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## Peer Deviance, Parenting and Disruptive Behavior among Young Girls

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### Abstract

This study examined concurrent and longitudinal associations between peer deviance, parenting practices, and conduct and oppositional problems among young girls ages 7 and 8. Participants were 588 African American and European American girls who were part of a population-based study of the development of conduct problems and delinquency among girls. Affiliations with problem-prone peers were apparent among a sizeable minority of the girls, and these associations included both males and females. Although peer delinquency concurrently predicted disruptive behaviors, the gender of these peers did not contribute to girls' behavior problems. Harsh parenting and low parental warmth showed both concurrent and prospective associations with girls' disruptive behaviors. Similar patterns of association were seen for African American and European American girls. The findings show that peer and parent risk processes are important contributors to the early development of young girls' conduct and oppositional behaviors. These data contribute to our understanding of girls' aggression and antisocial behaviors and further inform our understanding of risk processes for these behaviors among young girls in particular.

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In recent years, researchers, practitioners, and policymakers have become increasingly attentive to the problem of aggressive and antisocial behaviors by girls (American Bar Association, 2001; Pepler, Madsen, Webster, & Levene, 2005; Putallaz & Bierman, 2004). Traditionally, much of the original theoretical work did not include girls and these behaviors were thought to be fairly uncommon. However, there is no lack of data showing that relative to boys, girls are becoming increasingly involved in the juvenile justice system (Snyder, 2003). In the last decade, arrests for girls have seen a dramatic increase; in 2004, girls made up 30% of all juvenile arrests, up from 20% only a decade ago (Snyder, 2003, 2006). Because our current intervention models are based on studies that were done on boys, it remains unknown whether risk processes operate similarly for girls. This study focuses on childhood onset of disruptive behaviors and two aspects of a child's social ecology – peer affiliations and parenting behaviors – and their links with these behaviors among a population-based sample of young girls. In this way, the study focuses on a sorely understudied population and informs our understanding of risk factors that contribute to the development of disruptive behaviors among girls.

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Although there is limited research on girls' disruptive behavior in general, there has been particularly sparse attention given to these behaviors among girls in the childhood years. This dearth is in sharp contrast to the fairly large literature base on childhood onset behavior problems among boys (Dodge, Coie, & Lynam, 2006; Loeber & Farrington, 2001). This set of work generally focuses on boys who exhibit an 'early starting' or 'life-course-persistent' pathway of antisocial behavior that is characterized by disruptive and aggressive behaviors early in childhood (Loeber & Stouthamer-Loeber, 1998; Moffitt, 1993; Patterson, Capaldi, & Bank, 1991; Moffitt, 1993). These behaviors develop into more serious adolescent antisocial activity that then persists into adulthood, with early starting boys accounting for a disproportionate amount of serious and violent juvenile crime. Indeed, samples upon which these formulations were posited were based on all male samples (Loeber & Farrington, 2001; Patterson, DeBaryshe, & Ramsey, 1989).

However, only limited attention has been given to studying girls with childhood onset of antisocial behavior. Some researchers have questioned the relevance of these early behavior problems among girls. One case in point was Silverthorn and Frick's (1999) assertion that girls' antisocial behavior followed a single, delayed-onset pathway. Moffitt and colleagues (2001), reporting on data from the Dunedin Longitudinal Study, identified only six life-course-persistent girls. More recent studies from all-female samples applying a broader set of disruptive behaviors have identified a small group of girls with high levels of aggressive-disruptive behaviors in the elementary school years (Bierman et al., 2004; Côté, Zoccolillo, Tremblay, Nagin, & Vitaro, 2001; Schaeffer, Petras, Ialongo, Masyn, Hubbard, Poduska, & Kellam, 2006). One contribution of this study is its focus on disruptive behaviors among girls in childhood and associated risk processes. Although gender comparisons cannot be made, we examine whether risk processes found in studies of boys are similarly found in an all-female sample of young girls.

A key aspect of the child's social context contributing to the development of childhood onset antisocial behaviors is parenting practices (Dodge, Coie, & Lynam, 2006; Loeber & Farrington, 2001; McMahon, Slough, & Conduct Problems Prevention Research Group [CPPRG], 1996). In their widely acclaimed coercive model, Patterson and colleagues (Patterson et al., 1989, 1991) outlined how stressful conditions in families (e.g., financial stress, parental psychopathology or criminality, marital instability), set the stage for parenting problems. Parents of children with early onset antisocial behavior have difficulty setting consistent limits and have less positive involvement with their children. Such parents may also be overly critical and harsh and use more punitive strategies. Over time, parents and children become immersed in a coercive cycle whereby children respond with negative, resistant behavior and parents become increasingly beleaguered and give in to children's aversive behavior. Although Patterson's model was not limited to boys, formulations were based on work with the all-male Oregon Youth Study sample

Also implicated in the development of childhood onset antisocial behaviors are affiliations with peers (Dodge, Coie, & Lynam, 2006; Loeber & Farrington, 2001). The contribution of peers to antisocial activity is construed as two sequentially linked processes (Coie & Miller-Johnson, 2001). First, children who are aggressive and disruptive are rejected by their peers, and this experience of social rejection in the early school years adds to the risk for early starting conduct problems (Miller-Johnson, Coie, Maumary-Gremaud, & Bierman, 2002). Next, aggressive, disruptive children gravitate towards each other, creating deviant peer groups that maintain and amplify antisocial behaviors. It is well documented that antisocial, delinquent behaviors are most likely to occur in concert with other peers rather than in isolation (Dishion, Andrews, & Crosby, 1995; Thornberry & Krohn, 1997; Warr, 1996). Indeed, peer delinquency is one of the strongest correlates of one's own delinquent behavior (Elliot & Menard, 1996; Pratt & Cullen, 2000; Warr, 2002). Again, work has generally been formulated from studies

of boys, including rich, observational studies of peer social influence processes (Dishion et al., 1995; Dishion & Owen, 2002; Patterson, Dishion, & Yoerger, 2000).

Most typically, deviant peer influences have been studied in relation to adolescent delinquency. However, recent research by Snyder and colleagues (1997, 2005) has revealed that deviant peer processes emerge in the early elementary school years. In an initial study of a mixed-gender sample, young children ages 4 to 5 were found to be quite discriminating in their affiliations (Snyder, Horsch, & Childs, 1997). Accordingly, highly aggressive children were found to spend the large majority of their time with children who were also aggressive. A more recent study (again, mixed-gender) followed children longitudinally at four time points across kindergarten and first grade (Snyder, Schrepferman, Oeser, Patterson, Stoolmiller, et al. 2005). . Particularly noteworthy was the availability of observational data of peer interactions, including coding of 'deviancy training' where peers responded positively (e.g., agreement, laughter, reciprocation of deviant talk) to talk about deviant content (e.g., stealing, cheating, lying, swearing, authority defiance). The findings showed that both deviant peer affiliations (who they 'hung out' with) and deviancy training (positive response to deviant talk) predicted growth in conduct problems over a one-year period. Findings from these studies show that not only are young aggressive children selective in affiliating with other aggressive children, but that these peer processes may contribute to development of aggressive, antisocial behaviors.

It remains an open question as to whether risk processes for antisocial behavior found in boys are also found in girls. Some theorists, particularly those in the juvenile justice field, have essentially called for a bifurcation and contend that gender-specific models are needed to explain the development of girls' antisocial behavior (Acoca, 1998; Bloom, 2003; Chesney-Lind & Pasko, 2004). In contrast, others maintain that risk processes for antisocial behavior are the same across gender groups, and that there is no need for gender-specific models (Fergusson & Horwood, 2002). One important question asked in this study is whether peer and parenting risk processes found in other studies are also seen in this sample of young girls.

One peer-related process that has shown some gender sensitivity is the role of opposite-gender peers in delinquent behavior. Studies show that although boys' antisocial activity generally occurs with same-gender peers, girls' delinquent activity is more linked with mixed and opposite-gender affiliations. In an early study of an all-female sample, Giordano (1978) found that girls' delinquency most often occurred in a mixed-gender context. Similarly, Warr (1996), reporting on data from the National Youth Study, found that whereas boys offended with other boys, girls' delinquency occurred in the company of both genders. Studies of mixed-gender samples also suggest that partners may play a relatively stronger role in instigating and influencing delinquent behavior for girls more so than for boys (Haynie, Giordano, Manning, & Longmore, 2005; Moon, Hecht, Jackson, & Spellers, 1999). In this way, whereas boys' delinquent behavior is linked with only same-gender peers, the delinquent activity of both genders appears to be linked with male affiliates. However, studies examining the gender of delinquent peers have focused on adolescent samples. The current study adds to the existing literature by evaluating links between the gender of peer affiliations and antisocial activity among young girls.

This study further adds to the literature in its examination of the use and outcomes of parenting practices across ethnic groups. Parents from different ethnic backgrounds may differ in their values and goals, and these differences may impact the expression of parenting practices (Deater-Deckard & Dodge, 1997). Cultural values fostered within African American families include a value on interdependence, perseverance, and collective goals (Barbarin, McCandies, Coleman, & Hill, 2005). Accordingly, African American parents may rely on a firm, 'no-nonsense', authoritarian parenting style (Brody & Flor, 1998). Such strategies may also have functional value as African American parents help their children deal with race-related stressors

(McLoyd, 1998). By comparison, goals and values within European American families that value individualism, competition, and achievement may promote greater use of democratic parenting strategies that emphasize reasoning and discussion. Clearly, these broad ethnic variations are not dichotomous, nor do they reflect demarcated, fixed boundaries, and there is considerable variability within ethnic groups. Nevertheless, parents from varying ethnic groups may ascribe different affective meanings to discipline strategies that may influence how a child interprets parenting strategies (Mason, Walker-Barnes, Tu, Simons, & Martinez-Arrue, 2004).

More important than mean level differences, however, is the question of whether predictive associations between parenting and behavior problems vary as a function of ethnicity. These studies have generally been conducted with mixed-gender samples and have focused on questions of ethnic (rather than gender) differences. Early on, Baumrind (1972) found that in contrast with European American families, an authoritarian parenting style was not associated with poor child outcomes in African American families. More recent debate has ensued about whether associations between harsh discipline and externalizing problems vary between African American and European American children. In a seminal study, Deater-Deckard, Dodge, Bates and Pettit (1996) found that the expected positive association between harsh discipline and externalizing problems held for European American children, but not for African American children. Furthermore, this pattern extended longitudinally into adolescence (Lansford, Deater-Deckard, Dodge, Bates, & Pettit, 2004). A number of studies have corroborated these findings (Gunnoe & Mariner, 1997; McLeod, Kruttschnitt, & Dornfeld, 1994), although other research has failed to find ethnic differences (Lau, Litrownik, Newton, Black, & Everson, 2006; McLoyd & Smith, 2002; Whiteside-Mansell, Bradley, Owen, Randolph, & Cauce, 2003). Further complicating the picture is that ethnic differences have sometimes only been apparent for teacher ratings of externalizing problems (e.g., Deater-Deckard et al., 1996; Polaha, Larzelere, Shapiro, & Pettit, 2004). Within this discussion, it is also important to recognize that any differences do not reflect mutually exclusive groups, but rather average differences within heterogeneous ethnic groups. With this caveat in mind, the study includes both parent and teacher ratings of disruptive behaviors and in this way, can further inform whether previous findings relate to the data source in understanding whether ethnicity moderates associations between parenting practices (harsh parenting in particular) and disruptive behavior.

The present study extends previous research by focusing on concurrent and longitudinal associations among peer deviance, parenting behaviors, and disruptive behavior within a population-based sample of young girls. Thus, the findings have implications for understanding the early development of these behaviors in an understudied population that is increasingly garnering the attention of researchers, practitioners, and policymakers. Given the scarcity of research on deviant peers among young girls, we first report on the prevalence and gender of these affiliations. We then determine whether there are ethnic differences in mean levels of parenting behaviors between African American and European American girls. We next evaluate the joint effects of parenting practices and peer delinquency, and consider the simultaneous and independent impact on disruptive behaviors. Next, we examine whether conduct problems vary as function of the gender composition of the reported problem-prone peers, controlling for the level of peer delinquency and examining whether peer delinquency moderates the impact of gender composition on disruptive behaviors. Last, we determine whether parenting strategies show similar patterns of association with disruptive behavior for European American and African American girls. Based on previous research, we hypothesize that harsh parenting, poor parent-child communication and limited time together, low parental warmth, and peer delinquency will be related to disruptive behaviors. We further hypothesize that girls whose problem-prone peers are mixed-gender will show higher levels of conduct

problems. Given the equivocal nature of findings on ethnic differences in parenting, we do not have specific hypotheses.

## Methods

### Participants

The participants were from the Pittsburgh Girls Study (PGS; Hipwell, Loeber, Stouthamer-Loeber, Keenan, & Raskin-White, 2002), a multi-cohort, longitudinal study of the development of conduct problems and delinquency among girls. The PGS is comprised of 2,451 girls who were recruited into four age-based cohorts at ages 5, 6, 7, and 8. The girls were selected based on a two-step enumeration of 103,238 households in the city of Pittsburgh. In the first step, city neighborhoods were divided into 23 'disadvantaged' (>25% of households living in poverty) and 66 'non-disadvantaged' neighborhoods based on 1990 Census data. Next, the disadvantaged neighborhoods were sampled at a rate of 100%, whereas the advantaged neighborhoods were sampled at 50%. This sampling methodology was applied in order to increase the prevalence of externalizing problems and has been used in other studies (Bird et al., 1988; Costello et al., 1996). This process resulted in the identification of 3,241 girls ages 5 – 8 (representing 83.7% of the girls identified by the 2000 Census).<sup>1</sup> Of the 2,876 who were actually age-eligible and able to be located, 2,451 (85.3%) agreed to participate (see Hipwell et al. 2002 for more detailed information). Given the over-sampling of disadvantaged neighborhoods, the analyses were conducted using weighting procedures in order for the results to be representative of girls living in Pittsburgh. Specifically, a weight variable was calculated by comparing the proportions of neighborhoods represented in the study to the proportions of neighborhoods in Pittsburgh, based on data from the 2000 Census. This weight was then applied in order to correct for the over-representation of low-income neighborhoods such that findings were reflective of girls living in Pittsburgh.

This study relied on data from girls in the youngest cohort (N = 588; age 5 in their first year of the PGS) in their third and fourth years of the study, or when they were 7 and 8 years old. We selected this cohort and age (rather than the younger ages) because this period is when the data on the measures of interest, most notably the peer delinquency measure, were first available. The retention of participants was very high over the follow-up assessments. Of the original 588 girls in the cohort, either parent or child data were available on 95% of the potential participants at ages 7 and 8.

Of the 588 girls in this cohort, 51.3% were African American, 43.0% were European American, and 5.7% were of another race (e.g., multiracial, Asian, Native American, or Pacific Islander). Given our interest in potential ethnic variations, we restricted our analyses to African American and European American girls and families (n = 576). By caregiver report, 31% of the families received public assistance and 41% percent were single-parent households. A little less than half of the parents (48%) reported having less than 12 years of education.

### Procedures

All study procedures were approved by the University of Pittsburgh Institutional Review Board. Written informed consent from the caregiver and verbal assent from the child were obtained prior to data collection. Interviews were completed in the home with the parent/caregiver and daughter separately by trained interviewers. The large majority of parent respondents were biological parents (94%). Six percent of the respondents were other caregivers (e.g., aunt, uncle, grandparent, or adoptive parent). Of the biological parents, 94%

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<sup>1</sup>The enumeration process (to identify neighborhood status) was completed in 1999, therefore it was based on 1990 Census data. The 2000 Census data was then used to determine the proportion of girls age 5–8.



were the mother (88% of the entire sample).<sup>2</sup> The interview questions were read aloud and the responses were entered by the interviewer into a laptop computer. The participants were reimbursed for their involvement in the study.

## Measures

The measures in the current study included assessments of peer delinquency, parenting practices, and conduct/oppositional problems. Parenting practices were rated by the parent/caregiver; girls provided ratings of peer delinquency. For all parenting measures, the items were averaged to create a continuous score. Parent ratings were available for both conduct and oppositional problems; child ratings were available only for conduct problems. Also analyzed were teacher ratings of conduct and oppositional problems. All measures were coded such that a high score indicates poorer functioning. All of the measures have been used extensively in the Pittsburgh Youth Study (Loeber, Farrington, Stouthamer-Loeber & van Kammen, 1998). Covariates included binary ratings of parent education (less than 12 years of education/12 years or greater, public assistance – yes/no, and single parent status – yes/no, ethnicity – African American or European American).

**Peer delinquency and gender of delinquent peers**—The girls were asked a series of 10 questions about the degree to which their friends were involved in a variety of delinquent behaviors (e.g., ‘taken something from school that belonged to a teacher or to other students’, ‘hit an adult, like their teacher or a parent’, ‘hit other kids or gotten into a physical fight with them’). The measure was adapted from a version used in the Pittsburgh Youth Study (Loeber, Farrington, Stouthamer-Loeber, & van Kammen, 1998). The items were rated on four-point scales (0 = none of their friends; 1 = one of them; 2 = some of them; 3 = all of their friends). The items were summed to create a total score. The scale evidenced very good reliability ( $\alpha = .85$ ).

For each of the peer delinquency items that were endorsed (i.e., score of 1 or more), the girls were also asked the gender of the friends (boy, girls, both). In other words, the gender of a girl’s delinquent friends was rated only for those items where having delinquent peers were endorsed. Each of the possible 10 items was coded as follows: 0 = all girls; 0.5 = mixed boys and girls; 1 = all boys. The endorsed items were then averaged to create a *gender of delinquent peers* composite (range = 0 to 1; higher scores indicating that more endorsed items were boys).

**Harsh parenting**—Parents completed the Conflicts Tactics Scale: Parent-Child version (CTS-PC; Straus, Hamby, Finkelhor et al., 1998), a commonly used measure of harsh parenting. The items began with the stem ‘when your child does something that she is not allowed to, how often do you...’ and were scored on a three-point scale (1 = often; 2 = sometimes; 3 = never). We used a six-item scale of verbally and physically aggressive behaviors from the parent to the child (e.g., ‘call her dumb or lazy’, ‘spank or hit’, ‘shout, yell, or scream at her’). The internal consistency of the scale was acceptable ( $\alpha = .73$ ).

**Low parental warmth**—was assessed using six items from the Parent-Child Rating Scale (Loeber et al., 1998). The parent was asked about positive (e.g., felt proud of her, enjoyed spending time with her) feelings towards their daughter. Each item was rated on a 3-point scale (1=almost never, 2=sometimes, 3=often) and scored such that a higher score indicated low warmth. The scale evidenced adequate reliability ( $\alpha = .68$ ).

**Positive parenting**—Parents/caregivers completed the nine-item Positive Parenting Scale (PPS; Loeber et al., 1998). The items began with the stem ‘when your child has done something

<sup>2</sup>The analyses were repeated in the subsample of biological mothers, and the pattern of results was consistent with the larger sample.

you like' and were followed with various affirming and encouraging behaviors from the parent (e.g., 'give a hug, pat on the back, or kiss', 'say something nice about it; give praise or approval'). The items were rated on a four-point scale (0 = a lot; 1 = sometimes; 2 = almost never; 3 = never). The reliability of the scale was acceptable ( $\alpha = .76$ ).

**Supervision and involvement**—Parents/caregivers completed the Supervision and Involvement Scale (SIS) that included subscales assessing communication, parent-child time together, and supervision (Loeber, et al., 1998). The *communication* scale consisted of five items. Four of the items asked specific questions about when or how often the parent talked with his/her daughter; these items were rated on four-point scales (two 'when' items: 1=yesterday; 2 = within the last week; 3 = within the last month; 4 = more than one month ago; two 'how often' items: 1 = almost every day; 2 = at least once a week; 3 = at least once a month; 4 = less than once a month). One item asked about how often the parent talked with the daughter about school; this item was rated on a three-point scale (1 = often; 2 = sometimes; 3 = almost never). This last item was re-scaled to a four-point scale in order to maintain a consistent metric. The reliability of this scale was acceptable ( $\alpha = .73$ ).

The *time together* scale was assessed with seven items. The items began with the stem 'how often do you and your child' and included a variety of activities (e.g. 'have a friendly chat', 'do things together on a weekend'). Parents were asked two questions each about how much time they were together and how much of that time they were doing something together on weekdays and weekends (for a total of four items). These items were rated by parents on a five-point scale (1=30 minutes or less, 2=30 – 60 minutes, 3=1–3 hours, 4=3–6 hours, 5=more than 6 hours). Three items (find time to listen when she wants to talk to you, do things together at home, have a friendly chat) were rated on a three-point scale (1=almost never, 2=sometimes, 3=often). These three items were re-scaled to a five-point scale in order to maintain a consistent metric. The reliability of this scale was acceptable ( $\alpha = .74$ ).

The supervision scale was not included in analyses due to low internal consistency ( $\alpha = .53$ ).

**Conduct/oppositional problems**—Conduct and oppositional problems were assessed using the Child Symptom Inventory (CSI-4, Gadow & Sprafkin, 1994). The CSI-4 items assessed the severity of clinical symptoms of Conduct Disorder (CD; 11 items – e.g., started physical fights, destroyed property, bullied/threatened/intimidated others) and Oppositional Defiant Disorder (ODD; 8 items – e.g., taken out anger on others; blamed others for misbehavior, refused to do what told) consistent with DSM-IV criteria (American Psychiatric Association, 1994).<sup>3</sup> The parent and child items were scored on 4-point scales (1='never' to 4='very often'). Parent ratings were available for both CD ( $\alpha$ 's = .70) and ODD ( $\alpha$ 's = .83) problems; child ratings were available only for CD problems ( $\alpha$ 's = .70). For conduct problem ratings, we derived a 'best estimate' score by taking the higher of the parent or child rating for each item. This multi-informant procedure assumes that each rater provides specific knowledge about a child's behavior, and has been used with other measures of child psychopathology (Frick et al., 2005; Loney & Lima, 2003). A composite CD/ODD score was then derived by summing across the CD and ODD scores.

Teachers completed the same eight ODD CSI items that were administered to the parent. These items were scored on a 4-point scale ranging from 0 to 3. To evaluate conduct problems, teachers rated eight items at age 7 and nine items at age 8 (the truancy item was not available until the age 8 assessment). With two exceptions, CD was assessed using items from the CSI and scored on a 4-point scale ranging from 0 to 3. Two behaviors (physical fights and

<sup>3</sup>Although CSI includes a small number of additional items, we used 11 items in order to maintain consistency across the raters and the age 7 and age 8 assessment points

destruction of property) were assessed via teacher ratings of the girls' behavior on the Self Reported Antisocial Scale (SRA; Loeber et al., 1989). These items were rated on a 3-point scale ('never,' once/twice,' 'more often'). The 'physical fights' behavior was assessed using two separate SRA items ('hit, slapped, shoved, pulled hair of teacher/grown up'; 'hit, slapped, shoved, pulled hair of kid'). The higher score of the two items was used for this behavior. These SRA items ('physical fights' and 'destruction of property') were then standardized to match the 0 to 3 scoring of the other items. All items were then summed to create a CD composite.

## Results

### Descriptives

A central issue concerns the extent to which young girls report having friends involved in delinquent activity. The majority of girls reported that one or more of their friends were involved in some type of deviant activity; at ages 7 and 8, 68% and 70% of girls reported that at least one of their friends was involved in any of the ten delinquent behaviors. There was considerable variability across the individual items, with reports of delinquent peer activity ranging from 7% (i.e., 93% reported 'none') to 52% (i.e., 48% reported 'none') across the different behaviors. Endorsements of peer delinquency were highest for more minor delinquent acts, such as having friends who 'lied and disobeyed' (48% and 52%) and who 'hit other kids' (41% and 46%). Nevertheless, about 1 in 10 girls reported that at least one of their friends was engaged in more serious behaviors, such as drinking alcohol and stealing.<sup>4</sup>

Next, we present descriptive data on the gender of the girls' delinquent peers through an examination of the frequency distribution of the gender composition variable. Across the endorsed items, 39% of the girls reported that their delinquent peers were all girls (i.e., all of the endorsed items were girls, for a composite score of 0). A much smaller proportion (13%) reported that their delinquent peers were all boys. The remainder of the girls – nearly half (48%) - reported a mix of boys and girls (composite score > 0 and < 1).

Table 1 presents the means, standard deviations, and correlations for the study variables by ethnicity. With some exceptions, the general pattern of associations did not vary across African American and European American girls. The association between public assistance and parent education was significant for European American girls only. By comparison, the correlations between peer deviance and CD/ODD were significant only for African American girls. The parenting scales exhibited low to moderate correlations between the different domains. The associations between peer delinquency and the parenting scales were generally low. Correlations between the parenting scales and conduct/oppositional problems were highest for low parental warmth and harsh discipline.

We were also interested in whether parents of African American and European American parents reported mean level differences in parenting practices. Using bivariate t-tests, parents of African American girls reported higher scores in three of the five domains: poor communication,  $t(546) = -6.40, p < .001$ , harsh parenting,  $t(546) = -7.14, p < .001$ , and low parental warmth,  $t(546) = -5.65, p < .001$ . Ethnic differences were not apparent for positive parenting and time together. The analyses were then repeated using analyses of variance, controlling for parent education, public assistance, and single parent status. The results were consistent with the bivariate results.

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<sup>4</sup>Reports of delinquent activity across the individual items are available from the first author.



## Parenting Behaviors and Peer Deviance as Predictors of Conduct/Oppositional Behaviors

For our first research question, we examined parenting behaviors and peer delinquency as predictors of conduct/oppositional problems. Separate analyses were conducted for parent/child ratings and for teacher ratings. We examined this question concurrently at age 7, as well as longitudinally with age 7 parenting and peer deviance as predictors of conduct/oppositional problems at age 8 controlling for conduct/oppositional problems at age 7 (see Table 2). The analyses controlled for ethnicity, parental education, public assistance, and single parent status. Simultaneous regressions were conducted, with all variables in the model at the same time.

For parent/child ratings of conduct/oppositional problems, concurrent analyses at age 7 revealed that low parental warmth and harsh parenting were significant predictors of girls' conduct/oppositional problems. Girls who reported having more delinquent friends also exhibited more conduct/oppositional problems. A more stringent test of the effects of peer delinquency and parenting entailed examining predictive associations prospectively, controlling for baseline levels of conduct/oppositional problems. These results showed that both harsh parenting and low parental warmth at age 7 continued to predict conduct/oppositional problems one year later. In contrast, peer deviance at age 7 no longer predicted conduct/oppositional problems one year later. Results for the other parenting domains were not significant.

Prediction of teacher ratings revealed a somewhat different pattern of association between parent behaviors and peer deviance and conduct/oppositional problems. For concurrent analyses, only peer delinquency was related to teacher ratings of conduct/oppositional problems. However, controlling for conduct/oppositional problems at age 7, only low parental warmth at age 7 predicted higher levels of conduct/oppositional problems at age 8. Prospective results for peer delinquency and the other parenting domains were not significant.

## Prediction of Conduct/Oppositional Problems from Peer Delinquency and the Gender of Delinquent Peers

Next, we were interested in, along with the level of peer delinquency, whether the gender of girls' delinquent peers contributed to the prediction of conduct/oppositional/conduct problems. We were further interested in whether the gender of girls' delinquent peers amplified the impact of peer delinquency on conduct/oppositional problems. As noted, we created a composite score that indicated the gender composition of their delinquent peers, with a higher score indicating more boys and a lower score indicating more girls. We conducted multiple regression analyses within the subsample of girls reporting having delinquent peers. Independent variables were peer delinquency and the gender composition of the delinquent peers. To test moderation, we created an interaction term of the product of peer delinquency and the gender composition of a girl's delinquent peers. We examined these predictive relations both concurrently at age 7 and prospectively at age 8, controlling for age 7 conduct/oppositional problems (see Table 3).

As expected, peer delinquency was concurrently associated with child/parent ratings of conduct/oppositional problems,  $t(335) = 3.30, p < .01$ . The gender composition of delinquent peers did not contribute to the prediction of conduct/oppositional problems,  $t(335) = -1.74, ns$ . In addition, the gender composition of the delinquent peers did not moderate the effect of peer delinquency on conduct/oppositional problems,  $t(335) = -0.92, ns$ . In the prospective analyses, peer delinquency at age 7 no longer predicted child/parent ratings of conduct/oppositional problems at age 8 (controlling for prior levels of conduct/oppositional problems,  $t(327) = 0.24, ns$ ). The longitudinal effects for gender composition,  $t(327) = 0.85, ns$ , and the interaction of peer delinquency and gender composition,  $t(327) = 1.10, ns$ , were also not significant. For prediction of teacher ratings of conduct/oppositional problems, concurrent and prospective results for all variables were non-significant (main effect peer delinquency - age

7:  $t(307) = 1.83, ns$ ; age 8:  $t(273) = 1.28, ns$ ; main effect gender of delinquent peers - age 7:  $t(307) = -0.35, ns$ ; age 8:  $t(273) = -0.04, ns$ ; interaction of these two variables - age 7:  $t(307) = -0.35$ ; age 8:  $t(273) = -0.04, ns$ .

### **Ethnicity as a Moderator of the Link between Parenting Behaviors and Conduct/Oppositional Problems**

For our last research question, we examined whether ethnicity moderated the association between parenting practices and conduct/oppositional problems, both concurrently at age 7 and longitudinally predicting to age 8 (controlling for age 7 conduct/oppositional problems). Consistent with previous studies (Deater-Deckard et al., 1996), we tested moderation by creating an interaction term of ethnicity (European-American vs. African-American) and parent behaviors. We ran separate models for parent/child and teacher ratings of conduct/oppositional problems.

For parent/child ratings, the results from the concurrent model indicate that harsh discipline and low parental warmth were significantly related to higher levels of conduct/oppositional problems (see Table 4). However, associations between parenting practices and conduct/oppositional problems were not moderated by ethnicity. In other words, the effect of parenting behaviors on conduct/oppositional problems appeared to operate similarly for European-American and African-American girls.<sup>5</sup> For the prospective analyses, low parental warmth continued to have a significant and incremental effect on conduct/oppositional problems at age 8, even after controlling for conduct/oppositional problems at age 7. In addition, the interaction of ethnicity and positive parenting was significant. We then ran the regression analyses separately for European American and African American girls. The effect of positive parenting on conduct/oppositional problems was not significant for either ethnic group (European American:  $t(1,233) = 1.76, ns$ , African American  $t(1,298) = -1.49, ns$ ).

For teacher ratings of conduct/oppositional problems, neither the main effects of parenting nor the interactions of parenting with ethnicity were significant for either concurrent or prospective analyses.

### **Discussion**

This study extends previous research done on boys in its examination of peer and parenting risk processes related to childhood onset of disruptive behaviors in a large, ethnically diverse sample of 7 and 8 year old girls. As has been found with boys, peer and parent risk factors were found to be important predictors of the evolution of disruptive behavior among young girls. In this way, the findings inform the small but growing knowledge base on the early development of these behaviors among a highly understudied sample.

Two specific domains of parenting were found to contribute to the prediction of early disruptive behavior – low parental warmth and harsh discipline. These findings support contentions that risk processes for girls' antisocial behavior are similar to those found in boys (Moffitt, 1993; Webster-Stratton, 1996). The salience of these parenting domains is further buttressed by the more stringent test of prospective associations. Even after controlling for prior levels of disruptive behaviors (which explained a good deal of the variance), harsh parenting and low parental warmth at age 7 continued to predict disruptive behaviors one year later.

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<sup>5</sup>Separate analyses were also conducted for each parenting variable separately, as well as with the specific spanking item on CTS. With the exception of the significant interaction between positive parenting and ethnicity that was found previously, all other interactions between parenting practices and ethnicity were non-significant in predicting conduct/oppositional problems. When positive parenting was analyzed separately by gender (as the only parenting variable in the model), the association with conduct/oppositional problems was significant for European American girls, but not for African American girls.

These findings corroborate the importance of these two parenting domains in children's adjustment (Bradley & Corwin, 2007; Denham, Workman, Cole, Weissbrod, Kendziora, & Zahn-Waxler, 2000). Harsh treatment by parents serves as a model for aggressive behavior and contributes to coercive parent-child interactions (Reid, Patterson, & Snyder, 2002). Furthermore, children internalize standards for behavior and cognitive and emotional modulating through exposure to harsh interactions with parents, such as yelling, arguing, and slapping. In this way, punitive, negative discipline by parents leads to cognitive and emotional dysregulation by children and displays of anger and defiance (Dodge & Pettit, 2003; Grolnick & Farkas, 2002). Further contributing to children's behavioral and emotional dysregulation is a lack of parental warmth. The failure of parents to form a warm, supportive relationship with their child impedes the development of emotional understanding and empathy (Denham et al., 2000; Olson, Sameroff, Kerr, Lopez, & Wellman, 2005). This lack of sensitivity hampers children's ability to share and consider the feelings of others, which further hinders parent-child communication and cooperation. And as shown in this study, these two parenting domains are orthogonal to each other, with each providing a unique contribution in predicting disruptive behaviors.

Independent of contributions by parenting practices, peer delinquency also made an additive contribution to girls' disruptive behaviors. In this way, the findings corroborate documented findings from studies of adolescents (e.g., Elliot & Menard, 1996; Pratt & Cullen, 2000; Warr, 2002), as well more recent studies of younger children (Snyder et al., 1997, Snyder et al., 2005). However, the more stringent prospective test of predictive associations controlling for baseline levels of conduct/oppositional problems failed to find effects for peer delinquency. In part, the lack of prospective findings may be due to the high temporal stability of prior conduct/oppositional problems. The lack of longitudinal findings may also reflect a lack of stability and constancy in girls' delinquent peer affiliations. Particularly in childhood, girls' closest and more intimate friends are most likely to be girls, and girls are less likely to be delinquent than boys (Maccoby, 1998). Thus, affiliates who are delinquent may be more peripheral and transient in girls' peer networks, and therefore less likely to have an enduring impact on behavior. Nevertheless, we do see evidence for concurrent associations with disruptive behaviors. Further research is needed to gain a more in-depth understanding of the role of peer delinquency in girls' antisocial behavior.

In terms of peer delinquency, the study also delved further into characteristics of these affiliates, such as type of behavior and gender of the peers. Affiliations with problem-prone peers were not uncommon – most of the girls reported that at least one of their friends was involved in some type of delinquent activity. As expected given the young age and gender of the sample, these problem-prone peers were most likely to be involved in minor delinquent acts, such as hitting and noncompliance. Less anticipated, however, was that a sizeable minority of the girls (about 1 in 10) reported having friends who were involved in more serious delinquent activity, such as alcohol use and stealing. These findings suggest the need to recognize the less than benign nature of young girls' peer relations.

The results also revealed a fair amount of variability in the gender of girls' problem-prone friends. Across the individual delinquent acts, nearly half of the girls reported that their delinquent peers were a mix of girls and boys. A somewhat smaller proportion, about 4 in 10, reported that their delinquent peers were all girls, with the remainder reporting having all male delinquent peers. These findings are intriguing and appear to run contrary to developmental research outlining the sex-segregated nature of children's peer relations (Maccoby, 1998; Thorne, 1993; Underwood, 2003). The basic tenet of these theories is that boys and girls manifest distinct play styles and cultures. For example, girls' encounters emphasize social relationships, while boys' social groups center on structured games and activity. Consequently, children in middle childhood show social preferences for same-sex playmates and their peer

groups are largely segregated by gender. One possible explanation for these findings is that the girls were reporting not so much on close friendships, but rather on more diffuse, less intimate social affiliations. Unfortunately, the study did not have more detailed measures of peer relations, such as friendship quality, frequency of contact, peer nomination ratings, or peer network structure. As such, it was not possible to ascertain the relative position and importance of these affiliative ties and how girls' delinquent peers were embedded in their broader social context. Nevertheless, the results build on work by Snyder et al. (1997, 2005) in confirming that young children do indeed affiliate with delinquent peers, and add to the literature in showing that young girls are associating with problem prone peers of both genders.

Although young girls were found to have delinquent peers, the gender of these peers did not contribute to their disruptive behavior. Instead, the findings showed that the impact on disruptive behavior was due to the extent or number of delinquent peers, rather than whether the peers were boys or girls. It may be that opposite gender peers are more likely to be influential in early adolescence, as compared to in childhood when girls' social ties are characterized by more intimate same-gender friends who will be less antisocial than male affiliates (Maccoby, 1998). By comparison, in the transition to adolescence, affiliations shift from same-sex to mixed-gender peer groups and romantic partners emerge as new, salient relationship contexts (Brown, 1999; Connolly, Furman, & Konarski; 2000). Young adolescents in particular are attracted to the allure of this new social context, and opposite-gender affiliations may represent an opportunity for involvement in unfamiliar, yet enticing risky behaviors (Giordano, Manning, & Longmore, 2005; Shulman & Scharf, 2000). These peer networks also include a mix of antisocial and prosocial peers, and children are differentially influenced by individuals in their social networks (Haynie, 2002).

One additional contribution of this study is its examination of outcomes of parenting practices across ethnic groups. The findings here do not provide any support for differential associations between harsh parenting and disruptive behaviors, and all tests of moderation were non-significant. It is difficult to reconcile the equivocal findings seen across various studies. Since the original findings by Deater-Deckard et al. (1996), a number of other studies have failed to validate those results (Kilgore, Snyder, & Lentz, 2000; Polaha et al., 2004; Whiteside-Mansell et al., 2003). Particularly noteworthy are findings from a population-based sample (National Youth Study; McLoyd & Smith, 2002) and a large multi-site sample of maltreated children (Longitudinal Studies of Child Abuse and Neglect [LONGSCAN]; Lau et al., 2006). Clearly, additional work is needed to evaluate the generalizability of associations between parenting (in particular, harsh discipline) and disruptive behaviors across ethnic groups. More importantly, studies are needed that move beyond the question of ethnicity as a moderator to more detailed study of the meaning and intention of parenting across ethnic groups, and how these translate into actual behaviors (Mason et al., 2004). In this way, it is important to discern the context and meaning of parenting behaviors and how cognitive and affective construals are related to children's adjustment (Lansford, Chang, Dodge, Malone, Oburu, Palmérus et al., 2005). Moreover, within group homogeneity should not be assumed, and work is needed that explores patterns of association within ethnic groups (Hill, 2006). In this way, studies can uncover the within group relations among ethnic, socioeconomic, and cultural factors and how interactions among these characteristics impact children's outcomes.

With a few exceptions, parenting practices and peer delinquency were not significant predictors of teacher ratings of disruptive behaviors. In part, this may reflect the source of the data. In other words, stronger associations would be expected when parent ratings contributed to both the predictor and outcome variables, as compared to when the outcome was based on teacher ratings. Additionally, a child's functioning across home and school settings may differ in the frame of reference and the behavior itself. It is well established that parent and teacher ratings of children's behavior show only low to moderate correlations (Achenbach, McConaughy, &

Howell, 1987; Youngstrom, Loeber, & Stouthamer-Loeber, 2000). Teachers are more likely to evaluate children based on same-age classmates, whereas parent ratings may reflect different behavioral expectations, values, and other background characteristics. Furthermore, children's behavior may vary across home and school, and children may misbehave in only one setting (Mattison, Carlson, Cantwell, & Asarnow, 2007).

The study does have a number of limitations. First, this study included only girls, and therefore we were not able to make any conclusions on whether these patterns are similar or different to boys. Furthermore, data were not available on other important peer domains that have been shown to be important contributors to antisocial activity. Specifically, the study did not include sociometric or social network measures that would provide a more fine-grained analysis of rejection by peers, the total proportion of peers that were male, and the relative centrality and the total proportion of prosocial and antisocial peers. The peer deviance measure also relied on girls' own reports of their friends, and such ratings are confounded by a child's perceptions of their own involvement in problem behaviors (Bagwell, Coie, Terry, & Lochman, 2000). Our conclusions were also based in part on concurrent data which limits the inference or any causal influences. As a result, these data are limited in the extent to they can go beyond suggesting predictive relations worthy of additional investigation. Indeed, studies have shown reciprocal influences between parenting practices and children's behavior, and parents may respond to girls' disruptive behavior by becoming increasingly harsh and negative (Huh, Tristan, Wade, & Stice, 2006; Laird et al., 2003).

Despite these limitations, the large, population-based sample and the young age of the girls are features that make these findings important. The findings substantiate the important contribution of harsh parenting and low parental warmth to young girls' disruptive behaviors. The results further contribute to the debate about ethnic differences in associations between parenting behaviors and disruptive behaviors in failing to find variations between African American and European American girls. These data also suggest that affiliations with problem-prone peers are present in childhood among girls and support the need for attention to this issue at younger ages than is currently the norm.

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Table 1

Study Variables: Means, Standard Deviations, and Correlations by Ethnicity

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>European Ame. – Mean</b>	<b>0.38</b>	<b>0.21</b>	<b>0.22</b>	<b>1.12</b>	<b>1.65</b>	<b>1.35</b>	<b>1.07</b>	<b>1.48</b>	<b>2.00</b>	<b>0.42</b>	<b>25.80</b>	<b>25.81</b>	<b>2.19</b>	<b>0.82</b>
<b>European Ame. – S.D.</b>	<b>0.49</b>	<b>0.40</b>	<b>0.41</b>	<b>0.25</b>	<b>0.45</b>	<b>0.28</b>	<b>0.14</b>	<b>0.30</b>	<b>2.94</b>	<b>0.40</b>	<b>4.47</b>	<b>4.12</b>	<b>4.15</b>	<b>2.05</b>
1. Parent education	--	0.33***	0.05	0.05	-0.06	-0.09	0.10	0.07	0.12	0.12	-0.00	0.03	0.10	0.06
2. Public assistance	0.09	--	0.16*	0.07	-0.01	-0.03	0.09	-0.00	0.10	0.01	0.08	0.16*	0.01	0.11
3. Single parent	0.05	0.13*	--	0.17*	0.10	0.07	0.09	0.08	0.04	0.07	0.10	0.08	0.21**	0.15*
4. Parent-child communication	0.12*	0.05	0.12*	--	0.46***	0.17**	0.23***	0.07	0.13	0.01	0.05	0.13*	0.20**	-0.09
5. Parent-child time together	0.01	-0.02	0.05	0.34***	--	0.29***	0.17**	-0.02	-0.03	0.08	0.14	0.17**	0.11	0.03
6. Positive parenting	-0.01	-0.03	0.01	0.21***	0.25***	--	0.05	-0.03	0.03	0.03	0.00	0.03	0.06	-0.06
7. Parent warmth	0.12*	0.07	0.10	0.34***	0.36***	0.18**	--	0.07	-0.06	0.01	0.18**	0.29***	0.21**	0.16*
8. Harsh discipline	-0.05	0.09	0.09	0.04	0.14*	0.09	0.02	--	0.06	0.14	0.11	0.17**	0.09	0.11
9. Peer deviance—age 7	0.10	0.11	0.12*	0.02	0.01	-0.07	0.04	0.13*	--	0.17	0.00	0.05	-0.09	0.00
10. Gender composition- delinquent peers	-0.07	-0.01	-0.15*	-0.06	-0.15*	-0.11	-0.12	0.02	0.02	--	-0.04	-0.09	0.03	0.03
11. CD/ODD-parent/child ratings-age 7	0.04	0.17**	0.18**	0.09	0.07	0.10	0.25***	0.21***	0.26***	-0.09	--	0.57***	0.17*	0.22***
12. CD/ODD—parent/child ratings-age 8	0.07	0.11	0.14*	0.12*	0.10	0.03	0.22***	0.19***	0.18**	0.03	0.65***	--	0.13	0.10
13. CD/ODD-teacher ratings- age 7	0.10	0.01	0.14*	0.04	-0.04	-0.01	0.05	-0.00	0.14*	-0.14*	0.23***	0.20**	--	0.42***
14. CD/ODD-teacher ratings- age 8	0.09	0.04	0.14*	0.08	0.10	0.01	0.14*	0.05	0.18**	-0.05	0.26***	0.19**	0.56***	--
African Ame. – Mean	0.56	0.40	0.57	1.29	1.74	1.35	1.16	1.67	5.16	0.38	26.46	26.28	4.61	2.52
African Ame. – S.D.	0.50	0.49	0.50	0.42	0.57	0.32	0.23	0.31	5.51	0.35	5.63	5.50	5.72	4.18

Note: The first four variables were coded 0/1 as follows: race – European-American/non European-American; parent education – 12<sup>th</sup> grade education or higher/less than 12<sup>th</sup> grade education; public assistance – no/yes, single parent – no/yes. The parenting measures were coded such that a higher score indicates poorer parenting.

Correlations for European American girls are above the diagonal; correlations for African American girls are below the diagonal.



**Table 2**  
 Regressions: Parenting Behaviors and Peer Deviance and Associations with Conduct/Oppositional Problems

	CD/ODD-Parent/Child Ratings						CD/ODD-Teacher Ratings					
	Age 7			Age 8			Age 7			Age 8		
	t	$\beta$	SE	t	$\beta$	SE	t	$\beta$	SE	t	$\beta$	SE
Ethnicity	-2.78**	-0.14	0.50	-1.25	-0.05	0.40	2.54*	0.13	0.53	1.29	0.06	0.34
Low education	-1.17	-0.05	0.44	-0.32	-0.01	0.35	2.40*	0.11	0.47	0.55	0.02	0.30
Public assistance	1.47	0.07	0.50	0.37	0.01	0.40	-0.51	-0.02	0.52	1.43	0.06	0.33
Single parent	2.20*	0.10	0.48	0.08	0.00	0.39	2.60**	0.13	0.50	0.85	0.04	0.32
Communication	-0.36	-0.02	0.73	0.66	0.03	0.58	1.02	0.05	0.75	-0.39	-0.02	0.46
Time together	0.61	0.03	0.49	0.83	0.03	0.40	-0.77	-0.04	0.51	1.44	0.07	0.33
Positive parenting	-1.48	-0.07	0.81	-0.16	-0.01	0.65	-0.88	-0.04	0.86	-1.82	-0.09	0.54
Parent warmth	3.82***	0.18	1.24	1.98*	0.08	1.00	1.24	0.06	1.32	2.11*	0.10	0.82
Harsh parenting	5.47***	0.24	0.70	3.44***	0.14	0.57	0.89	0.04	0.73	1.16	0.05	0.45
Peer dev - age 7	4.03***	0.18	0.05	0.95	0.04	0.04	2.32*	0.11	0.05	1.56	0.07	0.03
CD/ODD - age 7	--	--	--	13.39***	0.53	0.04	--	--	--	10.23***	0.45	0.03

\*  $p < .05$

\*\*  $p < .01$

\*\*\*  $p < .001$

**Table 3**  
Ethnicity as a Moderator of the Association between Harsh Discipline and Conduct/Oppositional Problems

	Antisocial Behavior-Parent/Child Ratings						Antisocial Behavior-Teacher Ratings					
	Age 7			Age 8			Age 7			Age 8		
	t	$\beta$	SE	t	$\beta$	SE	t	$\beta$	SE	t	$\beta$	SE
Ethnicity	-1.38	-0.47	3.51	1.35	0.39	2.72	1.98*	0.76	3.85	-1.23	-0.45	2.44
Low education	-0.84	-0.04	0.44	0.37	0.01	0.34	2.65**	0.13	0.47	0.68	0.03	0.31
Public assistance	2.53*	0.11	0.48	0.93	0.03	0.37	-0.38	-0.02	0.52	1.83	0.08	0.34
Single parent	2.61**	0.12	0.47	-0.18	-0.01	0.37	2.83**	0.14	0.51	1.32	0.06	0.33
Communication	-0.88	-0.08	1.34	0.13	0.01	1.03	0.46	0.05	1.58	-0.29	-0.03	0.98
Time Together	1.42	0.11	0.77	0.42	0.03	0.59	0.10	0.01	0.94	0.47	0.03	0.58
Positive Parenting	-0.69	-0.05	1.12	1.70	0.09	0.86	-0.18	-0.01	1.20	-1.67	-0.11	0.74
Parent Warmth	2.03*	0.16	2.08	2.67**	0.17	1.60	1.74	0.15	2.29	0.51	0.04	1.41
Harsh parenting	2.84**	0.17	0.97	1.60	0.08	0.75	0.42	0.03	1.04	0.57	0.04	0.65
Ethnicity $\times$ communication	0.79	0.17	1.60	0.55	0.10	1.21	0.12	0.03	1.81	0.22	0.05	1.12
Ethnicity $\times$ time together	-1.46	-0.27	1.00	-0.09	-0.01	0.78	-0.61	-0.13	1.22	1.22	0.25	0.80
Ethnicity $\times$ positive parenting	-0.43	-0.09	1.59	-2.28*	-0.42	1.24	-0.87	-0.21	1.72	-0.16	-0.04	1.13
Ethnicity $\times$ parent warmth	1.14	0.34	2.57	-1.21	-0.30	1.97	-1.08	-0.36	2.83	0.92	0.29	1.77
Ethnicity $\times$ harsh parenting	1.21	0.28	1.38	0.92	0.18	1.07	0.11	0.03	1.47	0.25	0.06	0.93
Conduct/oppositional	--	--	--	15.10***	0.55	0.03	--	--	--	8.97***	0.40	0.08

\*  $p < .05$

\*\*  $p < .01$

\*\*\*  $p < .001$ .

Note: SE = standardized error