# Parenting and Parent Predictors of Changes in Child Behavior Problems

# PARENTING AND PARENT PREDICTORS OF CHANGES IN CHILD BEHAVIOR PROBLEMS

A Thesis Presented

by

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Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

MASTER OF SCIENCE

February 2011

Clinical Psychology

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ABSTRACT

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FEBRUARY 2011

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Behavior problems are common during early childhood, and while many children will outgrow them, others will continue to have substantial difficulties. Unfortunately, too little is known about which children will exhibit continued difficulties, making it difficult to intervene before maladaptive behavior becomes entrenched. A number of parenting and parent characteristics, including ineffective discipline, maternal depression, parenting stress, and limited social support have consistently been found to be associated with externalizing problems in young children. While these variables are concurrently related to behavior problems, we know very little about whether or not they predict change in externalizing behaviors over time. The proposed research examined several parenting and parent predictors of changes in child behavior problems, including lax and overreactive discipline, single parent status, and parental depression. In addition, this study evaluated whether child gender and ethnicity moderated the relationships between these variables and changes in problem behavior. Single parenthood was the only significant predictor for the sample as a whole, while parent depression was a significant predictor for girls. Several significant ethnic differences emerged, highlighting the importance of considering cultural context in studies of parenting and externalizing behavior.

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# CHAPTER 1

# INTRODUCTION

## Overview

Behavior problems, including aggression, acting out, and noncompliance, are relatively common in toddlers and preschoolers. While these behaviors are likely troubling to parents, they are generally thought to be typical of children this age and are often not cause for alarm (Campbell, Shaw, & Gilliom, 2000). However, research has shown that while approximately half of the children exhibiting behavioral problems in preschool will outgrow them, the other half will continue to have substantial difficulties (Campbell et al., 1986).

Unfortunately, we know very little about what predicts these different behavioral trajectories. Being able to distinguish children with transient behavioral issues from those who will continue to have serious problems is important for both theoretical and practical reasons. Cross-sectional data leave causal pathways unclear, and provide insufficient guidance towards targeting intervention programs to those most likely to need them. Longitudinal studies can provide information that will contribute to our understanding of what causes or exacerbates problem behavior, allow us to intervene more effectively, and reduce unnecessary expenditure of time and resources on those who do not need them.

The preschool years represent an important window of opportunity for dealing with negative child behavior. Compared to grade school, preschool offers a flexible, less structured environment where teachers can spend time trying to address children's problematic behaviors. Parents are also typically more involved with school during this time period and there is more potential for them to work together with teachers to address

their children's behavioral difficulties. There is also evidence that nearly all preschoolers, including those from economically disadvantaged backgrounds, enjoy school, are confident in their abilities, and are eager to learn (Stipek & Ryan, 1997). Addressing behavioral problems before formal schooling begins would likely help children maintain and further cultivate these positive feelings. Once children enter elementary school, it becomes increasingly difficult to deal with negative behavior. Expectations and demands on children increase, child/teacher ratios increase, and the focus on academic development leads to less flexibility. In addition, children will remain in the same school with the same peer group for several years, so any negative impressions on teachers and other children may be difficult to change. Children's behavior problems at school entry are associated with increased risk for a host of other difficulties, including poor social skills, peer rejection, and academic problems (Loeber & Farrington, 2000). Additional knowledge about the window of time prior to school entry can help us better understand, predict, and remedy potential problems, guiding efforts to ensure kindergarten readiness for all children.

**Negative Outcomes Associated with Behavioral Problems**

One of the best predictors of future conduct problems and antisocial behavior is high levels of behavior problems in childhood (Campbell, 1995; Miller-Lewis et al., 2006). Behavior problems in early childhood have been associated with a variety of difficulties later in life, including poor academic achievement, inhibition problems, antisocial behavior, substance abuse, crime, and psychopathology (Caspi, Elder, & Bem, 1987; McGee, Partridge, Williams, & Silva, 1991). Many of these problems are not only difficult for the individual to deal with, but also impact society in terms of decreased

productivity, damaged property, and increased costs associated with involvement in the justice system (Shaw, Gilliom, Ingoldsby, & Nagin, 2003). Given these negative outcomes, it is important to intervene as early as possible, and empirical evidence supports the notion that earlier interventions are more likely to succeed (Dishion & Patterson, 1992).

Unfortunately, once children have established a pattern of serious externalizing behavior, it is difficult to change their trajectories. Interventions designed to reduce problem behavior in older children and adolescents have had limited success, especially when children come from socio-economically disadvantaged groups (Kazdin, 1995). This underscores the importance of identifying children with behavioral problems early on and intervening before maladaptive behavior becomes entrenched.

**Child, Parent, and Parenting Variables**

Many researchers have identified child, parent, and parent-child relationship factors that are related to the development of externalizing problems (Campbell et al., 2000). Child characteristics such as difficult temperament and negative emotionality (Owens & Shaw, 2003) and parent characteristics such as maternal depression, decreased social support, and single parent status (Campbell, 1995) have all been implicated. Various aspects of parenting, including harsh and permissive discipline (Arnold, O'Leary, Wolff, & Acker, 1993) have also been found to relate to negative child behavior. While all of these factors have been found to be associated with child behavior problems, few studies have examined whether or not they predict changes in behavior problems.

Numerous studies have shown that boys are at increased risk for behavior problems compared to girls (Spieker, Larson, Lewis, Keller, & Gilchrist, 1999).

Unfortunately, this has led many researchers to focus almost exclusively on boys in their studies of externalizing behavior, making it difficult to determine whether findings regarding risk factors and behavioral trajectories apply equally to girls. While there are more boys than girls with behavior problems in elementary school and beyond, there are still a substantial number of girls who show consistently high levels of externalizing behavior and similar negative outcomes to boys (Schaeffer et al., 2006). Miller, Loeber, and Hipwell (2009) found that risk factors including harsh parenting and low parental warmth predicted behavior problems in girls, mirroring associations that have been found in earlier studies of young boys. The results from these studies underscore the importance of including girls in investigations of child behavior problems. Additional research is needed to replicate these findings and determine whether the relationships between various parenting and parent characteristics and changes in problem behavior differ for boys vs. girls.

**Discipline and its Relationship to Externalizing Behavior**

Many researchers have found a link between particular discipline practices and behavioral problems in young children and adolescents (Del Vecchio & O'Leary, 2006; Dodge, Pettit, & Bates, 1994; Miller-Lewis et al., 2006; Snyder, Cramer, Afrank, & Patterson, 2005). Overreactivity (i.e., harsh, coercive discipline) and laxness (otherwise referred to as permissive or inconsistent parenting) are two specific discipline styles that have frequently been associated with externalizing problems (Arnold et al., 1993).

Social learning theory suggests that children learn to behave aggressively through their interactions with harsh, aggressive caregivers (Deater-Deckard & Dodge, 1997). Patterson (1982) emphasizes the role of "coercive cycles" in the development and

maintenance of problem behavior. He proposes that harsh, inconsistent parenting and noncompliant, aggressive child behavior become mutually reinforcing over time, which serves to solidify a coercive interaction pattern between parent and child. Children caught in these cycles will not only show problem behavior in the home, but will likely exhibit forms of antisocial behavior in other contexts.

While some studies with older children have found that ineffective discipline predicts changes in externalizing behavior over time (Snyder et al., 2005), other studies examining much younger children (such as toddlers) have not (O'Leary, Slep, & Reid, 1999). More research is needed to determine whether ineffective discipline is a predictor of changes in problem behavior, especially in preschool-aged children. In fact, very few empirical studies have specifically examined discipline and its relationship to changes in preschoolers' behavior problems. Many studies have used a more general measure of parenting, rather than a specific, validated measure of overreactive and lax discipline, which this study employed.

There is some evidence to suggest that the effects of discipline on child behavior problems differ depending on ethnicity. Deater-Deckard and Dodge (1997) found that mother's use of harsh discipline in kindergarten was associated with higher teacher-reported externalizing behavior for Caucasian children in every year of the study (from kindergarten through 6$^{th}$ grade). By contrast, there were no significant associations between harsh discipline at age 5 and teacher-reported problem behavior at any grade for African American children. Polaha, Larzelere, Shapiro, and Pettit (2004) found that mother's use of physical discipline was associated with lower levels of teacher-reported problem behavior, but only for African American boys. Other researchers have not found

any differences between these two ethnic groups, with both showing similar positive associations between physical discipline and child behavior problems (e.g. Spieker et al., 1999). Additional research is needed to help clarify past findings, extend findings to other forms of discipline, and evaluate whether differences exist among other ethnic groups, including Hispanic families.

**Single Parent Status**

Single parenthood is frequently associated with increased life stress, more chaotic home environments, fewer financial resources, and lower levels of social support (Weinraub & Wolf, 1983). These factors might directly affect child outcomes or may indirectly affect them through influences on parenting and discipline. Several researchers have found that children in single parent households are more likely to exhibit behavioral problems than those living in two parent families (Dodge et al., 1994; Duncan, Brooks-Gunn, & Klebanov, 1994). Although a number of researchers have included single parents in their studies of child externalizing behavior (Heller, Baker, Henker, & Hinshaw, 1996; Keenan, Shaw, Delliquadri, Giovannelli, & Walsh, 1998; Shaw, Owens, Giovannelli, & Winslow, 2001), none have examined whether single parent status is actually a predictor of changes in preschool behavior problems.

Several researchers have found that the relationship between single parent status and child externalizing problems differs depending on ethnicity. While single parenthood has frequently been associated with child behavior problems in Caucasian families, the findings for African American families have been mixed (Shaw, Winslow, & Flanagan, 1999). The current study included ethnicity as a moderator to see if different results emerged depending on the family's ethnic background.

## Parental Depression and Child Behavior Problems

Several studies have indicated that parental depression places children at risk for a variety of social, emotional, and behavioral difficulties. In particular, parental depression has been found to be associated with insecure attachment, social skills deficits, and externalizing problems in childhood (Miller, Cowan, Cowan, Hetherington, & Clingempeel, 1993). While several researchers have found an association between maternal depression and child behavior problems (Miller et al., 1993; Miner & Clarke-Stewart, 2008; O'Leary et al., 1999; Spieker et al., 1999), it is unclear whether parental depression causes problem behavior to develop or predicts changes in externalizing behavior over time. Depression may cause some parents to be more irritable and rejecting towards their children, or may lead children to act out more frequently in an effort to gain their parents' attention (Shaw et al., 2003). Some researchers have found that the relationship between maternal depression and behavior problems is mediated by harsh, overreactive discipline (O'Leary et al., 1999) or other aspects of parenting (Miller et al., 1993). More research is needed to determine whether parental depression is a specific predictor of continued behavior problems.

## Measuring Behavior Problems

Most studies of childhood behavior problems have relied almost exclusively on one approach, most typically parent report (Dulcan et al., 1997). While there are certainly advantages to parents' reports, given their familiarity with their child's behavior, some data suggest that teachers might have a better sense of whether behavior is normal or age-appropriate given their extensive experience working with many children (Kerr, Lunkenheimer, & Olson, 2007). Observational approaches have not been widely used in

this research area, but provide the advantage of a potentially more objective account of children's behavior. Using multiple assessment strategies is likely to produce the most accurate picture of children's behavioral problems (Doctoroff & Arnold, 2004; Kerr et al., 2007). The current study used all three approaches (parent report, teacher report, and coding of observational data) to measure children's behavior problems. Each type of rating was evaluated independently, as a composite measure may have masked differing perceptions among reporters and/or potential differences in child behavior across contexts.

**The Current Study**

The proposed research examined parenting and parent predictors of changes in behavior problems. More specifically, parenting dysfunction (in the form of lax and overreactive discipline), single parent status, and parental depression near the beginning of children's last year of preschool were examined as predictors of changes in behavior problems across the year. This study also evaluated whether child gender moderated the relationship between these variables and changes in child behavior problems. Finally, exploratory analyses examined whether these relationships differed depending on families' ethnicity.

In regards to discipline, it was hypothesized that parents who showed higher levels of laxness and overreactivity would have children who continued to exhibit behavior problems. Single parents, who are presumably under more stress and may have less time to effectively deal with their children's behavioral issues, were also expected to have children with persisting externalizing problems. It was also hypothesized that parents with depression would be more likely to have children that continued to exhibit behavior problems. Given the lack of research involving young girls and the conflicting

evidence regarding ethnic differences, there were no specific hypotheses relating to gender and ethnicity.

This study will contribute to our understanding of whether discipline practices, single parenthood status, and parental depression predict changes in child externalizing problems over time. We already know that these parenting and parent factors are associated with concurrent child behavior problems. If we are able to determine that these variables predict whether or not child behavior problems get worse, we will be able to use that information to identify those children and families that might benefit the most from intervention efforts.

# CHAPTER 2

# METHOD

## Participants

One hundred and twenty nine preschool children (69 girls and 60 boys), their parents (123 mothers and 6 fathers), and their teachers participated in this study as part of a larger project examining the effects of an early intervention on children's behavioral and academic difficulties (Doctoroff & Arnold, 2004). Families were recruited from seven childcare centers in two urban New England areas. Five of the seven centers served economically disadvantaged families from ethnically diverse backgrounds, and two served predominantly Caucasian families with higher SES. Approximately 27% of the families in this sample were of higher SES. Families from the disadvantaged sample reported a median income of $28,250, while families in the more affluent sample reported a median income of $61,000. The mean age of the children participating in this study was 4.4 years (range 3.2 to 5.4 years) at the initial assessment. Approximately 26% of the children were African American, 32% were Puerto Rican, 34% were Caucasian, and the remaining 8% were of mixed ethnicity. Almost all of the children from the preschools serving economically advantaged families were Caucasian. Thus, in this study, SES and race/ethnicity are unfortunately confounded.

## Procedure

Letters were sent to families from each preschool inviting them to participate in a study of child development. Approximately 2 months into the school year, interested parents attended a 2-hour meeting during which they provided informed consent and completed questionnaires, structured interviews, and other pre-test measures. These

measures were administered by doctoral students in clinical psychology with extensive training. Teachers completed ratings of child behavior for each participating child in their class. In most cases, two teachers worked with each child and the average teacher score was used. After the initial data collection, research assistants videotaped children in their classrooms. Teachers completed the questionnaires again approximately 6 months later, and classrooms were videotaped again. The same percentage of invited families agreed to participate in the study from centers serving low- versus high-SES backgrounds (62%).

## Measures

**Parent discipline.** Parents completed the Parenting Scale (PS; Arnold et al., 1993), a 30-item self-report scale, which measures the effectiveness of parents' discipline strategies. Each item describes an ineffective discipline strategy that is paired with its more effective counterpart (e.g., "I raise my voice or yell" with the counterpart of "I speak to my child calmly"). Scores can range from 1 to 7, with higher scores indicating less effective discipline. The PS was designed to assess parental laxness (i.e., parents' tendency to give in, allow rules to go unenforced, or provide positive consequences for misbehavior) and parental overreactivity (i.e., parents' displays of anger, meanness, or irritability). The PS has been demonstrated to have adequate reliability and validity and has been widely used with both community and clinical samples across a range of SES and ethnic groups (Arnold et al., 1993; Harvey, Danforth, Ulaszek, & Eberhardt, 2001; Irvine, Biglan, Smolkowski, & Ary, 1999).

**Single parent status.** Parents completed a demographic questionnaire at the beginning of the study, which included questions about marital status and current living

arrangements. Parents who were not married or were not living with a significant other who was involved in childrearing were classified as single parents.

**Parent depression.** Parents completed the Brief Symptom Inventory (BSI; Derogatis, 1993), which includes an assessment of depressive symptoms. Parent depression scores were derived from the depression dimension, which includes six items. Scores for each item range from 0 ("not at all") to 4 ("extremely"), and overall raw scores were computed by averaging scores across all depression items. (Raw scores were used in all analyses, but t-scores are presented in Table 1 for descriptive purposes.) The BSI has excellent test-retest reliability, internal consistency estimated at .85, and validity data supporting its use (Boulet & Boss, 1991; Derogatis, 1993; Morlan & Tan, 1998). The BSI has been utilized across a wide variety of ethnic groups, including African-Americans and Latinos in both clinic and community samples (Coelho, Strauss, & Jenkins, 1998; Dilworth-Anderson, Williams, & Cooper, 1999).

**Parent ratings of child behavior problems.** Parents completed the Eyberg Child Behavior Inventory (ECBI), a 36-item self-report inventory of externalizing behaviors (Eyberg & Pincus, 1999). This measure has strong reliability and validity for detecting behavior problems in young children. The Eyberg Intensity factor, a measure of how frequently problem behaviors (such as aggression, defiance, lying, overactivity, and inattention) occur, was used to measure behavior problems. Scores range from 1 (the behavior *never* occurs) to 7 (the behavior *always* occurs). In this study, the overall Intensity score was calculated by averaging the Intensity scores across all 36 items. Psychometric analyses of the ECBI within the sample indicated that the measure has high internal consistency ($\alpha = .93$).

**Teacher ratings of child externalizing behavior.** Teachers completed the Teacher Report Form (TRF) of the Child Behavior Profile, a 113-item scale that measures the frequency of a wide range of children's problem behaviors. Scores for each item range from 0 ("not true") to 2 ("very true"). The attention problems, aggressive behavior, and delinquency subscales of the TRF were used for the purposes of the present study. Raw scores for each subscale were computed by summing scores for each item in the subscale. (Raw scores were used in all analyses, but t-scores are presented in Table 1 for descriptive purposes.) This scale has been standardized for use with children between the ages of 4 and 18, and has been used extensively with preschool children. Adequate reliability and validity data have been established for this measure (Achenbach, 1991).

**Classroom observations of problem behavior.** Videotapes of each participating child were coded by research assistants using a system that had been adapted from existing coding schemes (e.g., Robinson & Eyberg, 1981). Each child was coded individually and was on camera for an average of 41 minutes. Behaviors were rated as present or absent during 15-second intervals. *Misbehavior* was defined as physically aggressive or threatening acts toward people or objects, noncompliance, verbal aggression, disruptive behavior, and any other violation of classroom rules. Scores represent the percentage of intervals in which such behaviors occurred. *Negative affect* was coded if facial expressions, body movements, language, or sounds indicated a negative emotional state. Scores represent the percentage of intervals in which children exhibited negative affect. A measure of total *observed problem behavior* was created by summing scores for misbehavior and negative affect. Thus, a child's score for observed problem behavior represents the percentage of time the child exhibited any kind of

misbehavior (described above) or negative affect. Sixty five percent of the videotapes were independently coded by two coders. Interrater agreement using intraclass correlation coefficients was .50 for problem behavior. This low reliability is primarily because of difficulties in seeing, and particularly hearing, children on the audiotapes; nonetheless, these data have been shown in previous studies to be uniquely predictive of later parent ratings of child behavior problems (Doctoroff & Arnold, 2004).

**Analyses**

Three sets of analyses were carried out to examine the hypotheses presented earlier. In the first set, changes in behavior problems were predicted from laxness, overreactivity, single parenthood, and parent depression. Given the lack of previous research examining the relationships between these variables and changes in behavior, the simple relations were estimated between each predictor and behavior change, to provide a first step in describing their relations. Though exploratory given the sample size, an additional analysis was going to consider these predictors simultaneously, but single parenthood was the only significant predictor (see results below). In the second set of analyses, the relationships were estimated with gender included as a potential moderator. Finally, exploratory analyses examined the moderating effects of ethnicity. All of the analyses were conducted using Hierarchical Linear Modeling (HLM) for two reasons. First, HLM allows us to take into account the nesting of children within classrooms. Second, HLM allows for improved estimates of children's true changes in behavior problems compared to the use of change scores. It should also be noted that approximately half of the children in the present study received an intervention designed

to reduce behavior problems. Although preliminary analyses suggested that this program had minimal effect, we controlled for the effects of this intervention in all analyses.

# CHAPTER 3

# RESULTS

## Descriptive Statistics

Means and standard deviations for all predictor variables and behavior outcomes are presented in Table 1. On average, parents' scores on laxness and overreactivity were similar to those found in previous studies, and generally fell in between clinic and non-clinic groups (Arnold et al., 1993; Freeman & DeCourcey, 2007; Harvey et al., 2001). Thirty seven percent of the children came from single parent households. Parents generally exhibited average levels of depression compared to normative samples. Overall, according to parent and teacher reports, children exhibited average to slightly elevated levels of behavior problems compared to normative groups. On average, children showed similar levels of behavior problems at Time 1 (T1) and Time 2 (T2), though there was a significant decrease in attention problems over the 6-month period [$t(106) = 2.31$, $p = .02$].

Intercorrelations among the predictor variables are presented in Table 2. Laxness and overreactivity were moderately correlated with each other; higher levels of laxness were associated with higher levels of overreactivity. There were no other significant correlations between predictor variables.

Intercorrelations among behavior ratings at Time 1 (T1) and Time 2 (T2) are presented in Table 3. Parent reports of behavior problems at T1 were significantly correlated with parent reports at T2 and teacher reports at T1. Parent ratings were not significantly related to observed behavior problems at any time point. Not surprisingly, all teacher reports of behavior problems were correlated with each other at T1, T2, and

from T1 to T2. All teacher ratings at T1 (and 2 out of 3 teacher ratings at T2) were significantly related to parent ratings at T2. Observed behavior problems at T1 were significantly correlated with observed problems at T2 and all teacher reports of problem behavior at T1 and T2.

Correlations between predictor variables and behavioral ratings at T1 are presented in Table 4. Overreactivity, single parenthood, and parent depression were significantly correlated with parent-reported behavior problems at T1. Higher levels of overreactivity and depression were associated with higher levels of parent-reported behavior problems, while being a single parent was associated with lower levels of parent-reported behavior problems. There were no significant correlations between the predictor variables and teacher-reported or observed behavior problems at T1.

**Predictors of Change in Behavior Problems**

Separate HLM analyses were run to evaluate whether laxness, overreactivity, single parenthood, and/or parent depression predicted changes in behavior problems, controlling for age, gender, and intervention status. A summary of these analyses is presented in Table 5. These analyses were run by estimating 3-level models, in which change scores were estimated for each child, and children were nested within classrooms to account for classroom-level variance in teacher ratings.

**Discipline.** Neither laxness nor overreactivity were significant predictors of the change in parent-reported, teacher-reported, or observed behavior problems.

**Single parenthood.** On average, children of single parents exhibited a smaller decrease in teacher-reported attention problems than children of married parents. (Children of married parents exhibited an 8.53 point decrease in attention problems over

the 6-month period, while children of single parents showed a 7.30 decrease.) This difference between the average rates of change in attention problems for children of single vs. married parents was statistically significant [$t(123) = 1.98$, $p < .05$]. Single parenthood also significantly predicted the change in parent-reported behavior problems. On average, children of single parents showed a smaller decrease in parent-reported behavior problems than children of married parents. (Children of married parents showed a 1.41 decrease in parent-reported behavior problems, while children of single parents showed a 1.04 decrease.) This difference between the average rates of change in parent-reported behavior problems for children of single vs. married parents was also statistically significant [$t(123) = 2.85$, $p < .01$].

**Parent depression.** Parent depression was not a significant predictor of the change in parent-reported, teacher-reported, or observed behavior problems.

**Gender Differences**

To determine whether these relationships differed for boys vs. girls, gender x predictor interaction terms were created for all predictors and were added to the models. Boys were dummy coded as "1" and girls were dummy coded as "0." A summary of these analyses is presented in Table 6. Again, analyses were run controlling for child age and intervention status.

In regards to the relationship between parent-reported behavior problems and parent depression, there was a .40 difference in slope for boys vs. girls [$b = -.40$, SE = .20, $t(103) = -2.04$, $p < .05$]. For every 1-point increase in parent depression (raw score), there was a .35 increase in parent-reported behavior problems for girls and a .05 decrease for boys. There were no significant differences between boys and girls in terms of the

relationships between behavior problems and laxness, overreactivity, and single parenthood.

**Differences Across Ethnic Groups**

In order to examine differences across ethnic groups, two sets of HLM analyses were run. In the first set, ethnicity was dummy coded using Caucasian children as the comparison group. Then, two new interaction terms were created for each predictor (one for African American children and one for Puerto Rican children) and were added to the models. The second set of analyses was carried out in the same way, only Puerto Rican children were used as the comparison group and interaction terms were created for African American and Caucasian children. Due to their small number (N = 10), children of mixed ethnicity were excluded from these analyses. Again, all analyses were run controlling for age, gender, and intervention status.

A number of significant differences between ethnic groups were found, a few of which will be highlighted below. See Table 7 for a complete summary of the interaction results; Table 8 includes the actual coefficients for each ethnic group, so the differing relationships between each predictor and change in behavior can be compared more readily. Overall, results for African American children were mixed; overreactivity and parent depression were significantly associated with decreases in behavior problems, while single parenthood was significantly associated with increases in delinquency. In general, relationships between predictor variables and changes in behavior were in the expected direction for Puerto Rican children; laxness, overreactivity, single parenthood, and parent depression were all associated with increases in problem behavior over the 6-

month period. Results for Caucasian children were mixed, though the only significant predictor for this group, laxness, was associated with a decrease in aggressive behavior.

Several graphs were created to examine the differing relationships between predictors and changes in behavior more closely. Figure 1 illustrates the relationship between laxness and aggression for each ethnic group. It should be noted that teachers tended to rate African American children as much more aggressive than Puerto Rican and Caucasian children. At low levels of laxness, African American children showed a small decrease in aggression over the 6-month period, while at high levels of laxness, aggressive behavior remained consistent at both time points. For Puerto Rican children, low levels of laxness were associated with decreases in aggression, average levels of laxness were associated with no change, and high levels of laxness were associated with increases in aggressive behavior. Surprisingly, Caucasian children tended to show larger decreases in aggression when their parents were more lax.

Figure 2 shows the different relationships between overreactivity and delinquent behavior for each ethnic group. For African American children, low levels of parental overreactivity were associated with increases in delinquency, while higher levels of overreactivity were associated with decreases in delinquency. Puerto Rican children whose parents exhibited low levels of overreactivity showed decreases in delinquency over time. As Puerto Rican parents' scores on overreactivity increased, that decrease in child delinquency got smaller, until ultimately those children whose parents exhibited relatively high levels of overreactivity showed a slight increase in delinquent behavior. Caucasian children generally showed a decrease in delinquency over time, regardless of parent's overreactivity scores.

Finally, Figure 3 shows the relationship between single parenthood and delinquency for each ethnic group. For African American children, having married parents was associated with a decrease in delinquent behavior, while having a single parent was associated with increases in delinquency. Puerto Rican children tended to exhibit a decrease in delinquency if their parents were married, while Puerto Rican children of single parents showed no change in delinquency over the 6-month period. It should be noted that African American and Puerto Rican children of married parents tended to start out with higher delinquency scores than those of single parents. For Caucasian children, those with married parents started out with lower delinquency scores and showed little change in delinquency over time. Caucasian children of single parents started out with much higher delinquency scores than Caucasian children of married parents, Puerto Rican children, and African American children of single parents, but showed a significant decrease in delinquency over the 6-month period.

# CHAPTER 4

## DISCUSSION

Behavior problems are quite common during early childhood, and although many children seem to grow out of them, others do not. Enduring externalizing behavior is associated with a variety of negative outcomes, and interventions should target those who are most at-risk for continuing to exhibit these problematic behaviors. Unfortunately, it is often difficult to tell which children's difficulties will get worse, and few studies have examined specific variables that may predict the change in externalizing behavior that occurs over time. This study examined whether certain parenting and parent factors (namely discipline, single parent status, and parental depression) predicted the change in preschooler's problem behavior over a 6-month period. Analyses initially focused on the sample as a whole, and then examined the moderating effects of gender and ethnicity.

Contrary to expectations, laxness, overreactivity, and parental depression did not significantly predict changes in behavior problems over the 6-month period. This was somewhat surprising considering the cross-sectional literature that has consistently shown associations between these variables and children's behavior problems (and the significant correlations found between these variables and parent-reported behavior problems at T1 in this study). It could be that we needed more power to detect significant effects, or that ethnic differences in these relationships essentially canceled each other out when the sample was evaluated as a whole. It could also be an important indication that cross-sectional predictors are not the same as longitudinal ones. Single parenthood was the only significant predictor of the change in teacher-reported attention problems and parent-reported problem behavior. While both groups of children (those with married

parents and those with single parents), on average, showed decreases in these problem areas, those from single parent households exhibited significantly smaller decreases. One explanation for this finding could be that single parenthood is associated with a variety of difficulties, including increased life stress, fewer financial resources, and lower levels of social support. Indeed, in this sample, the vast majority of single parents (91%) came from lower SES groups. Decreased financial resources and the lack of a parenting partner likely make parenting a child, particularly one with behavior problems, even more difficult. The good news is that despite these challenges, children of single parents still generally showed a reduction in problem behavior over the course of this study.

In terms of gender differences, the relationship between parent depression and the change in parent-reported behavior problems was significantly different for boys vs. girls. Girls tended to exhibit increases in parent-reported problem behavior when their parents were more depressed, while boys showed minimal changes (a slight decrease) in problem behavior when their parents were more depressed. It should be noted that there were no significant differences between boys and girls in terms of the relationships between parent depression and the change in teacher-reported or observed behavior problems. These results are consistent with a few previous studies that have found that maternal depression was more strongly associated with girls' concurrent parent-reported externalizing behavior than boys' (Stacks & Goff, 2006; Briggs-Gowan, Carter, & Schwab-Stone, 1996). There could be several possible explanations for this finding. It could be that girls are more affected by their parent's depression because they are more relationally/emotionally-oriented. Another explanation could be that depressed parent's perceptions of their children differ depending on the child's gender. Most of the parents

in this study were mothers (95%), and there is some evidence to suggest that depressed mothers of girls tend to perceive their children as exhibiting more behavior problems than depressed mothers of boys, and that these perceptions do not line up with teacher or self reports of child behavior (Briggs-Gowan et al., 1996). Future research should attempt to determine whether these differences are due to actual changes in child behavior or reflect distorted parental perceptions of same-gender children. Researchers may wish to collect observational data in the home and/or include fathers when gathering information about child behavior and parent depression.

When the sample was broken down by ethnicity, significant differences began to emerge, particularly in regards to parental discipline. Results for Puerto Rican families tended to be in the expected direction, while results for African American families were mixed. For Caucasian children, results were rarely in the expected direction. Puerto Rican children seemed to be the most affected by parental laxness, with higher levels of laxness predicting increases in teacher-reported aggression and attention problems over the 6-month period and low levels of laxness predicting decreases. Surprisingly, increased parental laxness was associated with decreases in teacher-reported aggression for Caucasian children. African American children showed significant decreases in teacher-reported delinquency and observed behavior problems when their parents were more overreactive. These findings are similar to those found in previous studies, where physical discipline was related to lower levels of teacher-reported behavior problems for African American boys (Polaha et al., 2004). By contrast, and as expected, Puerto Rican children showed decreases in teacher-reported delinquency and aggression when their parents were less overreactive, but increases when their parents were more overreactive.

Caucasian children tended to experience decreases in delinquency no matter how overreactive their parents were.

There were also some significant findings related to single parent status and parent depression. For African American children, having only one parent was associated with a significant increase in teacher-reported delinquency over the 6-month period. Likewise, single parenthood was associated with increases in parent-reported and observed behavior problems for Puerto Rican children. Single parent status was not a significant predictor of change in behavior problems for Caucasian children; however, it should be noted that there were only six single Caucasian parents and half of them were of higher SES. Thus, the significant increases in problem behavior associated with single parent status may have more to do with SES rather than ethnicity. Parent depression was significantly associated with increases in parent-reported and observed behavior problems for Puerto Rican children, but, surprisingly, decreases in teacher-reported attention problems for African American children. Again, no relationships were found for Caucasian children.

Although these ethnicity analyses were exploratory given the small sample size, the number of significant findings is an indication that these ethnic differences should be examined further. Very little research has specifically examined whether these parent and parenting variables predict changes in behavior over time, particularly in ethnically diverse samples.

There are several limitations to this study, including the relatively small sample size, especially once the sample was broken down by gender and ethnicity, and the inclusion of only two time points. Six months is a relatively short period of time, though

we did find some significant changes in behavior problems over this period. Including additional assessments of children's behavior problems over a longer stretch of time would allow a more thorough examination of the change in externalizing behavior.

One of the major limitations of this study is that SES and ethnicity were confounded, with most Puerto Rican and African American families coming from lower SES groups. Thus, any differences between Caucasian families and Puerto Rican or African American families could be attributable to SES rather than ethnicity. Puerto Rican and African American families can be more readily compared in this study, given their similar SES, but additional research is needed to determine whether there are true ethnic differences in the relationships between these parenting and parent predictors and the change in child behavior problems. Future studies should examine differences among low-SES Caucasian, Hispanic, and African American children and among higher-SES Hispanic, African American, and Caucasian children. With a large enough sample, it would also be worthwhile to examine gender differences within each ethnic group. Additional studies might also explore potential teacher biases in the behavioral ratings of ethnic minority children. African American children in this study had substantially higher scores on teacher-reported aggression than children from the other ethnic groups, leading one to wonder whether these reflect true behavioral differences or biased teacher perceptions.

Despite these limitations, this study has a number of strengths and has contributed to our understanding of parent and parenting variables that might predict the trajectory of children's behavior problems during the preschool period. It has also demonstrated the importance of looking at predictors of change, not just cross-sectional associations

between variables. This study included an ethnically diverse group of families, used multiple strategies for assessing child behavior problems, and used HLM to account for nesting within individuals and classrooms. Results indicate that different forms of discipline and single parent status may be differentially predictive of the change in behavior problems depending on the family's ethnicity and/or SES. While laxness and overreactivity both predicted increases in teacher-reported problem behaviors for Puerto Rican children, overreactivity was associated with decreases in delinquency and observed behavior problems for African American children. Likewise, parent depression was differentially associated with problem behavior depending on the child's gender and ethnicity/SES; both girls and low income, Puerto Rican children showed higher levels of problem behavior when their parents were more depressed. Future research should examine these variables more closely and include ethnically diverse participants of both genders from different socioeconomic groups. While additional research is needed to replicate these findings, it is clear that multiple factors likely play a role in trajectory of problem behavior, and they should all be assessed when trying to determine who is likely to need and benefit from intervention efforts.

Table 1

*Means and Standard Deviations for Predictor and Outcome Variables*

| | Time 1 (T1) | | | Time 2 (T2) | | |
|---|---|---|---|---|---|---|
| Measure | N | *M* | *SD* | N | *M* | *SD* |
| Predictor Variables: | | | | | | |
| Laxness | 108 | 2.76 | .95 | | | |
| Overreactivity | 108 | 2.80 | .95 | | | |
| Single Parenthood (% single) | 127 | 37% | | | | |
| Parent Depression (t-score) | 108 | 50.18 | 9.74 | | | |
| Outcome Variables: | | | | | | |
| Eyberg | 115 | 2.95 | .85 | 87 | 2.84 | .77 |
| Attention Problems (t-score) | 124 | 53.10 | 5.08 | 111 | 52.24 | 4.82 |
| Aggressive Behavior (t-score) | 124 | 56.41 | 7.84 | 111 | 56.06 | 8.47 |
| Delinquency (t-score) | 124 | 55.69 | 5.53 | 111 | 55.36 | 5.42 |
| Observed Problem Behavior | 118 | .11 | .10 | 90 | .10 | .09 |

*Note.* Eyberg scores represent the average Intensity score (which can range from 1 to 7) across all 36-items in this measure. The Observed Problem Behavior scores represent the percentage of time children exhibited any misbehavior or negative affect during the observation period. Parent depression scores and child attention, aggressive behavior, and delinquency scores are presented as t-scores for descriptive purposes.

Table 2

*Intercorrelations Among Predictor Variables*

| Variable | 1. | 2. | 3. | 4. |
|---|---|---|---|---|
| 1. Laxness | | .33*** | -.02 | .10 |
| 2. Overreactivity | | | .05 | .15 |
| 3. Single Parenthood | | | | .18 |
| 4. Parent Depression | | | | |

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3

*Intercorrelations Among Behavioral Ratings at Time 1 and Time 2*

| Variable | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Eyberg - T1 | | .73*** | .22* | .11 | .19* | .17 | .24* | .22* | .05 | .01 |
| 2. Eyberg - T2 | | | .26* | .21 | .31** | .33** | .21* | .25* | .07 | .23 |
| 3. Attention - T1 Problems | | | | .82*** | .71*** | .53*** | .62*** | .44*** | .43*** | .02 |
| 4. Attention - T2 Problems | | | | | .64*** | .66*** | .51*** | .55*** | .32*** | .11 |
| 5. Aggressive - T1 | | | | | | .75*** | .75*** | .58*** | .48*** | .10 |
| 6. Aggressive - T2 | | | | | | | .50*** | .67*** | .27** | .22* |
| 7. Delinquent - T1 | | | | | | | | .68*** | .39*** | -.17 |
| 8. Delinquent - T2 | | | | | | | | | .26** | .05 |
| 9. Observed - T1 Problems | | | | | | | | | | .23* |
| 10. Observed - T2 Problems | | | | | | | | | | |

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4

*Correlations Between Predictor Variables and Behavior Ratings at Time 1*

| Outcomes: | Attention Problems | Delinquency | Aggression | Eyberg | Observed Problems |
|---|---|---|---|---|---|
| Predictors: | | | | | |
| Laxness | .01 | .05 | -.06 | .17 | -.01 |
| Overreactivity | .02 | .07 | -.04 | .20* | .06 |
| Single Parent | -.06 | .05 | .01 | -.29** | .07 |
| Parent Depression | .10 | -.02 | .05 | .21* | .04 |

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 5

*Summary of HLM Analyses Predicting Change in Behavior Problems from Laxness, Overreactivity, Single Parenthood, and Parent Depression*

| Outcomes: | Attention Problems | Delinquency | Aggression | Eyberg | Observed Problems |
|---|---|---|---|---|---|
| Predictors: | B (SE) | B (SE) | B (SE) | B (SE) | B (SE) |
| Laxness | .42 (.37) | -.09 (.13) | .80 (.65) | -.05 (.08) | .00 (.01) |
| Overreactivity | .41 (.41) | -.12 (.14) | .59 (.72) | -.10 (.08) | -.00 (.01) |
| Single Parent | 1.23 (.62)* | .31 (.21) | .02 (1.22) | .37 (.13)** | .03 (.02) |
| Parent Depression | -.36 (.50) | .07 (.18) | -.20 (.93) | .14 (.10) | .03 (.03) |

* $p < .05$. ** $p < .01$.

Table 6

*Summary of HLM Analyses Examining Gender Differences*

| Outcomes: | Attention Problems | Delinquency | Aggression | Eyberg | Observed Problems |
|---|---|---|---|---|---|
| Gender Interactions: | B (SE) | B (SE) | B (SE) | B (SE) | B (SE) |
| Boy x Single Parent | .93 (1.20) | .53 (.41) | 2.75 (2.36) | -.01(.27) | -.01 (.05) |
| Boy x Laxness | -.48 (.76) | .09 (.26) | .61 (1.32) | .00 (.15) | -.01 (.03) |
| Boy x Overreactivity | .94 (.80) | -.01 (.27) | .24 (1.40) | .04 (.14) | .01 (.03) |
| Boy x Depression | 1.14 (1.01) | .20 (.37) | .84 (1.90) | -.40 (.20)* | -.02 (.04) |

*Note.* Boys were dummy coded as "1" while girls were dummy coded as "0." Positive coefficients indicate that boys' slopes are more positive than girls' slopes.
* $p < .05$.

Table 7

*Summary of HLM Analyses Examining Differences Between Ethnic Groups*

| Outcomes: | Attention Problems | Delinquency | Aggression | Eyberg | Observed Problems |
|---|---|---|---|---|---|
| Predictors: | B (SE) | B (SE) | B (SE) | B (SE) | B (SE) |
| Laxness | | | | | |
| AA vs. White | .81 (.86) | -.09 (.31) | 3.80 (1.64) * | -.19 (.19) | -.01 (.03) |
| White vs. PR | -3.13 (.86) *** | -.51 (.31) | -5.18 (1.65)** | .14 (.20) | -.03 (.03) |
| AA vs. PR | -2.32 (.81) ** | -.60 (.28) * | -1.38 (1.51) | -.05 (.19) | -.05 (.03) |
| Overreactivity | | | | | |
| AA vs. White | -1.89 (1.03) † | -.48 (.31) | -.40 (1.84) | .24 (.19) | -.06 (.03) † |
| White vs. PR | .44 (1.01) | -.65 (.31) * | -3.33 (1.84) † | -.23 (.17) | -.05 (.03) |
| AA vs. PR | -1.45 (.99) | -1.13 (.30)*** | -3.73 (1.77) * | .01 (.19) | -.11 (.03) ** |
| Single Parent | | | | | |
| AA vs. White | 2.34 (1.93) | 1.55 (.62) * | -2.71 (3.82) | .52 (.40) | -.03 (.07) |
| White vs. PR | -2.30 (1.78) | -.83 (.57) | -1.75 (3.53) | -.57 (.35) | -.07 (.07) |
| AA vs. PR | .04 (1.44) | .72 (.47) | -4.46 (2.90) | -.05 (.36) | -.10 (.05) † |
| Parent Depression | | | | | |
| AA vs. White | -1.67 (1.33) | .32 (.48) | .27 (2.64) | -.03 (.31) | -.02 (.04) |
| White vs. PR | -.77 (1.24) | -.24 (.45) | -1.44 (2.46) | -.47 (.23) * | -.08 (.04) † |
| AA vs. PR | -2.44 (1.22) * | .08 (.44) | -1.17 (2.40) | -.50 (.30) | -.10 (.04)* |

*Note.* AA = African American; PR = Puerto Rican. The coefficients in this table are interaction coefficients. Positive values indicate that the first ethnic group in the comparison has a more positive slope than the second ethnic group. For example, a positive value in the AA vs. White row indicates that the AA slope is more positive than the White slope.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 8

*Relationships Between Predictors and Outcomes By Ethnic Group*

| Outcomes: | Attention Problems | Delinquency | Aggression | Eyberg | Observed Problems |
|---|---|---|---|---|---|
| Predictors: | B (SE) | B (SE) | B (SE) | B (SE) | B (SE) |
| Laxness | | | | | |
| AA | -0.21 (.55) | -0.28 (.19) | 1.2 (1.02) | -0.13 (.13) | -0.02 (.02) |
| PR | 2.11 (.59) *** | 0.32 (.21) | 2.58 (1.0) * | -0.08 (.14) | 0.03 (.02) |
| White | -1.02 (.65) | -0.19 (.24) | -2.60 (1.26) * | 0.06 (.14) | 0.00 (.02) |
| Overreactivity | | | | | |
| AA | -0.98 (.69) | -0.64 (.21) ** | -1.15 (1.23) | 0.03 (.14) | -0.07 (.02) ** |
| PR | 0.47 (.69) | 0.49 (.22) * | 2.58 (1.28) * | 0.02 (.12) | 0.04 (.02) † |
| White | 0.91 (.75) | -0.16 (.23) | -0.75 (1.38) | -0.21 (.12) † | -0.01 (.02) |
| Single Parent | | | | | |
| AA | 1.27 (1.13) | 1.01 (.37) ** | -2.87 (2.27) | 0.47 (.28) † | -0.03 (.04) |
| PR | 1.23 (.90) | 0.29 (.30) | 1.59 (1.83) | 0.52 (.22) * | 0.07 (.03) * |
| White | -1.07 (1.53) | -0.54 (.49) | -0.16 (3.02) | -0.05 (.28) | 0.00 (.06) |
| Parent Depression | | | | | |
| AA | -1.94 (.93) * | 0.33 (.33) | -0.50 (1.84) | -0.02 (.27) | -0.03 (.03) |
| PR | 0.50 (.79) | 0.25 (.28) | 0.67 (1.56) | 0.48 (.16) ** | 0.07 (.03) * |
| White | -0.27 (.93) | 0.01 (.34) | -0.77 (1.85) | 0.01 (.16) | -0.01 (.03) |

*Note*. AA = African American; PR = Puerto Rican. These are the slopes for each separate ethnic group; they were calculated using the interaction coefficients from Table 7.
† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

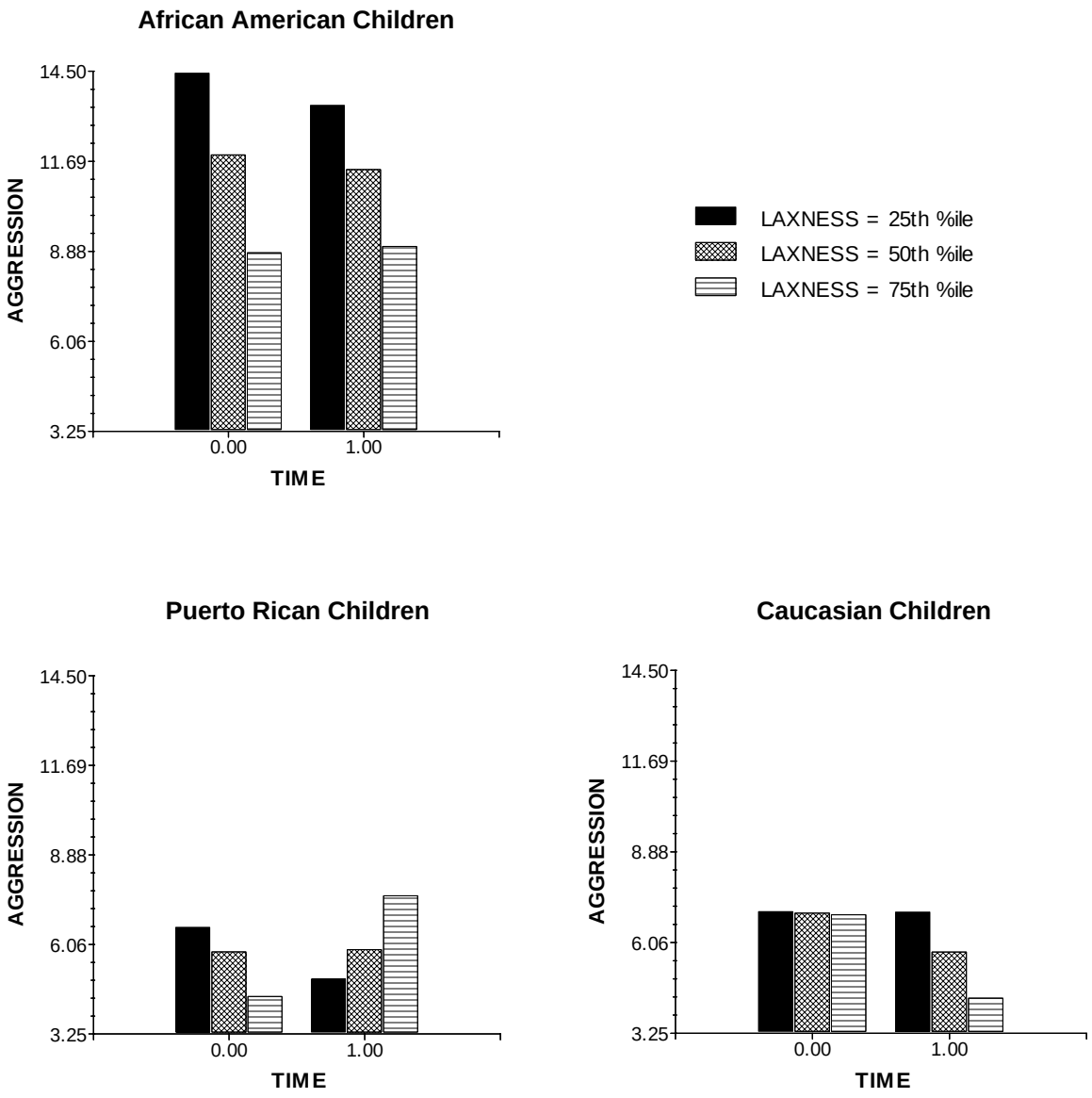


*Figure 1.* Relationship between laxness and aggression at T1 and T2 for African American, Puerto Rican, and Caucasian children.

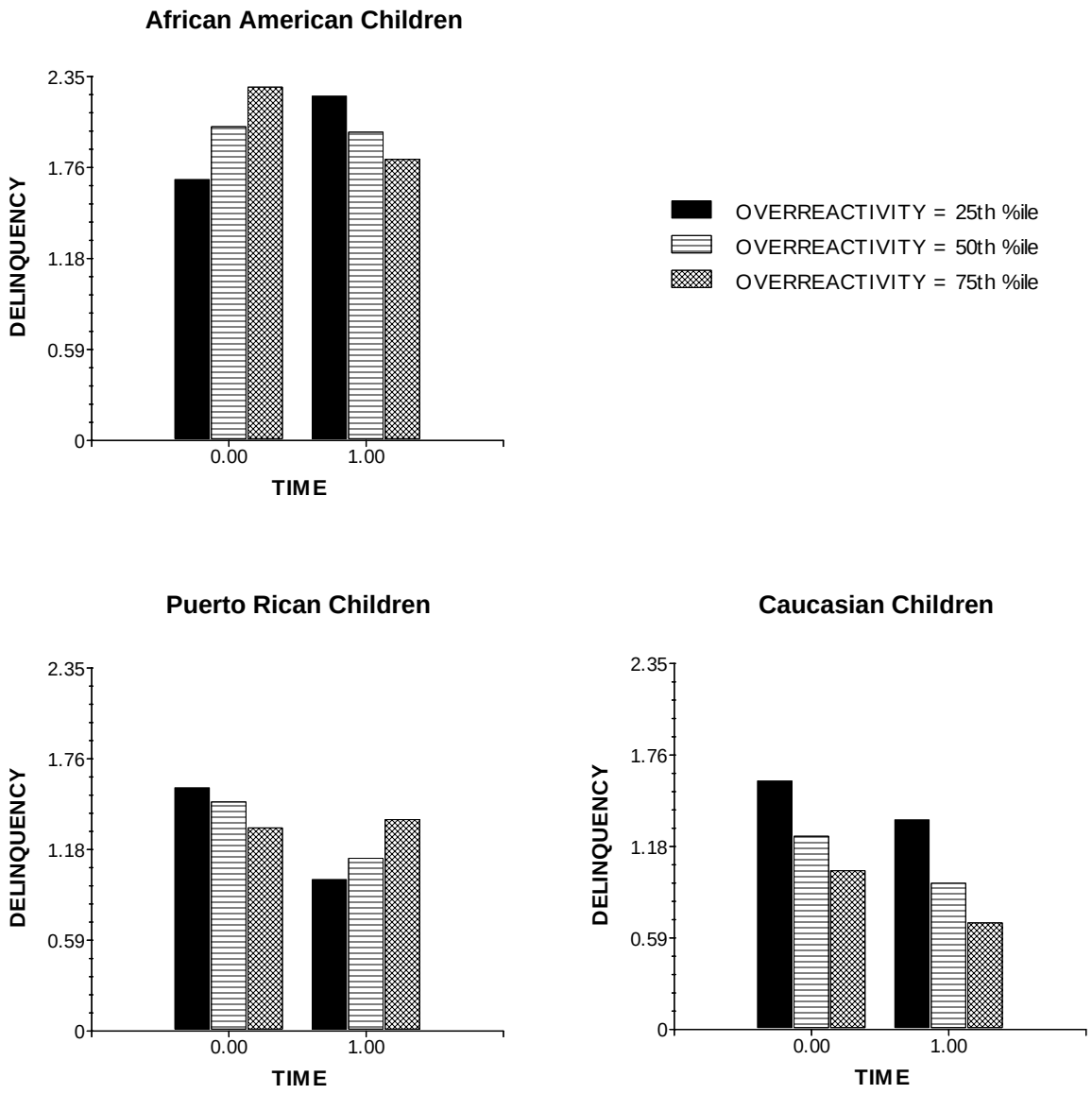


*Figure 2.* Relationship between overreactivity and delinquency at T1 and T2 for African American, Puerto Rican, and Caucasian children.

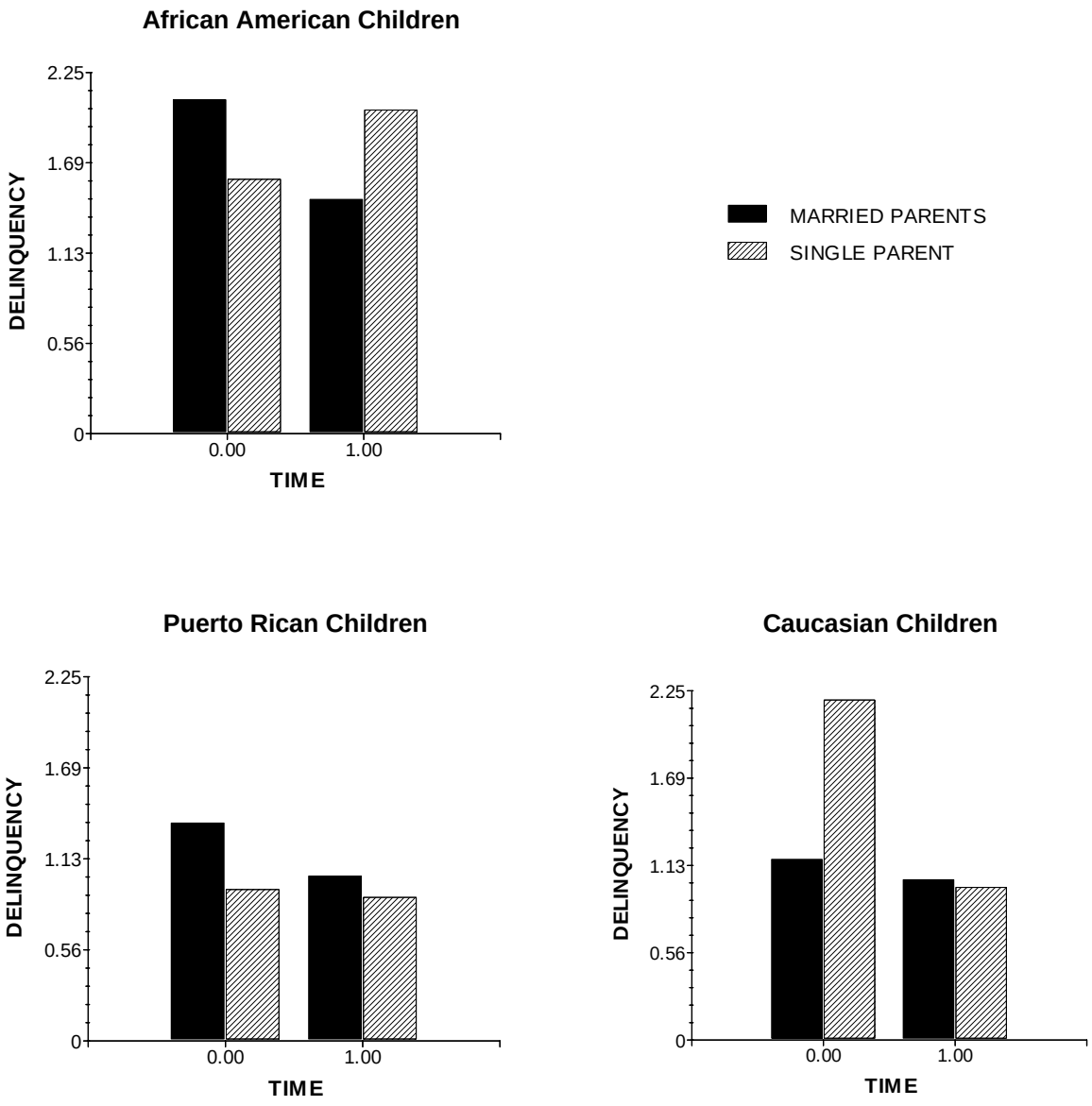


*Figure 3*. Relationship between single parenthood and delinquency at T1 and T2 for African American, Puerto Rican, and Caucasian children.

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