterson, 2016). Cascading effects are also pertinent to the study of resilience, highlighting how protective processes in one system can “spillover” to promote positive adaptation when another system is at risk (Masten & Cicchetti, 2016). In the current study, we explored the potential protective role of positive peer and teacher relationships for the development of ODD symptoms among children exposed to harsh parenting in the family system.

The association between negative parenting practices, including harsh, rejecting parenting and punitive parental discipline (Alink et al., 2009; Romano, Tremblay, Boulerice, & Swisher, 2005), and children’s oppositional behavior problems has a long history in the mental health literature (Baumrind, 1967; Hinshaw & Lee, 2003). As described by coercion theory, harsh parenting contributes to children’s aggression and conduct problems through a pattern of problematic parent–child interactions whereby caregivers acquiesce to children’s defiance and aggression, inadvertently reinforcing such aversive behaviors (Patterson, 1982). As caregivers become increasingly frustrated and rely on harsh parenting practices, a cycle of negative parent–child interactions and child noncompliance is established, providing a foundation for the development of ODD symptoms (Hinshaw & Anderson, 1996; Patterson, 1982, 2002). Although the relationship between harsh parenting and children’s behavior problems is likely bidirectional, research suggests the influence of negative and coercive parenting on oppositional behavior is stronger than the reciprocal effect of children’s behavior on parenting (Smith et al., 2014).

Beyond Parenting: Classroom-Based Interpersonal Relationships and ODD

The school environment has been described as “an agent of developmental change” (Pianta, Steinberg, & Rollins, 1995), a designation that may be particularly true during the transition to kindergarten. During this time, children encounter new interpersonal challenges and develop relationships outside of the family environment (i.e., teacher–child, peer to peer) that profoundly impact the formation of socioemotional competencies (Silver, Measelle, Armstrong, & Essex, 2010). The significance and function of the teacher–child relationship has frequently been framed in terms of extended attachment theory, and a high-quality teacher–child relationship is proposed to function in a manner analogous to the secure base of a child’s primary attachment, the parent (Pianta, 1997; Verschueren & Koomen, 2012). Of specific relevance to the current study’s focus on ODD symptomatology, more positive student–teacher relationships are associated with lower levels of aggressive behavior (Meehan, Hughes, & Cavell, 2003) and improvements in aggression over time (Hamre & Pianta, 2001; Miller-Lewis et al., 2014). Finding from a randomized controlled trial strengthen our understanding of these dynamics, showing that an intervention to improve the teacher–child relationship resulted in greater reductions in children’s externalizing behavior when compared to a control condition (Morrison & Bratton, 2010).

Children’s early relationships with their peers have similarly been associated with ODD symptomatology (Dishion & Tipsord, 2011). Peer acceptance is one of the most well-studied

aspects of peer relationships and bears robust associations with better emotional and behavioral outcomes (for review, see Gifford-Smith & Brownell, 2003). Theoretical and empirical research on the transition to kindergarten suggests that acceptance within one's peer group creates socialization opportunities and a sense of belongingness that influences longer term adjustment (Ladd, 1990). In a manner analogous to parent-child and teacher-child attachment relationships, higher quality peer relationships have been conceptualized as a "secure base" from which to explore the novel school environment and cope with new challenges that emerge (Ladd & Price, 1987). Although it is well accepted that positive peer relationships are an essential component of children's healthy development (Holmes, Kim-Spoon, & Deater-Deckard, 2016), empirical research has primarily focused upon the detrimental consequences of negative peer influences (e.g., "peer contagion"; Dishion & Tipscord, 2011). Much less is known about the potential resilience-promoting roles of positive peer relations among adversity-exposed youth (Masten & Cicchetti, 2016).

Positive classroom relationships as potential buffers of harsh parenting effects on ODD

While harsh parenting heightens the risk for ODD symptomology, the negative consequences are not ubiquitous, suggesting the presence of resilience processes (Cicchetti & Curtis, 2007). Examinations of resilient functioning are of central importance to integrative perspectives on developmental psychopathology and enhance our understanding of how variable outcomes emerge under conditions of risk (Cicchetti, 1993). Just as children's development broadly unfolds across numerous environmental contexts, many interacting systems shape processes of risk and resilience (Leve & Cicchetti, 2016). In the current study, we examine the potential for positive relationships formed in the school context to serve in a protective manner for children reared in family environments characterized by higher levels of harsh parenting.

Although school-based relationships influence developmental outcomes in their own right, they may assume a more complex protective function for children reared in adverse home environments. Higher quality relationships with teachers can be reparative for children, revising maladaptive cognitive representations of interpersonal relationships set in motion by parental caregiving deficits (Rhodes, Grossman, & Resch, 2000). Empirically, more positive teacher-child relationships have been shown to buffer the relation between low maternal support and higher externalizing symptoms (Kiuru et al., 2016), as well as between parent-child conflict and children's behavioral misconduct (Wang, Brinkworth, & Eccles, 2013). However, studies of such interactive effects have not produced uniform results. In other research, higher quality teacher-child relationships have exerted only main effects on children's externalizing behaviors, demonstrating no interactions with negative family characteristics to predict behavioral outcomes (Meehan et al., 2003; Silver et al., 2010). Of note, prior studies have predominantly relied upon teachers' assessments of both the teacher-child relationship and children's externalizing behavior problems, a methodological limitation that may contribute to reporter biases and the lack of robust findings (Sabol & Pianta, 2012).

Higher quality peer relationships may be similarly conceptualized as protective in the context of early negative family environments. Peer acceptance often determines access to

collaborative academic activities and play groups at school (Ladd, Price, & Hart, 1990). These interpersonal contexts may provide critical opportunities for learning the type of adaptive social skills that are infrequently modeled within harsh and coercive parent–child interactions (Bolger, Patterson, & Kupersmidt, 1998). Children’s negative self-perceptions have been associated with adverse family environments (Lynch & Cicchetti, 1997) and the development of externalizing problems (Troop-Gordon & Ladd, 2005), and may be improved when children have the support of accepting peers (Bolger et al., 1998; Gruenenfelder, Harris, & Fend, 2016). Among early adolescents, a protective role for more positive peer relationships has been found in the association between parental rejection (Sentse, Lindenberg, Omvlee, Ormel, & Veenstra, 2010) or low family cohesion (Gauze, Bukowski, Aquan-Assee, & Sippola, 1996) and adolescents’ adjustment. Less is known about the interactive effects of familial and peer relationships on children’s mental health during the transition to formal schooling. Evidence of cascading effects of peer acceptance and social competence at age 4 on internalizing/externalizing symptoms through middle childhood and adolescence underscores the importance of early identification of interpersonal risk (and protective) factors for adversity-exposed youth (Bornstein, Hahn, & Haynes, 2010). This may be particularly true given that peer relationships and social networks are more malleable when children are younger and become increasingly fixed as children mature (Bukowski, Cillessen, & Velasquez, 2012; Poulin & Chan, 2010).

The current study examined the potential protective roles of positive teacher–child and peer relationships on the prospective relation between harsh parenting and children’s ODD symptoms across the course of the kindergarten year within in a community sample. To enrich our understanding of school-based interpersonal relationships and because perspectives may differ across informants, we collected a combination of child self-, peer, and teacher reports of interpersonal relationships in the school setting. This multi-informant approach may be particularly beneficial given the current study’s context of the school environment as the nature of children’s interactions with each other may be altered by the presence or surveillance of adults (Berg, Lansu, & Cillessen, 2015; Perry, Kusel, & Perry, 1988). We also used a unique three-informant measure of children’s ODD symptoms to address limitations of previous literature that has disproportionately relied upon a single informant to provide information on children’s social relationships and behavioral outcomes. We expected a significant interaction between harsh parenting and children’s peer and teacher relationships such that greater levels of peer acceptance and a closer teacher–child relationship would attenuate the positive relation between harsh parenting and children’s ODD symptoms.

Method

Participants

The present study draws participants from a larger longitudinal project of early adversity, social status, and mental and physical health (see Bush, Obradovi, Adler, & Boyce, 2011, for details). The sample was composed of 338 children (163 girls, 175 boys) between the ages of 4 and 6 years ($M = 5.32$ years, $SD = 0.32$) and was racially and ethnically diverse (19% African American, 11% Asian, 43% European or White, 4% Latino, 22% multiethnic,

and 2% other). Primary caregivers who provided information about child and family characteristics were primarily biological mothers (87%), followed by biological fathers (9%), adoptive mothers (2.5%), biological grandmothers (0.6%), and individuals with other relationships with the child (0.9%). All caregivers are hereafter referred to as parents. Biological/adoptive parents were married or partnered (76%), separated or divorced (8%), never married (11%), or other (5%), and 12% of children were reared in a single-parent household. Average annual household income ranged from less than \$10,000 to greater than \$400,000 ($M = \$60\text{--}\$79,999$, $Mdn = \$80\text{--}\$99,999$). The highest level of household educational attainment ranged from less than a high school diploma (8 individuals) to advanced graduate degrees (145 individuals), and 75% had at least a college degree. The levels of both income and education are reflective of the greater Oakland and Berkeley metropolitan areas, from which the sample was drawn.

Procedures

Participants were recruited in waves during the fall of three consecutive kindergarten years from 29 classrooms in six public schools in the San Francisco Bay Area (Oakland, Albany, and Piedmont Unified School Districts).

Schools were selected in order to ensure accurate representation of the sociodemographic and ethnic characteristics of the larger metropolitan area. Families were recruited using home mailings and during in-person presentations at kindergarten welcome nights and school pick-up/drop-off locations. Invitations to participate were extended to all children within participating classrooms; however, families who were not fluent in English or Spanish were excluded to ensure adequate understanding of the study materials and questionnaires.

All data for the current study were collected once at the beginning (fall) of the school year, with the exception of ODD symptoms, which were assessed at the beginning and end (spring) of the year. Prior to the start of data collection, parents and teachers provided informed consent and children provided assent to participate. Self-reported parenting practices and parent reports of children's functioning were collected using mailed assessments that parents completed at home and returned to the study coordinator. Teachers completed evaluations of children's functioning using measures that were provided and collected upon completion at the child's school by the study coordinator. Children's peer nominations and self-reports of functioning were collected during structured individual interviews conducted in a private room at their school. Schools were compensated \$20 per child enrolled, teachers were compensated \$15 per child assessment returned, and families were compensated \$50 at each time point. This study was approved by the Committee for the Protection of Human Subjects of the University of California, Berkeley, and the Committee of Human Subjects of the University of California, San Francisco.

Measures

Harsh parenting.¹—Qualities of the parent–child relationship were evaluated with 18 items from the Child-Rearing Practices Report (Block, 1965) administered in fall of the kindergarten year. Selection of these items was based on prior factor analyses that identified

and validated a 22-item restrictiveness scale on the Child-Rearing Practices Report (Dekovi, Janssens, & Gerris, 1991; Rickel & Biasatti, 1982). Three items from the original factor were excluded due to their sexual nature that was deemed less developmentally applicable within our sample (e.g., *I do not think children should be given sexual information*), and 2 items were omitted because they were less substantively related to harsh parenting within our sample and geographic region (*I instruct my child not to get dirty when he is playing and I don't want my child to be looked upon as different from others*). The remaining 17 items evaluated harsh, restrictive, and controlling attitudes and practices related to child-rearing (e.g., *I believe that scolding and criticism make a child improve; I do not allow my child to question my decisions; and I try to keep my child away from children or families whose ideas or values are different from our own*). One additional item from the original scale was added to assess discipline strategies (*I believe physical punishment to be the best way of disciplining*), yielding a total of 18 items. All items were rated on 7-point scale ranging from *extremely true to extremely untrue* and were subsequently reverse-scored and averaged such that higher values of the composite indicated more harsh and restrictive parenting ($\alpha = 0.83$).

Teacher–child closeness

Child report.: In fall of the kindergarten year, children completed the Teacher–Child Closeness Scale of the Berkeley Puppet Interview (BPI; Ablow & Measelle, 2003). During administration of the BPI, children are presented with contrasting statements from two puppets that represent the positive or negative dimensions of different relationships, behaviors, and attributes and are asked with which puppet they most identify. The order of positive and negative items was counterbalanced and allocated equally between the two puppets to ensure children would not associate more strongly with one puppet versus another. Children's responses were videotaped and coded on a 7-point scale based on the specific statement that was endorsed and the degree to which the child endorsed it. Interrater reliability was high for both fall (interclass correlations; ICCs = 0.91) and spring (ICCs = 0.92). Scale scores reflect the average of all items with higher values representing greater teacher–child closeness.

Teacher report.: Teachers completed the Teacher–Child Closeness Scale of the Health and Behavior Questionnaire (Essex et al., 2002) in fall of the kindergarten year for each participating child in their classroom. Closeness was measured with five items that assessed warmth and support between teachers and children (e.g., *You share an affectionate, warm relationship with this child; If upset, this child will seek comfort from you*). All items were rated on a 5-point scale ranging from 1 (*definitely does not apply*) to 5 (*definitely applies*) and averaged such that higher values indicate greater teacher–child closeness.

¹To remain consistent with the long history of ODD literature and previous terminology used to describe the Child-Rearing Practices Report, we retain the term *harsh parenting* in the current manuscript. However, it should be noted that items reflecting restrictive and controlling parenting practices were generally more frequently endorsed among parents in this sample than those reflecting harsher parenting and discipline strategies.

Peer acceptance

Peer report.: Children's reports of peer acceptance were collected using a peer nomination instrument designed to provide an objective assessment of children's social relationships based on sociometric techniques. The peer nomination instrument was administered in the fall of the kindergarten year during private interviews with each child that began with presentation of a display board containing individual pictures of children's classmates. The board included pictures of all children within the classroom (not only those participating in the study), allowing children to nominate the full range of potential classmates. Children were queried to ensure familiarity with their classmates and trained on the process of peer nomination by responding to example questions using the display board (e.g., *Who runs fast? Who smiles a lot? Who helps teachers?*). Once adequate comprehension was confirmed, interviewers asked children to identify the three classmates they "liked to play with (most) at school." This item has been used extensively in prior research to obtain valid peer ratings of acceptance among children as young as 4 to 5 years old (Crick & Dodge, 1994; Laursen, Little, & Card, 2012). Children's nominations of peer acceptance were standardized within each class to address variability in classroom size (Range = 19–28; $M = 21$) and number of nominators per classroom (Range = 8–19; $M = 14$), thus representing a child's nomination score relative to other students in the classroom. Higher values on acceptance indicate more frequent nominations for this positively valenced item.

Teacher report.: Proxy reports of children's peer acceptance were collected in fall of the kindergarten year using the peer acceptance scale on the teacher form of the MacArthur Health and Behavior Questionnaire (HBQ; Essex et al., 2002). Two items measured acceptance (and general social inclusion) by assessing the extent to which children were liked and invited to play with other children on a 4-point rating scale that ranged from 1 (*not at all like child*) to 4 (*very much like child*). Items were averaged with higher scores representative of greater acceptance/inclusion.

ODD—Symptoms of ODD were assessed during fall and spring of the kindergarten year using a composite of parent-, teacher-, and child-reported measures. The oppositional defiant scale from the parent and teacher versions of the HBQ (Essex et al., 2002) assesses each reporter's ratings of children's ODD symptoms, including the frequency with which the child argued with adults and peers, blamed others for personal mistakes, and had temper tantrums. Parents and teachers rated nine items each on a 3-point scale ranging from 0 (*never or not true*) to 2 (*often or very true*). Children's own perceptions of their oppositional behaviors were assessed using the BPI with six items that parallel those that are on the HBQ ODD measure (Ablow & Measelle, 2003; rating scale described above). For each reporter, items were averaged with higher values representative of greater symptomatology.

It is widely accepted that multiple informants are preferred to single reporters when evaluating children's psychological symptoms. Particularly for ODD symptoms that may be expressed differently (or not at all) across varied settings or influenced by the specific perspective of the reporter, such multi-informant techniques may offer incremental validity as compared to single-reporter methods (Angold & Costello, 1996; Owens & Hoza, 2003). Following procedures outlined by Kraemer et al. (2003), we conducted principal component

analyses (PCA) to integrate potentially orthogonal reports from parents, teachers, and children and obtain a multireporter index of children's ODD symptoms in both fall and spring of the kindergarten year. Parent, teacher, and child ODD average scores from the HBQ parent version, HBQ teacher version, and BPI, respectively, were simultaneously input into a PCA, and three components were extracted. The first component reflected a trait dimension (individual differences in ODD symptoms), the second component reflected a reporter/perspective dimension (characteristics of the informant that affect ODD symptom ratings), and the third component reflected a context dimension (attributes of the environment related to ODD symptom expression; see Obradovi , Bush, Stamperdahl, Adler, & Boyce, 2010, for additional details). The present study used scores based on the first (trait) component of the ODD PCA as the dependent variable with higher values indicating greater levels of (trait) ODD and lower values indicating lower levels of (trait) ODD. The first component explained 43% of the variance in ODD symptoms in the fall and 48% of the variance in the spring.

Covariates—Parents reported on marital status; child sex, date of birth, and race/ethnicity; and family income and education. Marital status and race/ethnicity were dichotomized to create married/not married and racial/ethnic minority/nonminority subgroups, respectively. Children's age at the first day of kindergarten was calculated using their date of birth. In the current study, the total household income and highest educational level in the household were standardized and then averaged to represent family socioeconomic status (SES). Use of both income and education can provide a more robust measure of SES than either indicator alone (Adler, Bush, & Pantell, 2012), and has been used extensively in prior studies within this sample (Bush et al., 2011; Hagan, Roubinov, Adler, Boyce, & Bush, 2016; Roubinov, Hagan, Boyce, Adler, & Bush, 2018).

Statistical analysis—Due to the nested nature of our data (children within classrooms), we evaluated whether it was necessary to use a multilevel modeling framework for our analyses. An intercept-only (null) model with children's ODD symptoms as the dependent variable yielded an ICC of 0.004. The near zero ICC suggests independence (rather than interdependence) in reports of children's ODD symptom within clusters; thus, multilevel modeling was not required (Lee, 2000; Park & Lake, 2005). To remain conservative, we tested our models using both conventional linear regression and multilevel modeling; there were no differences in the pattern or significance of our findings between these analytic approaches. In favor of parsimony and ease of interpretation, we present the results of the linear regression models below.

Separate reporter-specific models were conducted to evaluate the moderating influence of children's peer or teacher relationships on the association between harsh parenting and ODD symptoms using (a) peer or teacher report of peer acceptance and (b) peer or teacher report of teacher-child closeness. Continuous predictors were mean-centered to address the effects of multicollinearity. Significant interactions between harsh parenting and peer or teacher-child relationships were probed for statistical significance at 1 SD above and below the mean per the recommendations of Aiken, West, and Reno (1991). Given our interest in the change in ODD symptoms as children form new relationships and are exposed to social challenges

during the transition to kindergarten, and the potential for baseline ODD symptoms to influence the quality of children's peer relationships, we adjusted for the effects of ODD symptomatology in fall of the kindergarten year. Gender, racial/ethnic minority status, SES, parents' marital status, and children's age were also included in the models as covariates given extant research on their relations with harsh parenting and ODD symptoms and potential confounding effects. Attrition from fall to spring in our outcome data was minimal ($n = 13$, 3.8% of the sample) and handled using the recommended maximum-likelihood estimation procedure for missing data, the expectation-maximization algorithm (Schafer & Graham, 2002).

Results

Zero-order correlations and descriptive statistics for all study variables are presented in Table 1.

Child and teacher report of teacher–child closeness

Table 2 presents the results of linear regression models that predicted ODD symptoms from harsh parenting, child (or teacher) report of teacher–child closeness, and their interaction. Children's spring ODD symptoms were conditional upon an interaction between harsh parenting and children's own ratings of closeness with their teacher (unstandardized estimate = .179, $SE = .065$, $p = .006$). Examination of the simple slopes indicated that harsh parenting was significantly positively associated with changes in ODD symptoms from fall to spring at lower levels of teacher–child closeness (unstandardized estimate = .268, $SE = .083$, $p = .001$). However, among children who reported higher levels of teacher–child closeness, harsh parenting was unrelated to spring ODD symptoms, suggesting a protective effect (unstandardized estimate = $-.060$, $SE = .077$, $p = .437$). Figure 1 provides a graphical representation of these results, illustrating the positive relation between harsh parenting and ODD symptoms only for children who reported lower levels of closeness with their teacher.

In a parallel regression analysis utilizing teacher–child closeness as reported by teachers, harsh parenting did not interact with teacher reported closeness to predict children's ODD symptoms ($p = .80$). Neither predictor exhibited a main effect on changes in ODD, although coefficients for harsh parenting teacher reported closeness approached significance at the trend level.

Peer report of peer nominations of acceptance and teacher report of peer acceptance

Results of the second set of regression analyses examined the interaction of harsh parenting and peer (or teacher) report of peer acceptance on ODD symptoms (see Table 2). There was a significant interaction of harsh parenting and children's peer nominations of acceptance on children's ODD symptoms in spring of the kindergarten year (unstandardized estimate = $-.009$, $SE = .004$, $p = .028$). The interaction was probed and simple slopes indicated that harsh parenting was positively associated with ODD among children who were less frequently nominated by their peers as being a liked or desired playmate (unstandardized estimate = .240, $SE = .083$, $p = .004$). However, there was no significant relation between harsh parenting and ODD symptoms among children with higher levels of peer-nominated

acceptance, suggesting a buffering effect of more positive peer regard (unstandardized estimate = .016, $SE = .077$, $p = .83$). Figure 2 illustrates the significant relation of harsh parenting to greater ODD symptomatology as observed only among children with less frequent nominations of peer acceptance. The final model explored the interaction of harsh parenting and children's peer acceptance using parallel reports of peer acceptance by teachers. Similar to results of teachers' report of teacher-child closeness, there were no significant interactions between harsh parenting and teacher-reported peer acceptance in the prediction of children ODD symptoms ($p = .81$).

Discussion

Children's behavior is influenced by interpersonal relationships in the multiple contexts in which they are reared. Within the family, harshness in the parent-child relationship increases children's risk for ODD symptoms (Erath, El-Sheikh, Hinnant, & Cummings, 2011; Gershoff, 2002). The initiation of formal schooling introduces a new context where teacher and peer relationships may not simply operate alongside, but dynamically interact with, the parent-child relationships to shape children's development. Ecological theory describes novel environments as "setting the stage" for development, with proximal, relational processes serving as the mechanistic pathways through which developmental outcomes emerge (Bronfenbrenner, 1979). Applying this framework to the current study, the kindergarten classroom may be conceptualized as "setting the stage" for familial, teacher, and peer relationships to influence children's ODD symptoms. Our results indicated that children's report of more positive teacher relationships and peer nominations of greater peer acceptance attenuated the relation between harsh parenting and ODD symptoms in spring of the school year, after adjusting for fall levels of ODD symptoms and key covariates.

Previous research of these questions has largely relied only upon teachers or caregivers to describe children's peer relationships, which can give rise to biases when the same individuals report on early behavior problems. The present study addressed this limitation by evaluating both peers' nominations of how well accepted individual children are in their classroom and teachers' report of peer acceptance. Findings indicated that peer nominations of acceptance interacted with harsh parenting in the prediction of children's ODD symptomatology such that harsh parenting was positively associated with changes in ODD symptoms among less accepted children, but was unrelated to ODD symptoms among children who received more frequent nominations of acceptance. Higher quality peer relationships may exert an attenuating influence by modeling or providing children with feedback about the aversive and inappropriate nature of oppositional behaviors acquired during harsh interactions with parents (Deater-Deckard, 2001). Our measure of children's peer nominations specifically asked children to indicate those peers with whom they liked to play at school. Although we cannot deduce the particular ways children interacted with their peers from this measure, it may be the case that those highly accepted and well-liked children are those who have learned to engage in more socially adaptive, prosocial ways that run counter to the argumentative, defiant behavior consistent with ODD. Peer acceptance and likability are positively correlated greater prosocial behavior, better emotion regulation, and more adaptive communication skills (Gifford-Smith & Brownell, 2003). To the extent

that positive and accepting peer relationships reinforce such behaviors, the relationship between harsh parenting and ODD symptoms may be reduced.

We also found that children's report of their closeness with their kindergarten teacher buffered the influence of harsh parenting on increasing ODD symptoms across the course of the kindergarten year. Higher quality relationships with teachers are protective for adolescents from risky family environments (Wang et al., 2013); however, among younger samples, studies have largely explored the independent effects of parent and teacher relationships on children's behavior problems (e.g., Runions et al., 2014). Given that early onset externalizing exerts a particularly enduring impact on behavior problems and becomes increasingly difficult to treat during later developmental periods (Webster-Stratton, Reid, & Hammond, 2004), results of the current study may be important in highlighting teacher (and well as peer) relationships as a malleable target of intervention during early childhood. There are several pathways through which positive teacher-child relationships may exert a buffering role for children exposed to harsh parenting. Previous research suggests disruptions or deficiencies in one relational context provide an opportunity for support in another relational context to serve in a compensatory role for children (Sentse & Laird, 2010). Although there are clear differences in the structure and purpose of parent-child versus teacher-child relationships, warmth and support from closeness with a teacher may address relational deficits that emerge when children are exposed to harsh parenting. More specifically, parental warmth may improve children's self-regulation, positive emotionality, and responsiveness to directives to reduce unwanted oppositional behavior (Eisenberg et al., 2005). When warmth and support are absent from the parent-child relationship, it is possible that analogous affective qualities with teachers foster these critical regulatory skills. More positive teacher relationships have also been shown to improve children's school liking, sense of belonging, and engagement (Roorda, Koomen, Spilt, & Oort, 2011), and these factors can serve as deterrents to the emergence of behavior problems (Hirschfield & Gasper, 2011; Wang, Selman, Dishion, & Stormshak, 2010).

It is worth noting that neither teacher reports of children's peer acceptance nor their closeness with individual children in their classroom moderated the association between harsh parenting and longitudinal changes in ODD symptoms. There are several possible interpretations of the differential influence of peer and teacher relationships as reported by peers compared to teachers. It is possible that teachers may not observe or be fully aware of the nature of peer-to-peer interactions that form the basis for children's peer nominations, especially those that occur on the playground or in other group settings where supervising adults must divide their attention across a large number of children (Blake, Kim, & Lease, 2011). This line of reasoning assumes that children's peer nominations are more valid or comprehensive as compared to teacher reports. Alternatively, it may be the case that teacher and child reports do not differ in accuracy, but rather capture varied perspectives on the nature of children's peer relationships. As is the case any time specific informants are used to assess a particular construct, consideration must be given to the lens through which the individual is appraising that construct (Kraemer et al., 2003). For example, children's peer nominations and teachers' reports may be derived from considerably different social contexts: teachers' evaluations may be highly informed by peer-to-peer behavior within the boundaries and routine of the classroom environment, while children's peer nominations

may be more strongly based upon less structured free play, recess periods, or extracurricular contacts (Rubin, Bukowski, & Bowker, 2015). Given the vantage point of teachers, it may be the case that their evaluations reflect more global aspects of children's peer relationships or social functioning, while children's nominations assess more day-to-day, lived experiences. Regarding teacher-child relationships, teachers' personality characteristics, self-efficacy, and level of experience have been shown to influence their report (Hamre, Pianta, Downer, & Mashburn, 2008), while children's perspective may be affected by the overall difficulty or ease of their school transition (Harrison, Clarke, & Ungerer, 2007). Although multi-informant studies of younger children's social functioning are scarce, previous research suggests that teacher and child reports may provide unique perspectives on to the quality of children's social relationships (Ladd & Kochenderfer-Ladd, 2002; Meehan et al., 2003; White, 2016). More broadly, this is an area ripe for future inquiry. Building on the foundation of extant research, follow-up studies are well positioned to provide important information about the nonoverlapping and/or shared contributions of different reporters to varied domains of children's health and development. The multiple-informants approach to assessment has been compared to a "thick curtain punctuated by tiny holes" (Kagan, 2009, p. 23), where each curtain hole may offer an ostensibly different perspective on a singular construct of interest. While such an approach poses a challenge, it also offers a significant opportunity for researchers to elucidate when, how, and for what developmental outcomes self-reports and proxy reports of children's socioemotional functioning can be integrated to provide a comprehensive understanding of early development.

The focus on the transition into formal schooling in the present study is important for understanding longer term outcomes. Kindergarten initiates children into the academic context and introduces new roles, social environments, and the need to make use of higher level interpersonal skills in relationships with authority figures and peers (Ladd & Price, 1987; Seung Lam & Pollard, 2006). The nature of interactions with peers (Bornstein et al., 2010) and teachers (Jerome, Hamre, & Pianta, 2009; Pianta et al., 1995) during the early school years appear at least moderately stable over time and predict later academic achievement (Konold, Jamison, Stanton-Chapman, & Rimm-Kaufman, 2010) and mental health outcomes (van Lier & Koot, 2010). Furthermore, transactional models highlight reciprocal relations between children's social competencies and developmental outcomes over time, and suggest the qualities of early peer and teacher relationship can set in motion "cascading" processes that affect functioning into later developmental periods (Obradovi , Burt, & Masten, 2009; Portilla, Ballard, Adler, Boyce, & Obradovi , 2014).

The strength of our findings should be considered within the context of several limitations. The present study assessed relationships at one time point during the course of the school year; however, it is likely that there is considerable change in the quantity and quality of children's interactions with their teachers and peers during the school year, particularly as they become more familiar and comfortable within the school environment. Peer acceptance is only one indicator of a larger set of early relational systems that are relevant to children's development (Bukowski & Hoza, 1989). Although not assessed in the current study, children's friendship is a related construct that has been shown to predict adjustment among kindergarten children above and beyond the effects of peer acceptance (Ladd, 1990; Ladd, Kochenderfer, & Coleman, 1997). Future research should explore the relative contributions

of acceptance, friendship, and other protective aspects of children's peer relationships in attenuating the association between harsh parenting and ODD. Our average participation rate across classrooms was 67%, which falls within the recommended rate of 60%–70% participation (Cillessen & Marks, 2011). Although other research has suggested reliable peer nominations can be obtained with lower participation rates (e.g., ~40%; Marks, Babcock, Cillessen, & Crick, 2013), we acknowledge the importance of future research to replicate these findings, particularly in samples with more complete participation to ensure full representation across the range of parenting, peer and teacher relationship quality, and ODD symptoms.

In addition, ODD symptomatology is complex and multiply determined. Beyond the contributions of harsh parenting and children's peer relationships, there are a number of factors not assessed in the current study that may influence the pathways to ODD, including other dimensions of the parent–child relationship and home environment, biological and genetic variables, cognitive functioning, and neighborhood attributes (Burke, Loeber, & Birmaher, 2002). Further, there may be alternative models that explain the nature of relations between parenting, school relationships, and children's adjustment. For example, it has been suggested that children's peer relationships may influence parenting quality through the exposure of parents to other caregivers' child-rearing strategies and discipline styles (Criss, Pettit, Bates, Dodge, & Lapp, 2002). Although these relations cannot be examined within the temporal design of the current study, they are worthy of examination in future research. Given differences in the meaning and implications of harsh parenting across ethnic groups (Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000), follow-up research is also warranted to examine the potential for relations in the present study to be moderated by ethnicity. Although we observed significant bivariate correlations between ethnic minority status and parenting and peer acceptance in our sample, there were no significant three-way interactions between parenting, peer acceptance (or teacher–child closeness), and ethnicity (results not presented). Of note, we dichotomized our sample into ethnic minority and nonminority groups due to the unbalanced (and often small) distribution of children across varied ethnic minority groups. We do not imply homogeneity across ethnic minority groups with use of this approach and encourage more nuanced analyses of racial and ethnic differences in future studies. Finally, the present study did not use a diagnostic measure of ODD, children were not recruited from a clinical setting, and those with higher levels of ODD may have been less likely to be permitted by parents to participate. Thus, results may not generalize to children with more severe symptomatology.² However, it should be recognized that the present study's assessment of ODD symptoms along a continuum offered the advantage of retaining important variability within a diverse community sample.

Children exposed to harsh, restrictive parenting are at greater risk for ODD symptoms, though our findings show that relationships in proximal peer and classroom environments can be protective. Treatment programs often focus on parent training, including efforts to improve parents' behavior management, discipline, and parent–child interaction patterns (Loeber, Burke, & Pardini, 2009). However, there is a significant proportion of families for

²-Using empirically derived cutoff scores for the HBQ (Luby et al., 2002), between 10% and 14% of children in the current sample were identified as having clinically significant ODD, a rate comparable to the general population.

whom parent training interventions are minimally effective (Reyno & McGrath, 2006), encouraging the use of multisystem, multimodal interventions (Burke et al., 2002; Ollendick et al., 2016). Results of the current study suggest that expanding the interpersonal components of ODD treatment beyond the family environment to promote the quality of peer and teacher relationships may represent an additional pathway through which to effectively intervene. School-based programs that promote positive peer relationships, acceptance, and offer opportunities for social skill acquisition within the classroom context (e.g., Fast Track; Bierman, 2002; Bierman et al., 2004) may be well suited to address ODD symptomatology. Moreover, teachers report one of the highest levels of daily stressors among all occupational groups in the United States (Gallup, 2014), in part due to insufficient resources for meeting the needs of students with behavior problems and those reared in challenging family environments (Greenberg, Brown, & Abenavoli, 2016). Teacher mentorship programs and empirically based teacher trainings that focus on managing difficult classroom environments and providing support for at-risk youth may not only benefit students but also improve teachers' stress and well-being (Greenberg et al., 2016). Such programs during the early elementary school years may be optimally timed to interrupt the negative developmental processes that lead to long-term poor outcomes and more severe psychopathology when ODD symptoms are left untreated.

Acknowledgments

Financial support. This study was supported by grants awarded to W. Thomas Boyce from the National Institute of Mental Health (R01 MH62320), the MacArthur Foundation Research Network on Psychopathology and Development, and the Canadian Institute for Advanced Research. The authors have no conflicts of interest to report.

References

- Ablow J, & Measelle J (2003). Manual for the Berkeley Puppet Interview: Symptomatology, social, and academic modules. Pittsburgh, PA: MacArthur Foundation Research Network on Psychopathology and Development.
- Adler N, Bush NR, & Pantell MS (2012). Rigor, vigor, and the study of health disparities. *Proceedings of the National Academy of Sciences*, 109 (Suppl. 2), 17154–17159. doi:10.1073/pnas.1121399109
- Aebi M, Plattner B, Metzke CW, Bessler C, & Steinhausen HC (2013). Parent and self-reported dimensions of oppositionality in youth: Construct validity, concurrent validity, and the prediction of criminal outcomes in adulthood. *Journal of Child Psychology and Psychiatry*, 54, 941–949. doi: 10.1111/jcpp.12039 [PubMed: 23356718]
- Aiken LS, West SG, & Reno RR (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA: Sage.
- Alink LR, Mesman J, Van Zeijl J, Stolk MN, Juffer F, Bakermans-Kranenburg MJ, ... Koot HM (2009). Maternal sensitivity moderates the relation between negative discipline and aggression in early childhood. *Social Development*, 18, 99–120. doi:10.1111/j.1467-9507.2008.00478.x
- Angold A, & Costello EJ (1996). The relative diagnostic utility of child and parent reports of oppositional defiant behaviors. *International Journal of Methods in Psychiatric Research*, 6, 253–259. doi:10.1002/(SICI)1234-988X(199612)6:4<253::AID-MPR170>3.3.CO;2-O
- Baumrind D (1967). Child care practices anteceding three patterns of preschool behavior. *Genetic Psychology Monographs*, 75, 43–88. [PubMed: 6032134]
- Berg YH, Lansu TA, & Cillessen AH (2015). Measuring social status and social behavior with peer and teacher nomination methods. *Social Development*, 24, 815–832. doi:10.1111/sode.12120
- Bierman K (2002). Evaluation of the first 3 years of the Fast Track prevention trial with children at high risk for adolescent conduct problems. *Journal of Abnormal Child Psychology*, 30, 19–35. doi: 10.1023/A:1014274914287 [PubMed: 11930969]

- Bierman KL, Coie JD, Dodge KA, Foster EM, Greenberg MT, Lochman JE, ... Pinderhughes EE (2004). The effects of the Fast Track program on serious problem outcomes at the end of elementary school. *Journal of Clinical Child and Adolescent Psychology*, 33, 650–661. doi: 10.1207/s15374424jccp3304_1 [PubMed: 15498733]
- Blake JJ, Kim ES, & Lease AM (2011). Exploring the incremental validity of nonverbal social aggression: The utility of peer nominations. *Merrill-Palmer Quarterly*, 57, 293–318. doi:10.1353/mpq.2011.0015
- Block JH (1965). The child-rearing practices report: A technique for evaluating parental socialization orientations. Unpublished manuscript, University of California, Berkeley, Institute of Human Development.
- Bolger KE, Patterson CJ, & Kupersmidt JB (1998). Peer relationships and self-esteem among children who have been maltreated. *Child Development*, 69, 1171–1197. doi:10.1111/j.1467-8624.1998.tb06166.x [PubMed: 9768492]
- Bornstein MH, Hahn C-S, & Haynes OM (2010). Social competence, externalizing, and internalizing behavioral adjustment from early childhood through early adolescence: Developmental cascades. *Development and Psychopathology*, 22, 717–735. doi:10.1017/S0954579410000416 [PubMed: 20883577]
- Bronfenbrenner U (1979). Contexts of child rearing: Problems and prospects. *American Psychologist*, 34, 844–850. doi:10.1037/0003-066X.34.10.844
- Bukowski WM, Cillessen A, & Velasquez A (2012). Peer ratings In Brett TDL, Larsen P, & Card NA (Eds.), *Handbook of developmental research methods* (pp. 211–228). New York: Guilford Press.
- Bukowski WM, & Hoza B (1989). Popularity and friendship: Issues in theory, measurement, and outcome In Berndt TJ & Ladd GW (Eds.), *Peer relationships in child development* (pp. 15–45). New York: Wiley.
- Burke JD, Loeber R, & Birmaher B (2002). Oppositional defiant disorder and conduct disorder: A review of the past 10 years, part II. *Journal of the American Academy of Child & Adolescent Psychiatry*, 41, 1275–1293. doi:10.1097/00004583-200211000-00009 [PubMed: 12410070]
- Burke JD, Rowe R, & Boylan K (2014). Functional outcomes of child and adolescent oppositional defiant disorder symptoms in young adult men. *Journal of Child Psychology and Psychiatry*, 55, 264–272. doi:10.1111/jcpp.12150 [PubMed: 24117754]
- Bush NR, Obradovi J, Adler N, & Boyce WT (2011). Kindergarten stressors and cumulative adrenocortical activation: The “first straws” of allostatic load? *Development and Psychopathology*, 23, 1089–1106. doi:10.1017/S0954579411000514 [PubMed: 22018083]
- Cicchetti D (1993). Developmental psychopathology: Reactions, reflections, projections. *Developmental Review*, 13, 471–502. doi:10.1006/drev.1993.1021
- Cicchetti D, & Curtis WJ (2007). Multilevel perspectives on pathways to resilient functioning. *Development and Psychopathology*, 19, 627. doi:10.1017/S0954579407000314 [PubMed: 17972420]
- Cillessen AHN, & Marks PEL (2011). Conceptualizing and measuring popularity In illeseen AHN, Schwartz D, & Mayeux L (Eds.), *Popularity in the peer system* (pp. 25–56). New York: Guilford Press.
- Costello EJ (2007). Psychiatric predictors of adolescent and young adult drug use and abuse. *Drug and Alcohol Dependence*, 88, S1–S3. doi:10.1016/j.drugalcdep.2006.12.007
- Crick NR, & Dodge KA (1994). A review and reformulation of social information-processing mechanisms in children’s social adjustment. *Psychological Bulletin*, 115, 74. doi: 10.1037/0033-2909.115.1.74
- Criss MM, Pettit GS, Bates JE, Dodge KA, & Lapp AL (2002). Family adversity, positive peer relationships, and children’s externalizing behavior: A longitudinal perspective on risk and resilience. *Child Development*, 73, 1220–1237. doi:10.1111/1467-8624.00468 [PubMed: 12146744]
- Deater-Deckard K (2001). Annotation: Recent research examining the role of peer relationships in the development of psychopathology. *Journal of Child Psychology and Psychiatry*, 42, 565–579. doi: 10.1017/S0021963001007272. [PubMed: 11464962]

- Dekovi M, Janssens JM, & Gerris JR (1991). Factor structure and construct validity of the Block Child Rearing Practices Report (CRPR). *Psychological Assessment*, 3, 182. doi: 10.1037/1040-3590.3.2.182
- Dishion TJ, & Patterson GR (2016). The development and ecology of anti-social behavior: Linking etiology, prevention, and treatment In Cicchetti D (Ed.), *Developmental psychopathology, risk, resilience, and intervention* (Vol. 3, pp. 647–678). Hoboken, NJ: Wiley.
- Dishion TJ, & Tipsord JM (2011). Peer contagion in child and adolescent social and emotional development. *Annual Review of Psychology*, 62, 189–214. doi:10.1146/annurev.psych.093008.100412
- Egger HL, & Angold A (2006). Common emotional and behavioral disorders in preschool children: Presentation, nosology, and epidemiology. *Journal of Child Psychology and Psychiatry*, 47, 313–337. doi:10.1111/j.1469-7610.2006.01618.x [PubMed: 16492262]
- Eisenberg N, Zhou Q, Spinrad TL, Valiente C, Fabes RA, & Liew J (2005). Relations among positive parenting, children's effortful control, and externalizing problems: A three-wave longitudinal study. *Child Development*, 76, 1055–1071. doi:10.1111/j.1467-8624.2005.00897.x [PubMed: 16150002]
- Erath SA, El-Sheikh M, Hinnant JB, & Cummings EM (2011). Skin conductance level reactivity moderates the association between harsh parenting and growth in child externalizing behavior. *Developmental Psychology*, 47, 693. doi:10.1037/a0021909 [PubMed: 21142369]
- Essex MJ, Boyce WT, Goldstein LH, Armstrong JM, Kraemer HC, Kupfer DJ, & MacArthur Assessment Battery Working Group. (2002). The confluence of mental, physical, social, and academic difficulties in middle childhood: II. Developing the MacArthur Health and Behavior Questionnaire. *Journal of the American Academy of Child & Adolescent Psychiatry*, 41, 588–603. doi:10.1097/00004583-200205000-00017 [PubMed: 12014792]
- Gallup. (2014). State of American Schools. Retrieved from <http://www.gallup.com/services/178709/state-america-schools-report.aspx>
- Gauze C, Bukowski WM, Aquan-Assee J, & Sippola LK (1996). Interactions between family environment and friendship and associations with self-perceived well-being during early adolescence. *Child Development*, 67, 2201–2216. doi:10.1111/j.1467-8624.1996.tb01852.x [PubMed: 9022238]
- Gershoff ET (2002). Corporal punishment by parents and associated child behaviors and experiences: A meta-analytic and theoretical review. *Psychological Bulletin*, 128, 539. doi: 10.1037//0033-2909.128.4.539 [PubMed: 12081081]
- Gifford-Smith ME, & Brownell CA (2003). Childhood peer relationships: Social acceptance, friendships, and peer networks. *Journal of School Psychology*, 41, 235–284. doi:10.1016/S0022-4405(03)00048-7
- Greenberg MT, Brown JL, & Abenavoli RM (2016). *Teacher stress and health effects on teachers, students, and schools* College Park, PA: Pennsylvania State University, Edna Bennett Pierce Prevention Research Center.
- Gruenenfelder-Steiger AE, Harris MA, & Fend HA (2016). Subjective and objective peer approval evaluations and self-esteem development: A test of reciprocal, prospective, and long-term effects. *Developmental Psychology*, 52, 1563. [PubMed: 27690495]
- Hagan MJ, Roubinov DS, Adler NE, Boyce WT, & Bush NR (2016). Socioeconomic adversity, negativity in the parent child-relationship, and physiological reactivity: An examination of pathways and interactive processes affecting young children's physical health. *Psychosomatic Medicine*, 78, 998–1007. doi:10.1097/PSY.0000000000000379 [PubMed: 27551989]
- Hamre BK, & Pianta RC (2001). Early teacher-child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development*, 72, 625–638. doi: 10.1111/1467-8624.00301 [PubMed: 11333089]
- Hamre BK, Pianta RC, Downer JT, & Mashburn AJ (2008). Teachers' perceptions of conflict with young students: Looking beyond problem behaviors. *Social Development*, 17, 115–136. doi: 10.1111/j.1467-9507.2007.00418.x

- Harrison LJ, Clarke L, & Ungerer JA (2007). Children's drawings provide a new perspective on teacher-child relationship quality and school adjustment. *Early Childhood Research Quarterly*, 22, 55–71. doi:10.1016/j.ecresq.2006.10.003
- Hinshaw SP, & Anderson C (1996). Conduct and oppositional defiant disorders In Mash E & Barkley R (Eds.), *Child psychopathology* (pp. 113–149). New York: Guilford Press.
- Hinshaw SP, & Lee SS (2003). Conduct and oppositional defiant disorders In Mash E & Barkley R (Eds.), *Child psychopathology* (pp. 144–198). New York: Guilford Press.
- Hirschfield PJ, & Gasper J (2011). The relationship between school engagement and delinquency in late childhood and early adolescence. *Journal of Youth and Adolescence*, 40, 3–22. doi:10.1007/s10964-010-9579-5 [PubMed: 20706779]
- Holmes CJ, Kim-Spoon J, & Deater-Deckard K (2016). Linking executive function and peer problems from early childhood through middle adolescence. *Journal of Abnormal Child Psychology*, 44, 31–42. doi:10.1007/s10802-015-0044-5 [PubMed: 26096194]
- Jerome EM, Hamre BK, & Pianta RC (2009). Teacher-child relationships from kindergarten to sixth grade: Early childhood predictors of teacher-perceived conflict and closeness. *Social Development*, 18, 915–945. doi:10.1111/j.1467-9507.2008.00508.x [PubMed: 24991084]
- Kagan J (2009). Two is better than one. *Perspectives on Psychological Science*, 4, 22–23. doi:10.1111/j.1745-6924.2009.01092.x [PubMed: 26158825]
- Kiuru N, Laursen B, Aunola K, Zhang X, Lerkkanen M-K, Leskinen E, ... Nurmi J-E (2016). Positive teacher affect and maternal support facilitate adjustment after the transition to first grade. *Merrill-Palmer Quarterly*, 62, 158–178.
- Konold TR, Jamison KR, Stanton-Chapman TL, & Rimm-Kaufman SE (2010). Relationships among informant based measures of social skills and student achievement: A longitudinal examination of differential effects by sex. *Applied Developmental Science*, 14, 18–34. doi:10.1080/10888690903510307
- Kraemer HC, Measelle JR, Ablow JC, Essex MJ, Boyce WT, & Kupfer DJ (2003). A new approach to integrating data from multiple informants in psychiatric assessment and research: Mixing and matching contexts and perspectives. *American Journal of Psychiatry*, 160, 1566–1577. doi:10.1176/appi.ajp.160.9.1566 [PubMed: 12944328]
- Ladd GW (1990). Having friends, keeping friends, making friends, and being liked by peers in the classroom: Predictors of children's early school adjustment? *Child Development*, 61, 1081–1100. doi:10.1111/j.14678624.1990.tb02843.x [PubMed: 2209179]
- Ladd GW, & Kochenderfer-Ladd B (2002). Identifying victims of peer aggression from early to middle childhood: Analysis of cross-informant data for concordance, estimation of relational adjustment, prevalence of victimization, and characteristics of identified victims. *Psychological Assessment*, 14, 74. doi:10.1037//1040-3590.14.1.74 [PubMed: 11911051]
- Ladd GW, Kochenderfer BJ, & Coleman CC (1997). Classroom peer acceptance, friendship, and victimization: Distinct relation systems that contribute uniquely to children's school adjustment? *Child Development*, 68, 1181–1197. doi:10.1111/j.1467-8624.1997.tb01993.x [PubMed: 9418233]
- Ladd GW, & Price JM (1987). Predicting children's social and school adjustment following the transition from preschool to kindergarten. *Child Development*, 58, 1168–1189. doi:10.2307/1130613
- Ladd GW, Price JM, & Hart CH (1990). Preschoolers' behavioral orientations and patterns of peer contact: Predictive of social status? In Asher SR & Coie JD (Eds.), *Peer rejection in childhood* (pp. 90–115). New York: Cambridge University Press.
- Laursen B, Little TD, & Card NA (2012). *Handbook of developmental research methods*. New York: Guilford Press.
- Lavigne JV, LeBailly SA, Hopkins J, Gouze KR, & Binns HJ (2009). The prevalence of ADHD, ODD, depression, and anxiety in a community sample of 4-year-olds. *Journal of Clinical Child & Adolescent Psychology*, 38, 315–328. doi:10.1080/15374410902851382 [PubMed: 19437293]
- Lee VE (2000). Using hierarchical linear modeling to study social contexts: The case of school effects. *Educational Psychologist*, 35, 125–141. doi:10.1207/s15326985ep3502_6

- Leve LD, & Cicchetti D (2016). Longitudinal transactional models of development and psychopathology. *Development and Psychopathology*, 28, 621–622. doi:10.1017/S0954579416000201 [PubMed: 27427795]
- Loeber R, Burke J, & Pardini DA (2009). Perspectives on oppositional defiant disorder, conduct disorder, and psychopathic features. *Journal of Child Psychology and Psychiatry*, 50, 133–142. doi:10.1111/j.14697610.2008.02011.x [PubMed: 19220596]
- Luby JL, Heffelfinger A, Measelle JR, Ablow JC, Essex MJ, Dierker L, ... Kupfer DJ (2002). Differential performance of the MacArthur HBQ and DISC-IV in identifying DSM-IV internalizing psychopathology in young children. *Journal of the American Academy of Child & Adolescent Psychiatry*, 41, 458–466. doi:10.1097/00004583200204000-00019 [PubMed: 11931603]
- Lynch M, & Cicchetti D (1997). Children's relationships with adults and peers: An examination of elementary and junior high school students. *Journal of School Psychology*, 35, 81–99. doi:10.1016/S0022-4405(96)00031-3
- Marks PEL, Babcock B, Cillessen AHN, & Crick NR (2013). The effects of participation rate on the internal reliability of peer nomination measures. *Social Development*, 22, 609–622. doi:10.1111/j.1467-9507.2012.00661.x
- Masten AS, & Cicchetti D (2016). Resilience in development: Progress and transformation In Cicchetti D (Ed.), *Developmental psychopathology: Vol. 4. Risk, resilience, and intervention* (3rd ed., pp. 271–333). New York: Wiley.
- Meehan BT, Hughes JN, & Cavell TA (2003). Teacher–student relationships as compensatory resources for aggressive children. *Child Development*, 74, 1145–1157. doi:10.1111/1467-8624.00598 [PubMed: 12938710]
- Miller-Lewis LR, Sawyer AC, Searle AK, Mittinty MN, Sawyer MG, & Lynch JW (2014). Student-teacher relationship trajectories and mental health problems in young children. *BMC Psychology*, 2, 27. doi:10.1186/s40359-014-0027-2 [PubMed: 25685350]
- Morrison MO, & Bratton SC (2010). Preliminary investigation of an early mental health intervention for Head Start programs: Effects of child teacher relationship training on children's behavior problems. *Psychology in the Schools*, 47, 1003–1017. doi:10.1002/pits.20520
- Nock MK, Kazdin AE, Hiripi E, & Kessler RC (2007). Lifetime prevalence, correlates, and persistence of oppositional defiant disorder: Results from the National Comorbidity Survey Replication. *Journal of Child Psychology and Psychiatry*, 48, 703–713. doi:10.1111/j.1469-7610.2007.01733.x [PubMed: 17593151]
- Obrodovi J, Burt KB, & Masten AS (2009). Testing a dual cascade model linking competence and symptoms over 20 years from childhood to adulthood. *Journal of Clinical Child & Adolescent Psychology*, 39, 90–102. doi:10.1080/15374410903401120
- Obrodovic J, Bush NR, Stamperdahl J, Adler NE, & Boyce WT (2010). Biological sensitivity to context: The interactive effects of stress reactivity and family adversity on socioemotional behavior and school readiness. *Child Development*, 81, 270–289. doi:10.1111/j.1467-8624.2009.01394.x [PubMed: 20331667]
- Ollendick TH, Greene RW, Austin KE, Fraire MG, Halldorsdottir T, Allen KB, ... Cunningham NR (2016). Parent management training and collaborative and proactive solutions: A randomized control trial for oppositional youth. *Journal of Clinical Child & Adolescent Psychology*, 45, 591–604. doi:10.1080/15374416.2015.1004681 [PubMed: 25751000]
- Owens J, & Hoza B (2003). Diagnostic utility of DSM-IV-TR symptoms in the prediction of DSM-IV-TR ADHD subtypes and ODD. *Journal of Attention Disorders*, 7, 11–27. doi:10.1177/108705470300700102 [PubMed: 14738178]
- Park S, & Lake ET (2005). Multilevel modeling of a clustered continuous outcome: Nurses' work hours and burnout. *Nursing Research*, 54, 406–413. doi:10.1097/00006199-200511000-00007 [PubMed: 16317362]
- Patterson G (1982). *Coercive family process* (Vol. 3). Eugene, OR: Castalia.
- Patterson GR (2002). The early development of coercive family process In Reid J, Patterson GR, & Snyder J (Eds.), *Antisocial behavior in children and adolescents: A developmental analysis and model for intervention* (pp. 25–44). Washington, DC: American Psychological Association.

- Perry DG, Kusel SJ, & Perry LC (1988). Victims of peer aggression. *Developmental Psychology*, 24, 807. doi:10.1037/0012-1649.24.6.807
- Pianta RC (1997). Adult-child relationship processes and early schooling. *Early Education and Development*, 8, 11–26. doi:10.1207/s15566935eed0801_2
- Pianta RC, Steinberg MS, & Rollins KB (1995). The first two years of school: Teacher child relationships and deflections in children's classroom adjustment. *Development and Psychopathology*, 7, 295–312. doi:10.1017/S0954579400006519
- Pinderhughes EE, Dodge KA, Bates JE, Pettit GS, & Zelli A (2000). Discipline responses: Influences of parents' socioeconomic status, ethnicity, beliefs about parenting, stress, and cognitive-emotional processes. *Journal of Family Psychology*, 14, 380–400. doi:10.1037/0893-3200.14.3.380 [PubMed: 11025931]
- Portilla XA, Ballard PJ, Adler NE, Boyce WT, & Obradovi J (2014). An integrative view of school functioning: Transactions between self-regulation, school engagement, and teacher-child relationship quality. *Child Development*, 85, 1915–1931. doi:10.1111/cdev.12259 [PubMed: 24916608]
- Poulin F, & Chan A (2010). Friendship stability and change in childhood and adolescence. *Developmental Review*, 30, 257–272. doi:10.1016/j.dr.2009.01.001
- Reyno SM, & McGrath PJ (2006). Predictors of parent training efficacy for child externalizing behavior problems—A meta-analytic review. *Journal of Child Psychology and Psychiatry*, 47, 99–111. doi:10.1111/j.1469-7610.2005.01544.x [PubMed: 16405646]
- Rhodes JE, Grossman JB, & Resch NL (2000). Agents of change: Pathways through which mentoring relationships influence adolescents' academic adjustment. *Child Development*, 71, 1662–1671. doi:10.1111/1467-8624.00256 [PubMed: 11194264]
- Rickel AU, & Biasatti LL (1982). Modification of the Block Child Rearing Practices Report. *Journal of Clinical Psychology*, 38, 129–134. doi:10.1002/1097-4679(198201)38:1<129::AID-JCLP2270380120>3.0.CO;2-3
- Romano E, Tremblay RE, Boulerice B, & Swisher R (2005). Multilevel correlates of childhood physical aggression and prosocial behavior. *Journal of Abnormal Child Psychology*, 33, 565–578. doi:10.1007/s10802005-6738-3 [PubMed: 16195951]
- Roorda DL, Koomen HM, Spilt JL, & Oort FJ (2011). The influence of affective teacher-student relationships on students' school engagement and achievement: A meta-analytic approach. *Review of Educational Research*, 81, 493–529. doi:10.3102/0034654311421793
- Roubinov DS, Hagan MJ, Boyce WT, Adler NE, & Bush NR (2018). Family socioeconomic status, cortisol, and physical health in early childhood: The role of advantageous neighborhood characteristics. *Psychosomatic Medicine*, 80, 492–501. doi:10.1097/PSY.0000000000000585 [PubMed: 29742755]
- Rubin KH, Bukowski WM, & Bowker JC (2015). Children in peer groups In *Handbook of child psychology and developmental science* (7th ed., pp. 175–222). New York: Wiley.
- Runions KC, Vitaro F, Cross D, Shaw T, Hall M, & Boivin M (2014). Teacher-child relationship, parenting, and growth in likelihood and severity of physical aggression in the early school years. *Merrill-Palmer Quarterly*, 60, 274–301.
- Sabol TJ, & Pianta RC (2012). Recent trends in research on teacher-child relationships. *Attachment & Human Development*, 14, 213–231. doi:10.1080/14616734.2012.672262 [PubMed: 22537521]
- Schafer JL, & Graham JW (2002). Missing data: Our view of the state of the art. *Psychological Methods*, 7, 147–177. doi:10.1037/1082-989X.7.2.147 [PubMed: 12090408]
- Sentse M, & Laird RD (2010). Parent-child relationships and dyadic friendship experiences as predictors of behavior problems in early adolescence. *Journal of Clinical Child & Adolescent Psychology*, 39, 873–884. doi:10.1080/15374416.2010.517160 [PubMed: 21058133]
- Sentse M, Lindenberg S, Omvlee A, Ormel J, & Veenstra R (2010). Rejection and acceptance across contexts: Parents and peers as risks and buffers for early adolescent psychopathology. *The TRAILS study*. *Journal of Abnormal Child Psychology*, 38, 119–130. doi:10.1007/s10802-009-9351-z [PubMed: 19707865]

- Seung Lam M, & Pollard A (2006). A conceptual framework for understanding children as agents in the transition from home to kindergarten. *Early Years*, 26, 123–141. doi: 10.1080/09575140600759906
- Silver RB, Measelle JR, Armstrong JM, & Essex MJ (2010). The impact of parents, child care providers, teachers, and peers on early externalizing trajectories. *Journal of School Psychology*, 48, 555–583. doi:10.1016/j.jsp.2010.08.003 [PubMed: 21094398]
- Smith JD, Dishion TJ, Shaw DS, Wilson MN, Winter CC, & Patterson GR (2014). Coercive family process and early-onset conduct problems from age 2 to school entry. *Development and Psychopathology*, 26(4, Pt. 1), 917–932. doi:10.1017/S0954579414000169 [PubMed: 24690305]
- Speltz ML, McClellan J, DeKlyen M, & Jones K (1999). Preschool boys with oppositional defiant disorder: Clinical presentation and diagnostic change. *Journal of the American Academy of Child & Adolescent Psychiatry*, 38, 838–845. doi:10.1097/00004583-199907000-00013 [PubMed: 10405501]
- Troop-Gordon W, & Ladd GW (2005). Trajectories of peer victimization and perceptions of the self and schoolmates: Precursors to internalizing and externalizing problems. *Child Development*, 76, 1072–1091. doi:10.1111/j.1467-8624.2005.00898.x [PubMed: 16150003]
- van Lier PA, & Koot HM (2010). Developmental cascades of peer relations and symptoms of externalizing and internalizing problems from kindergarten to fourth-grade elementary school. *Development and Psychopathology*, 22, 569–582. doi:10.1017/S0954579410000283 [PubMed: 20576179]
- Verschueren K, & Koomen HM (2012). Teacher–child relationships from an attachment perspective. *Attachment & Human Development*, 14, 205–211. doi:10.1080/14616734.2012.672260 [PubMed: 22537520]
- Wang M-T, Brinkworth M, & Eccles J (2013). Moderating effects of teacher–student relationship in adolescent trajectories of emotional and behavioral adjustment. *Developmental Psychology*, 49, 690–705. doi:10.1037/a0027916 [PubMed: 22582833]
- Wang MT, Selman RL, Dishion TJ, & Stormshak EA (2010). A tobit regression analysis of the covariation between middle school students’ perceived school climate and behavioral problems. *Journal of Research on Adolescence*, 20, 274–286. doi:10.1111/j.1532-7795.2010.00648.x [PubMed: 20535244]
- Webster-Stratton C, Reid MJ, & Hammond M (2004). Treating children with early-onset conduct problems: Intervention outcomes for parent, child, and teacher training. *Journal of Clinical Child and Adolescent Psychology*, 33, 105–124. doi:10.1207/S15374424JCCP3301_11 [PubMed: 15028546]
- White KM (2016). “My teacher helps me”: Assessing teacher-child relationships from the child’s perspective. *Journal of Research in Childhood Education*, 30, 29–41. doi: 10.1080/02568543.2015.1105333
- Whittinger NS, Langley K, Fowler TA, Thomas HV, & Thapar A (2007). Clinical precursors of adolescent conduct disorder in children with attention-deficit/hyperactivity disorder. *Journal of the American Academy of Child & Adolescent Psychiatry*, 46, 179–187. doi:10.1097/01.chi.0000246066.00825.53 [PubMed: 17242621]

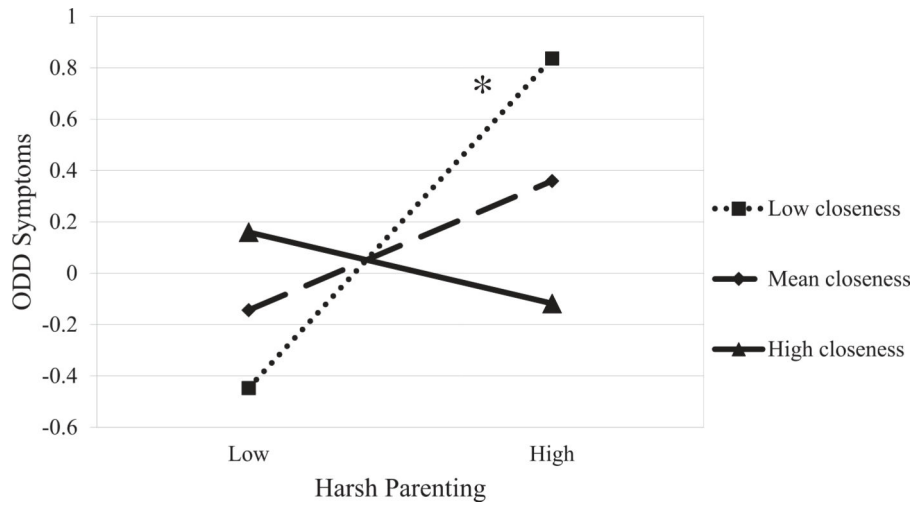


Figure 1. The association between harsh parenting and spring oppositional defiant disorder (ODD) symptoms using the continuous measure of children’s report of teacher–child closeness plotted at low ($-1 SD$), mean, and high ($+1 SD$) levels of closeness.

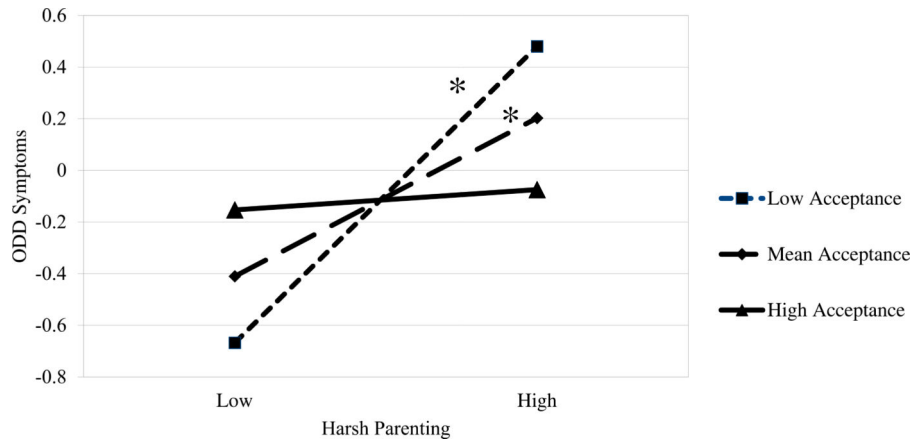


Figure 2. The association between harsh parenting and spring oppositional defiant disorder (ODD) symptoms using the continuous measure of peer nominations of acceptance plotted at low ($-1 SD$), mean, and high ($+1 SD$) levels of peer acceptance.

Table 1.

Descriptive statistics and zero-order correlations among study variables

	1	2	3	4	5	6	7	8	9	10
1. Harsh parenting(Parent)	—	-.18**	.06	<-.01	.05	.09	.15**	-.13*	.39**	-.44**
2. Peer acceptance (Child)		—	.33**	.06	.13*	-.22**	-.15**	.17**	-.15**	.13*
3. Peer acceptance(Teacher)			—	.15**	.44**	-.31**	-.23**	.13*	.04	-.03
4. Teacher-child closeness(Child)				—	.12*	-.17**	-.12*	.20**	-.04	.05
5. Teacher-child closeness(Teacher)					—	-.16**	-.17**	.17**	.06	-.05
6. ODD symptoms(Multi-informant, Fall)						—	.64**	-.21**	-.05	-.09
7. ODD symptoms(Multi-informant, Spring)							—	-.22**	-.01	-.13*
8. Gender								—	.02	.11*
9. Ethnicity									—	-.47**
10. Socioeconomic status										—
Mean	3.63	15.20	3.34	5.05	4.17	-0.04	-0.03	—	—	0.00
SD	0.77	12.40	0.63	0.91	0.85	0.95	0.97	—	—	0.89

Note: ODD, oppositional defiant disorder. Gender coded as 0 = Male, 1 = Female. Ethnicity coded as 0 = Caucasian, 1 = non-Caucasian.

* $p < .05$.

** $p < .01$.

Linear regression models presenting unstandardized betas of children's ODD symptoms as a function of harsh parenting, peer acceptance, or teacher-child closeness (peer or teacher report), and their interaction

Table 2.

	<u>Spring ODD symptoms</u>			
	<u>Child report of teacher-child closeness</u>	<u>SE</u>	<u>p</u>	<u>Teacher report of teacher-child closeness</u>
Fall ODD symptoms	.591	.048	<.001	.578 .048 <.001
Child age	.034	.140	.810	.049 .140 .726
Child gender	-.138	.91	.128	-.102 .090 .260
Racial/ethnicity minority status	-.056	.099	.569	-.059 .099 .553
SES	-.023	.064	.720	-.038 .064 .558
Parent marital status	-.041	.121	.733	-.007 .122 .952
Harsh parenting	.104	.064	.106	.117 .065 .075
Closeness	-.001	.050	.981	-.094 .051 .070
Harsh Parenting × Closeness	.180	.065	.006	.015 .060 .802

	<u>Spring ODD symptoms</u>			
	<u>Peer nomination of acceptance</u>	<u>SE</u>	<u>p</u>	<u>Teacher report of acceptance</u>
Fall ODD symptoms	.587	.049	<.001	.582 .050 <.001
Child age	.044	.140	.751	.053 .141 .710
Child gender	-.133	.089	.138	-.122 .090 .178
Racial/ethnic minority status	-.068	.099	.490	-.060 .100 .548
SES	-.027	.064	.673	-.029 .065 .651

Spring ODD symptoms						
Peer nomination of acceptance			Teacher report of acceptance			
Coefficient	SE	p	Coefficient	SE	p	
Parent marital status	-.033	.122	.789	-.025	.123	.843
Harsh parenting	.128	.065	.049	.112	.065	.087
Peer acceptance	.004	.003	.348	-.033	.071	.638
Harsh Parenting × Peer Acceptance	-.010	.003	.028	.020	.086	.814

Note: SES, socioeconomic status. ODD, oppositional defiant disorder. Gender coded as 0 = *Male*, 1 = *Female*. Race/ethnicity coded as 0 = *Caucasian*, 1 = *non-Caucasian*. **Marital status coded as 0 = *Not married*, 1 = *Married*.**