

PARENTAL ATTRIBUTIONS AND DISCIPLINE OF CHILD BEHAVIOR

by

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ABSTRACT

Extant empirical evidence suggests that multiple risk and protective factors implicated in children's development of behavior problems are intertwined. This study, therefore, investigated the relationships among parental depression and anger, attributions of control, discipline, parent-child relationship variables, and children's behavior problems. Results were based on the responses of parents (55 mothers and 13 fathers) with children in Head Start and parents (52 mothers and 4 fathers) with children in Private School settings. All parents had children who ranged in age from 3- to 8-years. Compared to Private School parents, Head Start parents had lower levels of nonviolent discipline, involvement, and autonomy granting and endorsed greater internalizing behavior problems in their children. Significant correlations were found among parent-child relationship characteristics, parental discipline practices, and child behavior problems in both samples. Regression analyses suggested that Private School parents' use of psychological aggression and autonomy granting interact in the prediction of children's internalizing behavior problems. Although Head Start parents' higher attributions of child control for failure predicted lower levels of nonviolent discipline, and Private School parents' use of psychological aggression predicted greater levels of children's externalizing behavior problems, there was no evidence of parental discipline mediating the relationship between parental attributions and children's behavior problems. These findings emphasize the importance of research involving disadvantaged and nondisadvantaged community samples in order to provide a context for understanding how parental discipline and children's behavior problems are related to parent traits and parent-child relationship characteristics.

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CHAPTER ONE: INTRODUCTION

Much research has been devoted to examining the role of parenting behaviors in children's development (Rothbaum & Weisz, 1994; Wamboldt & Wamboldt, 2000). Parental discipline, in particular, has been identified as a predictor for several aspects of children's adjustment, including social competence (Pettit, Dodge, & Brown, 1988; Strassberg, Dodge, Bates, & Pettit, 1992), internalizing behavior problems (Blackson, Tarter, & Mezzich, 1996), and externalizing behavior problems (Deater-Deckard & Dodge, 1997; Patterson, 1982). Further, parents' disciplinary tactics have been found to mediate partially the effect of other risk factors, such as poverty and maternal distress, on children's behavior problems (Dodge, Pettit, & Bates, 1994; Snyder, 1991). Given the interplay of these variables, more research is needed to further the understanding of how parental discipline and children's behavior problems are related to other parent-child relationship characteristics.

One of the challenges to elucidating the influence and interplay of parenting variables on the development of children's behavior problems may involve the diverse definitions and measures used to examine the construct of discipline (DeMulder & Radke-Yarrow, 1991). Many constructs that parallel discipline have been examined, including *guidance* (i.e., supervision and explanations to direct children toward desirable behaviors through fostering of understanding), *motivational strategies* (i.e., using positive incentives to reward positive behavior), *coercive control* (i.e., influencing children through force or harsh or repetitive commands), *noncoercive control* (i.e., influencing children by presenting options and fostering a sense of choice), and, finally, *restrictiveness* (i.e., placing constraints on children's behavior; Rothbaum & Weisz, 1994). Further, measures of discipline in past studies have focused on such behaviors as

punishment enacted by a parent in the event of child misbehavior (Peterson, Ewigman, & Vandiver, 1994) and discussion or aggression used in the course of conflict and disagreement between the parent and child (Strassberg et al., 1992).

Regardless of the terminology used, early family experiences, especially parents' use of aggression and parents' hostile attributions (i.e., interpreting children's behavior as being hostile), have been shown to predict variations in children's social competence, with children's problem solving skill serving as a mediator (Pettit et al., 1988). Further, Strassberg and colleagues (1992) found a relationship between conflict resolution in the family during children's preschool years and children's later social standing among kindergarten peers. In particular, children's lower social preference ratings by kindergarten peers were predicted by mother-to-child and father-to-child aggression, as well as by mother-to-child verbal-aversive behavior and mother-to-child hostile-indirect behavior (Strassberg et al., 1992). Evidently, even more subtle forms of hostility during discipline interactions may lead to children's poorer social competence, even when controlling for children's aggression as rated by peers.

One possible explanation for these findings may involve Bugental's (1993) model of power processes in dysfunctional parent-child interactions. This model suggests that cognitive biases may be transmitted from the parent to the child (Bugental, 1993). These biases may detract from the social abilities of children in the same way that they detract from parents' social ability. For example, children of mothers with low perceptions of power, a risk factor for harsher disciplinary practices (Bugental, 1993; Strassberg, 1995), have a tendency to be more verbally competitive in interactions with peers. These children, who have internalized their parents' pattern of overcompensating for perceived powerlessness, tend to engage in self-praise,

a self-enhancing strategy that is not adaptive socially to the extent that it is accompanied by derogation of others (Bugental & Martorell, 1999).

In addition to these relationships documented for children's social competence, parenting variables related to, but distinct from discipline (e.g., warmth and responsiveness), have been found to play a role in children's development of behavior problems. This affective component of parenting has been described as *approval* (i.e., encouragement and praise rather than ridicule), *synchrony* (i.e., attentive and responsive participation), and *affection or warmth* (Rothbaum & Weisz, 1994). Overall, acceptance and responsiveness in parenting has been associated with children having fewer externalizing behavior problems and being more likely to develop appropriate behavior by gaining experience in sustaining noncoercive joint activity (Rothbaum & Weisz, 1994). Moreover, parents' emotional availability, defined as responsiveness, sensitivity, and emotional involvement with children, has been cited as a potential predictor of children's psychological adjustment (Lum, Phares, & Roberts, 1996). Longitudinal studies have yielded additional evidence that a good relationship with a caregiver, including warmth and a lack of harsh criticism, serves as a protective factor against the development of behavior problems (see Yoshikawa, 1994, for a review).

The relationship variables that have been linked to the development of children's behavior problems are likely to modify the influence of parents' discipline. For instance, Grusec and Goodnow (1994) have proposed that the effectiveness of disciplinary interactions depends on the parents matching their reactions to children's perceptions and emotions in the situation. Similar to the concepts of responsiveness and reciprocity, maternal perceptual accuracy was correlated with frequent use of egalitarian techniques, infrequent use of power assertive techniques, and mothers' satisfaction with conflict resolution. Further, perceptual accuracy in

fathers has been found to be a strong predictor of reduced conflict (Hastings & Grusec, 1997). It may be that mothers use their perceptual accuracy to avoid conflict escalation and fathers use perceptual accuracy to reduce frequency of conflict, reflecting different disciplinary priorities (Hastings & Grusec, 1997).

There are individual characteristics of parents, such as cognitive and emotional differences, that may complicate further the association of parenting behaviors to children's development. For example, parents' negative child relevant trait cognitions (Murray & Sacco, 1998) and their attributions of children's behavior as hostile or intentional (Bugental, Blue, & Lewis, 1990; Bugental, Caporael, & Shennum, 1980) have been related to parents' use of harsher discipline. For example, Pettit and colleagues (1988) examined economically disadvantaged 4- and 5-year olds' social competence in relation to early family experiences (e.g., exposure to family violence, frequency of corporal punishment, and maternal biases regarding child behavior). A strong relationship was found between children's social skill and early family experiences, with children's social problem solving serving as a mediator. The degree to which mothers attributed children's *ambiguous provocation* as hostile rather than benign served as one of the strongest predictors of children's lower social skill. This finding suggested that children's exposure to maternal biases may color children's subsequent interpretation of social information, which then is related to their competence in peer settings (Pettit et al., 1988). As the researchers acknowledged, however, the restricted range of child rearing environments (e.g., most were welfare recipients, 54% of mothers and 30% of the children were suspected to be abuse victims) and child social competence (e.g., almost all of the children were biased toward hostile attributions) might have inflated these findings. Such a conclusion supported a need for research involving both disadvantaged and nondisadvantaged children (Pettit et al., 1988).

There is additional evidence of the interplay among parenting variables, parental attributions, and children's development. Nix and colleagues (1999) found that the relationship between mothers' attributions of hostile intent regarding ambiguous child behaviors and children's externalizing behavior problems may be mediated by mothers' use of harsh discipline practices. This model as a whole accounted for 25 percent of the variance in children's externalizing behavior problems. This finding, as well as research by Strassberg (1995), supported the operation of a self-fulfilling prophecy, or *interpersonal expectancy effect*, in the maintenance of children's externalizing behavior problems. It seems likely that mothers' hostile attribution tendencies predict a harsher disciplinary response that ultimately maintains children's externalizing behavior problems. Consistent with these findings, Bugental (1993) developed a model of dysfunctional interpersonal interactions and power processes, wherein relationship cognitions are critical, especially in families at risk for violence. Adults perceiving themselves to be at a power disadvantage to their children appear to be sensitized to perceive even ambiguous behavior as a challenge to their superficial authority and to mobilize defensive reactions to the perceived threat. The tactics that these adults use to assert power are likely to fail (Bugental & Shennum, 1984). Consequently, the child is viewed in an increasingly negative light (i.e., recalcitrant), the defensive reactions seem more and more justified, and the process is thus perpetuated (Bugental, 1993).

The biases present in parental perceptions and interpretations of children's behavior that have been implicated in increasing harsher discipline practices may in turn be related to parental mood in general (Jouriles & Thompson, 1993; Murray & Sacco, 1998) and anger in particular (Dix, Reinhold, & Zambarano, 1990; Peterson et al., 1994). For instance, parents' predisposition toward anger has been linked to children's externalizing behavior problems, whereas fathers'

outward expression of anger has been connected to children's internalizing behavior problems (Renk, Phares, & Epps, 1999). In addition, on the days that mothers experienced frequent hassles and negative mood, they were more likely to respond to their children's misconduct coercively and to reinforce their children's coercive tactics during noncompliance (Snyder, 1991). The link between mothers' mood and ratings of children's behavior problems has been corroborated using naturalistic as well as experimental methods. For instance, mothers who experienced a positive mood induction were more likely to rate children's behavior favorably relative to those who experienced negative or neutral mood induction conditions (Jouriles & Thompson, 1993). Further, parental anger have been found to contribute to a negative bias in parents' perception of children's behavior (Dix et al., 1990) and to intensify discipline practices (Peterson et al., 1994). In fact, disciplinary tactics have been found to mediate partially the impact of maternal distress on children's conduct problems, suggesting that maternal discipline is not the sole mediating variable in the relationship of maternal distress and children's conduct problems (Snyder, 1991).

The Current Study

Previous research has suggested that several interconnected parenting variables are important in predicting the occurrence of children's emotional and behavioral problems. Further, evidence has suggested that the relationship between parental attributions and children's behavior problems may be mediated by parental discipline (Nix et al., 1999). The role played by parental anger, warmth, autonomy granting, and parent-child communication has yet to be examined within this framework. Consequently, research in this area needs to incorporate these

various constructs and shed light on the relationships among parental psychological symptoms, parental attributions, discipline, and children's behavior problems.

Given these needs in the research literature, the first purpose of the present study was to investigate the relationships among parental depression and anger, parental attributions of control, discipline, characteristics of the parent-child relationship, and ratings of children's behavior problems. Thus far, the interrelationships among this constellation of variables have not been examined altogether. A second purpose of this study was to examine whether a mediational model explains the relationship between parental attributions, discipline, and ratings of children's behavior problems. In other words, the study investigated whether the relationship between parental attributions of children's behavior and parental ratings of children's behavior problems is mediated by parental discipline. Finally, this study sought to address the need for research involving disadvantaged and nondisadvantaged children (Pettit et al., 1988) within a community sample to provide information representative of the general population. Thus, this study examined whether a mediational model was applicable for two groups of parents, one coming from a disadvantaged background (parents with a child in Head Start) and one from a more advantaged background (parents with a child in a Private School setting).

Based on findings discussed previously, the frequency of different types of discipline was hypothesized to be associated with ratings of children's behavior problems (Deater-Deckard & Dodge, 1997; Lequerica & Hermosa, 1995). Second, the inclusion of measures of parent-child relationship characteristics, such as involvement, communication, and autonomy granting, made it possible to examine the hypothesis that these variables moderate the relationship between discipline and ratings of children's behavior problems (Dix et al., 1990; Peterson et al., 1994; Rothbaum & Weisz, 1994). Third, a positive relationship was predicted between parental

attributions of control and the frequency of discipline practices, particularly psychologically and physically aggressive practices (Bugental, Blue, & Cruzcosa, 1989; Strassberg, 1995). A fourth hypothesis predicted that there would be a positive correlation between the relative amount of control parents attributed to children and ratings of children's behavior problems (Miller, 1995). A final hypothesis proposed the existence of a mediational model (see *Figure 1*) in which the relationship between parental attributions and children's behavior problems would be mediated potentially by parents' discipline practices (Nix et al., 1999). Given prior research suggesting stronger findings with regard to externalizing behavior problems (Rothbaum & Weisz, 1994), these relationships were expected to be stronger for children's externalizing behavior problems than for their internalizing behavior problems.

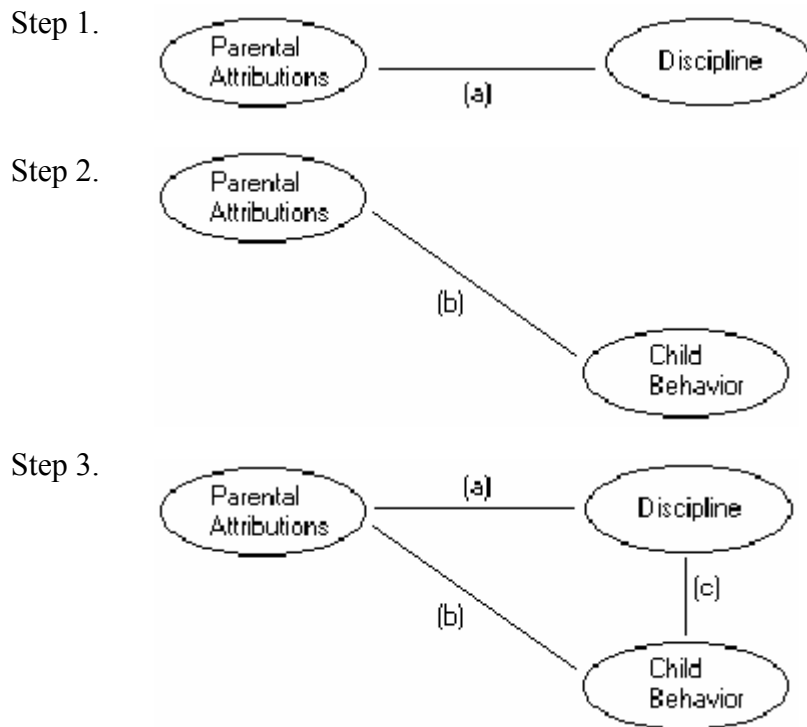


Figure 1. Mediation model.

For a mediational model to be valid, the following criteria need to be met: In Step 1, the relationship between parental attributions and discipline would have to be significant. In Step 2, the relationship between parental attributions and children’s behavior problems would have to be significant. In Step 3, the relationship between parental attributions and discipline and between parental attributions and children’s behavior problems would no longer be significant, but the relationship between discipline and children’s behavior problems would need to be significant.

CHAPTER TWO: METHODS

Participants

The present study examined information that was provided by parents of children who ranged in age from 3- to 8-years old ($M = 4.60$, $SD = .90$). For participants with multiple children in this age group, parents were asked to complete the questionnaires referring to their child who was closest to 6-years of age. Parents were recruited if they had at least one child in a Head Start program in a southeastern suburban area (composing the sample categorized as low socioeconomic status) and from Private Schools in the same region (composing the sample categorized as high socioeconomic status). Based on power analyses, the suggested sample size for a multiple regression analysis ($\alpha < .05$) with two independent variables and statistical power of .80 was 67 participants in order to detect a medium effect size (Cohen, 1992). In an effort to reach this sample size for each group, information from mothers and fathers was considered collectively rather than separately.

The sample of parents with children in a Head Start program consisted of 55 mothers and 13 fathers. Parents were between the ages of 19- and 64-years ($M = 32.60$, $SD = 11.00$). Most of the parents were from diverse ethnic backgrounds, with 16.1% indicating that they were Caucasian, 50.0% Hispanic, 25.8% African American, 1.6% Asian American, 3.2% Native American, and 3.2% from some other ethnicity. Most of the parents (56.3%) were married; however, 18.8% were single, 9.4% were divorced, 9.4% were separated, 4.7% were widowed, and 1.3% were remarried. Most of the parents (55.8%) reported some education beyond high school (3.3% had vocational training, 32.8% had completed some college, 14.8% had completed

their Bachelor's degree, and 4.9% had some graduate training). Most of the parents (73.7%) reported an income below \$30,000, whereas 14% had an income that fell within the \$30-40,000 range, 10.5% fell within the \$40-50,000 range, and 1.8% fell within the \$50-60,000 range. Sixty-one percent of the parents endorsed menial (20.4%), unskilled (20.4%), semiskilled (9.3%), and manual (11.1%) occupations. The remainder endorsed clerical (11.1%), technical (11.1%), small business ownership (3.7%), administration (11.1%), and executive positions (1.9%) as their occupation description.

The sample of parents (45 mothers and 3 fathers) of children in private schools ranged in age from 22- to 50-years ($M = 36.0$, $SD = 5.6$). Most of the parents (91.7%) indicated that they were Caucasian, 6.3% were Hispanic, and 2.1% were Asian American. Most of the parents (87.5%) were married; however, 2.1% were divorced, and 10.4% were remarried. Although some parents reported vocational training (6.3%) or some college (25.0%) as their level of education, most of the parents endorsed a Bachelor's level of education or higher (50.0% had a Bachelor's degree, 14.6% had graduate training, and 4.2% had post-doctorate training). Most of the parents (73.8%) reported a yearly income of \$60,000 or higher (14.3% fell within the \$60-70,000 range, and 59.5% fell within the range of \$70,000 or more), with 9.5% reporting an income that fell within the \$40-50,000 range, and 9.5% reporting an income that fell within the \$50-60,000 range. Fewer (7.1%) reported a yearly income of less than \$40,000. About half of the parents (52.2%) endorsed menial (26.1%), unskilled (19.6%), and skilled (6.5%) occupations. The remainder endorsed clerical (4.3%), technical (6.5%), small business ownership (10.9%), administrative (15.2%), and executive positions (10.9%) as their occupation description.

Additional data was obtained from a sample of university students that included parents (7 mothers and 1 father) who ranged in age from 22- to 40-years ($M = 28.6$, $SD = 5.9$). Most of

the parents (87.5%) indicated that they were Caucasian, and the rest (12.5%) endorsed they were African American. Fifty percent of parents were single, 37.5% were married, and 12.5% were divorced. Half of the parents were working toward a Bachelor's degree, and the remaining fifty percent had already earned their Bachelor's degree. Parents reported a yearly income of \$40,000 or less (14.3% reported an income less than \$10,000; 28.6% fell within the \$10-20,000 range; 28.6% fell within the \$20-30,000 range; 28.6% fell within the \$30-40,000 range). Parents endorsed semiskilled (12.5%), skilled (12.5%), clerical (37.5%), technical (25%), or administrative positions (12.5%) as their occupation description. Conceptualizing socioeconomic status as a composite of economic and educational variables, university students were categorized within the high SES sample due to their higher educational standing relative to the low SES sample ($t_{(67)} = -4.88, p < .001$), due to their earning potential following the completion of their college degree, and due to the fact that their children were attending a Private School setting.

Measures

The *Beck Depression Inventory-II* (BDI-II; Beck, Steer, & Brown, 1996) was used to obtain a measure of parents' depressive symptoms. The BDI questionnaire was developed for the assessment of symptoms meeting criteria of a clinical depression diagnosis. It contains 21 items, each rated on a 4-point scale from 0 to 3, with scores ranging from 0 (minimal) to 63 (severe). Previous studies have reported internal consistency coefficients ranging from .92 to .93 and a test-retest reliability of .93. The BDI-II has been documented to correlate positively with other measures that are used widely to assess depression, hopelessness, suicidal ideation, and

anxiety. In the present study, the internal consistency reliability coefficients were .91 in the Head Start sample and .90 in the Private School sample.

Parents' disposition toward anger and anger expression was assessed via the *State-Trait Anger Expression Inventory-2* (STAXI-2; Spielberger, 1999). This measure consists of 44 items that compose three primary subscales: state anger, trait anger, and anger expression. For the purposes of this study, the trait anger and anger expression subscales were utilized. The trait anger subscale contains items that tap into an individual's disposition to experience anger. The anger expression subscale consists of items that measure the frequency of an individual's inward (suppressed) and outward (toward others) anger expression. Higher scores on the trait anger subscale indicated greater parental disposition toward anger, and higher scores on the anger expression subscale indicated greater parental expression of anger. Spielberger (1991) has reported strong psychometric properties for this measure in previous studies, with previous internal consistency reliability coefficients of .61 and .74 for the trait and expression subscales, respectively. In the current study, the trait and expression subscales had internal consistency reliability coefficients of .84 and .86, respectively, for the Head Start sample. In the Private School sample, the trait and expression subscales had internal consistency reliability coefficients of .78 and .67, respectively.

The degree to which parents attribute unsuccessful parent-child interactions to factors controllable by children or adults was assessed using the *Parent Attribution Test* (PAT; Bugental, 1998). A reliability coefficient of .63 has been obtained for the PAT in a previous study, and scores on the PAT have shown valid predictive ability regarding mothers' reactivity to children's unresponsive behavior. Further, abusive mothers have been found to show a pattern on the PAT of low perceived control over negative caregiving outcomes (Bugental, 1998). The PAT

provides a score for Child Control for Failure (CCF) and for Adult Control for Failure (ACF) based on how important they believe different factors are in causing a negative parent-child interaction using a 1 (*not at all important*) to 7 (*very important*) Likert-type rating scale. These scales yielded internal consistency reliability coefficients of .83 and .90, respectively, in the Head Start sample and .75 and .85, respectively, in the Private School sample of the current study.

Parental discipline practices were assessed using the *Parent-Child Conflict Tactics Scales* (CTSPC; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998). This measure is a revision of the Conflict Tactics Scale (CTS1; Straus, 1979), which was designed originally for use with married, cohabitating, or dating partners. The CTSPC was revised to be more appropriate for the parent-child relationship and to include behaviors that parents use when dealing with parent-child conflict. The CTSPC consists of 22 items that compose three main scales: Nonviolent Discipline, including explanation and time out; Psychological Aggression, such as making statements intended to cause psychological pain or fear; and Physical Assault, including a continuum of behaviors ranging from spanking to threatening with a knife or gun. Specifically, the scales were used to provide a measure of the frequency of nonviolent discipline, psychological aggression, and child-directed physical assault. Previously cited reliability coefficients for these scales were .70, .60, and .55, respectively. In the sample for the present study, the internal consistency reliability coefficients for these specific scales were .82, .72, and .69, respectively, for the Head Start sample, and .61, .60, and .61, respectively, for the Private School sample. Evidence of construct validity has been provided by Straus and colleagues (1998).

The *Lum Emotional Availability of Parenting Scale* (LEAP; Lum et al., 1996) was used to obtain a measure of participants' emotional availability in parenting. The scale was intended originally for the purpose of obtaining individuals' reports of their parents' emotional availability toward them in the past. The 15 items of the LEAP scale were reworded to obtain parents' ratings of their emotional availability toward their children. The LEAP scale has been found to be temporally reliable in a previous study, with a test-retest correlation coefficient of .92 for ratings of mothers' behavior and .85 for ratings of fathers' behavior. The LEAP scale has demonstrated convergent validity in a previous study, correlating highly with other measures of emotional warmth and care. In addition, the lack of correlation with ratings of social desirability in a previous study provided evidence of discriminant validity. In the current study, this scale achieved an internal consistency reliability coefficients of .95 for the Head Start sample and .88 for the Private School sample.

The *Parent-Child Relationship Inventory* (PCRI; Gerard, 1994) was used to assess the overall quality of the parent-child relationship. The PCRI is a 78-item questionnaire rated by parents on a 1 (*strongly agree*) to 4 (*strongly disagree*) Likert-type rating scale. Each of the seven subscales of the PCRI taps into a specific aspect of the parent-child relationship. For the current study, the Involvement, Autonomy Granting, and Communication subscales were utilized. The Involvement scale (INV) focuses on the level of parents' interaction with and knowledge about their children, the Autonomy scale (AUT) examines parents' ability to promote children's independence, and the Communication scale (COM) examines the degree to which parents perceive that they communicate effectively with their children. In previous studies, the PCRI has shown good internal consistency (median $\alpha = .82$), test-retest reliability ($r = .81$), as well as content, construct, and predictive validity (Gerard, 1994). In the present study, the INV,

COM, and AUT subscales yielded internal consistency reliability coefficients of .83, .76, and .41, respectively, in the Head Start group. Internal consistency reliability coefficients in the Private School sample were .71, .72, and .58, respectively.

Participants completed the *Child Behavior Checklist* (CBCL; Achenbach & Rescorla, 2000, 2001) to provide a rating of children's behavior problems. Parents completed either the 1.5- to 5-year old version or the 6- to 18-year old version, depending on the age of their child. The CBCL for 1.5- to 5-year olds consists of 100 behavior problem items rated by parents on a 0 (*not true*) to 2 (*very or often true*) rating scale. The CBCL for 6- to 18-year olds consists of 113 behavior problem items that are rated using the same rating scale as the 1.5- to 5-year old version. Both measures provide T scores for children's Internalizing, Externalizing, and Total Behavior Problems. Both versions of the CBCL have strong psychometric properties. This measure is the most widely used instrument for the assessment of childhood behavior problems and has been validated empirically (Achenbach & Rescorla, 2001). The Internalizing and Externalizing Behavior Problem T scores were utilized for the current study.

The *Harter Teacher's Rating Scale* (HTRS; Harter & Pike, 1984) was used to obtain parental ratings of children's competence. Although this measure was devised originally for use with teachers, Harter and Pike (1984) suggested that it may be used effectively with parents as well. Participants filled out one of two versions of the HTRS, the Preschool-Kindergarten form or the first and second grade form, depending on the academic standing of the child that they were rating. The three subscales of the HTRS include cognitive competence, peer acceptance, and physical competence. Each of the subscales contains six items rated on a 1 (*not very true*) to 4 (*really true*) rating scale. For the Head Start sample, these subscales obtained internal consistency reliability coefficients of .86, .77, and .82, respectively. Internal consistency

reliability coefficients pertaining to the Private School sample were .77, .83, and .69, respectively.

Given that the content of questionnaire items relate to socially-valued themes and that self-presentation concerns may influence participants' responses, the *Marlowe-Crowne Social Desirability Scale* (M-C SDS; Crowne & Marlowe, 1960) was utilized to obtain a measure of participants' tendency to answer questions in a socially desirable, rather than truthful, manner. The measure contains 33 true-or-false questions, with the socially desirable answer corresponding to a *true* answer on some items and to a *false* answer on other items (so as to avoid response set effects). In previous studies, this measure has had a reported internal consistency of .88 and has shown positive correlations with the Lie scale of a widely used personality measure (Crowne & Marlowe, 1960). In the present study, it obtained an internal consistency reliability coefficient of .70 for the Head Start sample and .64 for the Private School sample.

Finally, participants completed a brief questionnaire regarding *demographics information*. The demographics questionnaire asked participants to provide information about themselves and their children's other parent regarding such things as age, occupation, and ethnicity.

Procedure

Parents were recruited from two school settings, Head Start and Private School programs, in a southeastern suburban area. Data collection involved administering questionnaires to parents at their respective school setting during an open-house event or parent-teacher meeting. Most of the Head Start parents completed the questionnaires in the presence of the investigator,

on occasion needing assistance due to difficulties reading in English (when this language was the parents' second language). Others opted to complete the questionnaires at home and return them to the school upon completion for the investigator to collect at a later date. Some of the Private Schools preferred to have the teachers provide parents with the questionnaires, which the parents could return to the investigators via postal mail using enclosed self-addressed stamped envelopes. For these schools, a detailed sheet was included in the packet to explain how to complete each questionnaire and how to contact the investigator so that parents could call with any questions.

A consent form was included as the first page in the questionnaire packet to ensure that parents understood that their participation was voluntary and that their answers would remain confidential. In addition, participants were given a debriefing form upon completion of their questionnaires to explain the purpose of the study and provide references to relevant research literature. There were no foreseeable costs or risks for participation in this study. Contact information for the investigators as well as for a community mental health clinic was provided for participants to use in the event that they had questions or the need for mental health services.

CHAPTER THREE: RESULTS

Descriptive Statistics

Head Start

To provide a context for the results of this study, descriptive statistics were examined for both the Head Start and Private School samples. Although BDI scores ranged from minimum to severe, parents in the Head Start sample tended to endorse minimal depression symptoms ($M = 9.40$, $SD = 8.83$). On average, parents endorsed relatively low trait anger ($M = 13.82$, $SD = 4.10$) and moderate anger expression ($M = 30.68$, $SD = 12.80$). Parents also endorsed moderate to high adult control for failure ($M = 4.12$, $SD = .80$) and moderate child control for failure in parent-child interactions ($M = 3.76$, $SD = .79$). Regarding discipline variables, parents reported greater levels of nonviolent discipline ($M = 45.59$, $SD = 30.79$) and progressively lower levels of psychological aggression ($M = 19.89$, $SD = 22.84$), corporal punishment ($M = 13.52$, $SD = 20.51$), and very low levels of physical maltreatment ($M = .64$, $SD = 2.23$). In terms of parent-child relationship variables, parents endorsed relatively high emotional availability ($M = 70.45$, $SD = 7.40$), involvement ($M = 47.42$, $SD = 5.82$), autonomy granting ($M = 23.72$, $SD = 3.36$), and communication ($M = 29.78$, $SD = 3.69$). Parents endorsed nonclinical ratings of their children's internalizing ($M = 49.85$, $SD = 12.69$) and externalizing behavior problems ($M = 46.34$, $SD = 12.58$) on average. Parents reported that their children had relatively high cognitive competence ($M = 20.09$, $SD = 4.15$), peer acceptance ($M = 17.44$, $SD = 4.31$), and physical competence ($M = 19.29$, $SD = 4.19$). Parents' responses on the social desirability scale reflected slightly elevated self-presentation concerns ($M = 22.25$, $SD = 5.07$).

Private School

BDI scores of parents in the Private School sample ranged from minimum to moderate, with parents endorsing minimal depression symptoms on average ($M = 5.32, SD = 6.60$). On average, parents endorsed relatively low trait anger ($M = 15.04, SD = 3.50$) and moderate anger expression ($M = 27.10, SD = 10.70$). Parents also endorsed moderate to high adult control for failure ($M = 4.10, SD = .59$) and moderate child control for failure in parent-child interactions ($M = 3.66, SD = .44$). Regarding discipline variables, parents reported greater levels of nonviolent discipline ($M = 59.04, SD = 22.61$) and progressively lower levels of psychological aggression ($M = 15.43, SD = 13.48$), corporal punishment ($M = 8.82, SD = 12.55$), and very low levels of physical maltreatment ($M = .25, SD = .76$). In terms of parent-child relationship variables, parents endorsed relatively high emotional availability ($M = 69.18, SD = 5.11$), involvement ($M = 50.55, SD = 3.57$), communication ($M = 30.08, SD = 3.02$), and autonomy granting ($M = 27.60, SD = 3.29$). On average, parents endorsed nonclinical ratings of internalizing ($M = 45.12, SD = 8.66$) and externalizing behavior problems ($M = 42.84, SD = 11.02$) in their children. Parents reported that their children had relatively high cognitive competence ($M = 22.00, SD = 2.47$), peer acceptance ($M = 18.76, SD = 3.81$), and physical competence ($M = 19.10, SD = 3.13$). Parents' responses on the social desirability scale reflected about average self-presentation concerns ($M = 18.81, SD = 5.04$).

Differences Between the Groups

Analyses using *t*-tests revealed significant differences between the Head Start and Private School groups with regard to several variables (see *Table 1*). Head Start parents endorsed significantly lower levels of education ($t_{(115)} = -7.14, p < .001$) and income ($t_{(104)} = -10.88, p <$

.001). Head Start parents also reported less frequent use of nonviolent discipline ($t_{(123)} = -2.81, p < .006$). In terms of parent-child characteristics, Head Start parents reported lower levels of involvement ($t_{(95)} = -3.19, p < .002$) and autonomy granting ($t_{(96)} = -5.78, p < .001$). Lastly, Head Start parents endorsed significantly higher levels of internalizing behavior problems in their children ($t_{(111)} = 2.35, p < .02$).

Relationships Among Variables

The relationships among parental depression and anger, attributions of control, discipline, characteristics of the parent-child relationship, and ratings of children's behavior problems were examined using correlational analyses for each of the two groups. Only significant correlations are discussed here. See *Table 2* for a graphic presentation of all the correlations.

Head Start Sample

Parental depression was correlated significantly and negatively to parents' involvement with their children ($r = -.40, p < .007$). In contrast, parental depression was correlated significantly and positively with the frequency of parents' maltreatment of their children ($r = .54, p < .001$), as well as children's internalizing ($r = .58, p < .001$) and externalizing behavior problems ($r = .59, p < .001$). In addition, parents' depression was correlated significantly with children's lower cognitive competence ($r = -.38, p < .005$).

With regard to parental anger, trait anger was correlated significantly and negatively with parents' emotional availability ($r = -.44, p < .001$) and involvement ($r = -.56, p < .001$). Parental trait anger was correlated significantly and positively with parents' frequent use of psychological aggression ($r = .29, p < .02$) and maltreatment ($r = .36, p < .003$). Higher trait anger in parents

was associated significantly with higher levels of children's internalizing ($r = .31, p < .02$) and externalizing behavior problems ($r = .29, p < .03$). Furthermore, parents' expression of anger was correlated significantly with lower emotional availability ($r = -.29, p < .03$), involvement ($r = -.50, p < .001$), and communication ($r = -.46, p < .003$). Parental anger expression was correlated significantly with psychological aggression ($r = .32, p < .02$) and corporal punishment ($r = .28, p < .04$). Higher levels of parental anger expression also were related to higher rates of children's internalizing ($r = .35, p < .01$) and externalizing behavior problems ($r = .30, p < .03$).

Parents' attribution of adult control for failure (ACF) was correlated negatively with child maltreatment ($r = -.29, p < .03$). Parental ACF was correlated positively, however, with children's cognitive competence ($r = .33, p < .02$) and physical competence ($r = .32, p < .02$). Parents' attribution of child control for failure (CCF) was correlated significantly with lower frequency of nonviolent discipline ($r = -.27, p < .04$).

Regarding parent-child relationship characteristics, parents' emotional availability was correlated significantly and negatively with severe maltreatment of children ($r = -.29, p < .01$). Parents' emotional availability also was correlated significantly with children's higher peer acceptance ($r = .43, p < .001$) and physical competence ($r = .50, p < .001$). In addition, parental involvement in the parent-child relationship was correlated significantly with lower levels of maltreatment ($r = -.44, p < .002$), lower levels of children's internalizing behavior problems ($r = -.46, p < .001$), and lower levels of children's externalizing behavior problems ($r = -.45, p < .002$). Parental involvement was correlated significantly with greater cognitive competence ($r = .52, p < .001$) and physical competence ($r = .40, p < .009$). Another facet of the parent-child relationship, parents' level of autonomy granting, was correlated significantly with children's internalizing behavior problems ($r = -.32, p < .03$).

With regard to discipline, parents' use of corporal punishment was correlated significantly with higher levels of children's internalizing ($r = .28, p < .03$) and externalizing behavior problems ($r = .31, p < .02$). Frequency of corporal punishment also was correlated significantly to children's lower cognitive competence ($r = -.27, p < .05$). Similarly, physical maltreatment was correlated significantly with higher levels of children's internalizing ($r = .35, p < .007$) and externalizing behavior problems ($r = .28, p < .03$), as well as with lower levels of cognitive competence ($r = -.43, p < .001$) in children. Severe maltreatment was correlated significantly to children's lower levels of cognitive competence ($r = -.38, p < .004$), peer acceptance ($r = -.36, p < .005$), and physical competence ($r = -.44, p < .001$).

Lastly, parents' level of social desirability concerns was related significantly to lower self-ratings of depression ($r = -.31, p < .03$), trait anger ($r = -.30, p < .03$), and anger expression ($r = -.37, p < .01$). Social desirability was also correlated with higher ratings of parental involvement ($r = -.35, p < .03$), though not with any other parenting or relationship variable.

Private School Sample

Parental depression was correlated significantly and negatively to parents' autonomy granting in the parent-child relationship ($r = -.47, p < .001$). Depression also was correlated significantly and positively with children's internalizing ($r = .63, p < .001$) and externalizing behavior problems ($r = .32, p < .03$).

Parental trait anger was correlated significantly and positively with parents' use of psychological aggression ($r = .53, p < .001$). Parents' anger expression, in particular, was correlated significantly with lower parent-child communication ($r = -.37, p < .01$) and higher psychological aggression ($r = .31, p < .03$). Parents' anger expression also was correlated

significantly with higher rates of children's internalizing ($r = .34, p < .02$) and externalizing behavior problems ($r = .41, p < .004$).

Parents' attribution of control to the child for a failed interaction (CCF) was correlated significantly with higher levels of corporal punishment ($r = .29, p < .03$). Parental attribution of CCF was correlated also with parents' higher level of corporal punishment.

With regard to parent-child characteristics, parents' emotional availability was correlated significantly and negatively with the frequency of nonviolent discipline ($r = -.40, p < .002$). Parental involvement in the parent-child relationship was correlated significantly with lower levels of corporal punishment ($r = -.38, p < .008$) and lower levels of children's internalizing ($r = -.40, p < .006$) and externalizing behavior problems ($r = -.32, p < .03$). Parent-child communication was correlated significantly with lower levels of psychological aggression ($r = -.35, p < .02$) and corporal punishment ($r = -.32, p < .02$). Parent-child communication was correlated significantly also with lower levels of children's internalizing ($r = -.34, p < .02$) and externalizing behavior problems ($r = -.56, p < .001$), as well as higher levels of cognitive competence ($r = .39, p < .01$), and peer acceptance ($r = .37, p < .01$). In addition, parents' greater use of psychological aggression was correlated significantly with children's higher levels of externalizing behavior problems ($r = .40, p < .004$).

Social desirability concerns were correlated significantly with parents' ratings of lower levels of depression ($r = -.41, p < .003$), trait anger ($r = -.41, p < .003$), and anger expression ($r = -.45, p < .001$). In addition, greater ratings of social desirability were correlated significantly with higher levels of emotional availability ($r = .31, p < .02$) and autonomy granting ($r = .31, p < .04$). Finally, social desirability ratings were correlated with lower levels of psychological aggression ($r = -.40, p < .003$), but not with any other discipline styles.

Regression Analyses for the Moderational Hypotheses

The hypothesis that characteristics of the parent-child relationship may moderate the relationship between discipline and children's behavior problems was examined using a series of regression analyses. Independent regression analyses predicting children's internalizing or externalizing behavior problems will be described for the Head Start sample and the Private School sample, respectively. In each regression analysis, children's internalizing or externalizing behavior problems served as the criterion variable, with parental discipline and parent-child relationship characteristics, as well as the interaction of these variables, serving as the predictor variables. Given the high correlation between parental involvement and emotional availability within the Head Start ($r = .49, p < .001$) and the Private School samples ($r = .41, p < .004$), these variables were combined into a composite *parental warmth* variable. In addition, for the sake of parsimony, corporal punishment, maltreatment, and severe maltreatment were combined into a *parental physical control* variable. For a graphic presentation of the regression analyses for the moderational hypotheses, see *Table 3* and *Table 4* for the Head Start and Private School samples, respectively.

Head Start Sample

With regard to internalizing behavior problems, a series of regressions were conducted with parental discipline and parent-child relationship variables in the first step and the interaction of discipline and the respective relationship variable in the second step. Parents' use of nonviolent discipline and parental warmth did not predict significantly children's level of internalizing behavior problems, $F(2, 39) = 1.84, p < .17$, and adding the interaction of these two variables did not contribute to the prediction model, $F(3, 38) = 1.39, p < .26$. Similarly, parents'

use of nonviolent discipline and parental autonomy granting did not predict significantly children's level of internalizing behavior problems, $F(2, 40) = 2.49, p < .10$, and adding the interaction of these two variables did not contribute to the prediction model, $F(3, 39) = 1.63, p < .20$. Parents' use of nonviolent discipline and communication did not predict significantly children's level of internalizing behavior problems, $F(2, 41) = 1.65, p < .20$, and adding the interaction of these two variables did not contribute to the prediction model, $F(3, 40) = 1.80, p < .16$.

Parents' use of psychological aggression and parental warmth did not predict significantly children's level of internalizing behavior problems, $F(2, 39) = 1.19, p < .31$, and the interaction of these two variables did not contribute significantly to the equation, $F(3, 38) = .81, p < .50$. Parental psychological aggression and autonomy granting did not predict significantly children's level of internalizing behavior problems, $F(2, 41) = 2.03, p < .14$, nor did the interaction term, $F(3, 40) = 1.34, p < .27$. Parents' use of psychological aggression and communication did not predict significantly children's level of internalizing behavior problems, $F(2, 42) = .11, p < .90$, and the interaction of these two variables did not contribute significantly to the equation, $F(3, 41) = 1.54, p < .22$.

Parents' use of physical control and parental warmth did not predict significantly children's level of internalizing behavior problems, $F(2, 39) = 3.09, p < .06$, and adding the interaction of these two variables did not contribute to the prediction model, $F(3, 38) = 2.23, p < .10$. In contrast, parents' level of physical control and autonomy granting predicted significantly children's level of internalizing behavior problems, $F(2, 38) = 5.07, p < .01$. Adding the interaction of these two variables, although significant, $F(3, 37) = 3.45, p < .03$, did not contribute to the prediction model (i.e., change in F was not significant; $p < .54$). Parents' use

of physical control and communication did not predict significantly children's level of internalizing behavior problems, $F(2, 39) = 1.51, p < .24$, and adding the interaction of these two variables did not contribute to the prediction model, $F(3, 38) = 2.37, p < .09$.

Regarding children's externalizing behavior problems, a series of regressions were conducted with parental discipline and parent-child relationship variables in the first step and the interaction of discipline and the respective relationship variable in the second step. Parents' use of nonviolent discipline and parental warmth predicted significantly children's level of externalizing behavior problems, $F(2, 39) = 4.31, p < .02$. Adding the interaction of these two variables, although significant, $F(3, 38) = 2.90, p < .05$, did not contribute significantly to the prediction model. Parents' use of nonviolent discipline and parental autonomy granting did not predict significantly children's level of externalizing behavior problems, $F(2, 40) = 1.74, p < .19$, and adding the interaction term did not contribute to the prediction model, $F(3, 39) = 1.13, p < .35$. Parents' use of nonviolent discipline and communication did not predict significantly children's level of externalizing behavior problems, $F(2, 41) = 2.65, p < .08$, and adding the interaction term did not contribute to the prediction model, $F(3, 40) = 2.06, p < .12$.

Parents' use of psychological aggression and parental warmth predicted significantly children's level of externalizing behavior problems, $F(2, 39) = 3.63, p < .04$, whereas the interaction of these two variables did not contribute to the prediction model, $F(3, 38) = 2.37, p < .09$. Parental psychological aggression and autonomy granting did not predict significantly children's level of externalizing behavior problems, $F(2, 41) = 2.17, p < .13$, nor did the interaction term, $F(3, 40) = 1.56, p < .21$. Similarly, parents' use of psychological aggression and communication did not predict significantly children's level of externalizing behavior

problems, $F(2, 42) = 2.40, p < .10$, and adding the interaction term did not contribute to the prediction model, $F(3, 41) = 1.78, p < .17$.

Parents' use of physical control and parental warmth did predict significantly children's level of externalizing behavior problems, $F(2, 39) = 5.35, p < .009$. Adding the interaction of physical control and warmth, though significant, $F(3, 38) = 3.58, p < .02$, did not contribute to the prediction model (i.e., change in F was not significant; $p < .63$). Similarly, parents' level of physical control and autonomy granting predicted significantly children's level of externalizing behavior problems, $F(2, 38) = 3.87, p < .03$, but the interaction term did not contribute significantly to the prediction model, $F(3, 37) = 2.62, p < .07$. Finally, parents' level of physical control and communication predicted significantly children's level of externalizing behavior problems, $F(2, 39) = 4.29, p < .02$. The interaction term, although significant, $F(3, 38) = 2.79, p < .05$, did contribute significantly to the prediction model ($p < .89$). Thus, there was no evidence of a moderational model in the Head Start sample.

Private School Sample

With the private school sample, site type was the first variable entered to control for slight differences in income, ($t_{(47)} = -3.41, p < .003$), parental support, ($t_{(47)} = -2.22, p < .03$), and social desirability scores, ($t_{(51)} = -2.38, p < .007$) that were found between most parents with children in a Private School and parents who were attending a university. To examine the moderation hypothesis regarding children's internalizing behavior problems, a series of regressions were conducted with parental discipline and parent-child relationship variables in the second step and the interaction of discipline and the respective relationship variable in the third step. Parents' use of nonviolent discipline and parental warmth did not predict significantly their

children's level of internalizing behavior problems, $F(3, 42) = 1.81, p < .16$, and adding the interaction of these two variables did not contribute to the prediction model, $F(4, 41) = 1.43, p < .24$. Similarly, parents' use of nonviolent discipline and parental autonomy granting did not predict significantly their children's level of internalizing behavior problems, $F(3, 42) = .68, p < .57$, and adding the interaction of these two variables did not contribute to the prediction model, $F(4, 41) = .72, p < .59$. Parents' use of nonviolent discipline and communication did not predict significantly their children's level of internalizing behavior problems, $F(3, 43) = 2.39, p < .08$, and adding the interaction of these two variables did not contribute to the prediction model, $F(4, 42) = 1.79, p < .15$.

Parents' use of psychological aggression and parental warmth also did not predict significantly their children's level of internalizing behavior problems, $F(3, 41) = 2.07, p < .12$, and neither did the interaction of these two variables, $F(4, 40) = 1.58, p < .20$. Parental psychological aggression and autonomy granting did not predict significantly children's level of internalizing behavior problems, $F(3, 41) = 1.07, p < .37$. The interaction of psychological aggression and autonomy granting, however, was a significant predictor of children's internalizing behavior problems, $F(4, 40) = 2.89, p < .03$. Parents' use of psychological aggression and communication did not predict significantly their children's level of internalizing behavior problems, $F(3, 42) = 2.41, p < .08$, and adding the interaction of these two variables did not contribute to the prediction model, $F(4, 41) = 1.85, p < .14$.

Parents' use of physical control and parental warmth did not predict significantly children's level of internalizing behavior problems, $F(3, 42) = 1.82, p < .16$, and neither did the interaction of these two variables, $F(4, 41) = 1.35, p < .27$. Similarly, parents' level of physical control and autonomy granting did not predict significantly their children's level of internalizing

behavior problems, $F(3, 42) = .66, p < .58$. Adding the interaction of these two variables did not contribute to the prediction model, $F(4, 41) = 1.49, p < .22$. Parents' use of physical control and communication did not predict significantly their children's level of internalizing behavior problems, $F(3, 43) = 2.39, p < .08$, and adding the interaction of these two variables did not contribute to the prediction model, $F(4, 42) = 1.75, p < .16$.

In reference to children's externalizing behavior problems, a series of regressions were conducted with parental discipline and parent-child relationship variables in the second step (after accounting for site in the first step) and the interaction of discipline and the respective relationship variable in the third step. Parents' use of nonviolent discipline and parental warmth did not predict significantly children's level of externalizing behavior problems, $F(3, 42) = 2.45, p < .08$, and adding the interaction of these two variables did not contribute to the prediction model, $F(4, 41) = 1.86, p < .14$. Similarly, parents' use of nonviolent discipline and parental autonomy granting did not predict significantly their children's level of externalizing behavior problems, $F(3, 42) = 1.79, p < .17$, and adding the interaction of these two variables did not contribute to the prediction model, $F(4, 41) = 1.46, p < .23$. In contrast, parents' use of nonviolent discipline and communication predicted significantly children's level of externalizing behavior problems, $F(3, 43) = 8.30, p < .001$. Adding the interaction of these two variables, although significant, $F(3, 43) = 8.30, p < .001$, did not contribute to the prediction model above and beyond what the individual variables contributed (i.e., the change in F was not significant, $p < .44$).

Parents' use of psychological aggression and parental warmth predicted significantly their children's level of externalizing behavior problems, $F(3, 41) = 4.55, p < .008$, and adding the interaction of these two variables, although significant, $F(4, 40) = 3.33, p < .02$, did not

contribute to the prediction model ($p < .87$). Parental psychological aggression and autonomy granting predicted significantly their children's level of externalizing behavior problems, $F(3, 41) = 3.93, p < .02$, and so did the interaction of these two variables, $F(4, 40) = 2.88, p < .04$, although it did not contribute a significant change in F ($p < .95$). Likewise, parents' use of psychological aggression and communication predicted significantly children's level of externalizing behavior problems, $F(3, 42) = 9.43, p < .001$, and adding the interaction of these two variables, although significant, $F(4, 41) = 6.90, p < .001$, did not contribute to the prediction model ($p < .96$).

Parents' use of physical control and parental warmth predicted significantly children's level of externalizing behavior problems, $F(4, 41) = 1.77, p < .15$, but adding the interaction of these two variables did not contribute to the prediction model, $F(4, 41) = 1.77, p < .15$. Lastly, parents' level of physical control and autonomy granting did not predict significantly children's level of externalizing behavior problems, $F(3, 42) = 1.54, p < .22$, and neither did the interaction of these two variables, $F(4, 41) = 1.27, p < .30$. In contrast, parents' use of physical control and communication predicted significantly children's level of externalizing behavior problems, $F(3, 43) = 8.09, p < .001$, and adding the interaction of these two variables, although significant, $F(4, 42) = 6.31, p < .001$, did not contribute to the prediction model ($p < .33$).

Regression Analyses for the Mediation Model

Based on the hypothesized mediational model, it was expected that parental attributions of control would predict child behavior problems by way of parental discipline practices. This model was tested using a series of regression analyses. Based on Baron and Kenny (1986), evidence of a mediational model would require several findings (see *Figure 1*). Parental

attributions would have to predict parental discipline (measured by ratings of nonviolent discipline, psychological aggression, and physical control; path a) as well as child behavior problems (measured by ratings of children's internalizing and externalizing behavior problems; path b). Parental discipline also would have to predict child behavior problems (path c) in an equation where parental attributions and parental discipline served as predictor variables and children's behavior problems served as the criterion variable. Once parental discipline was included in the prediction equation, the relationship between parental attributions and children's behavior problems would no longer be significant, indicating the mediational role of discipline. See *Table 5* and *Table 6* for a graphic presentation of these regression analyses.

Head Start Sample

With the Head Start sample, parental attributions of control did not predict significantly parents' use of psychological aggression, $F(2, 54) = 1.36, p < .27$, or physical control, $F(2, 49) = 2.17, p < .13$. Parental attributions of control approached significance, however, in predicting parents' use of nonviolent discipline, $F(2, 52) = 2.90, p < .06$. In particular, child control for failure accounted for a significant amount of the variance in nonviolent discipline ($p < .03$), with higher levels of attributions of child control for failure related to lower levels of nonviolent discipline ($r = -.28, p < .04$). These regression analyses comprised the first regression equations of the mediational model for the Head Start sample. The second and third set of regressions will be described first in reference to children's internalizing behavior problems and then regarding externalizing behavior problems.

In the second regression equation of the mediational model, Head Start parents' attributions of control did not predict significantly children's internalizing behavior problems, F

(2, 52) = .39, $p < .68$. In the third set of equations for the mediational model, both parental attribution and types of discipline were included as predictor variables. Each type of discipline was examined separately. First, parental attribution and nonviolent discipline did not predict significantly children's internalizing behavior problems, $F(3, 48) = 1.01, p < .40$. Second, parental attribution and psychological aggression also did not predict significantly children's internalizing behavior problems, $F(3, 49) = .13, p < .94$. Finally, parental attribution and physical control did not predict children's internalizing behavior problems, $F(3, 45) = .91, p < .44$. Thus, a mediational model was not found to explain the relationship between parental attributions and children's internalizing behavior problems when different types of discipline were used as mediators.

With regard to children's externalizing behavior problems, the second regression equation suggested that attributions of control did not predict significantly children's externalizing behavior problems, $F(2, 52) = .36, p < .70$. In the third set of regressions predicting externalizing behavior problems, both parental attribution and types of discipline were included as predictor variables. Each type of discipline was examined separately. First, parental attribution and nonviolent discipline did not predict significantly children's externalizing behavior problems, $F(3, 48) = 1.33, p < .28$. Second, parental attribution and psychological aggression also did not predict significantly children's externalizing behavior problems, $F(3, 49) = .35, p < .79$. Finally, parental attribution and physical control did not predict children's externalizing behavior problems, $F(3, 45) = 1.23, p < .31$. Thus, a mediational model was not found to explain the relationship between parental attributions and children's externalizing behavior problems when different types of discipline were as used as mediators.

Private School Sample

With the private school sample, a grouping variable was the first variable entered to control for differences in income, parental support, and social desirability scores that were found in t-tests comparing parents who were university students versus those who were not students. Regression analyses will be described first for internalizing behavior problems as the criterion variable, followed by regressions referring to externalizing behavior problems.

Following the grouping variable, the mediational hypothesis was tested with the same steps described previously. First, each type of discipline was regressed independently onto parental attributions of control. Parental attributions of control did not predict significantly parents' use of nonviolent discipline, $F(3, 51) = .62, p < .61$, psychological aggression, $F(3, 50) = .04, p < .99$, or physical control, $F(3, 51) = 2.40, p < .08$. The second and third set of regressions will be described regarding children's internalizing behavior problems first, followed by the regressions referring to externalizing behavior problems.

In the second regression equation of the mediational model, Private School parents' attributions of control did not predict significantly children's internalizing behavior problems, $F(3, 46) = .94, p < .43$. In the third set of regressions for the mediational model, including parental attribution and discipline, each type of discipline was examined separately. First, parental attribution and nonviolent discipline did not predict significantly children's internalizing behavior problems, $F(4, 45) = .75, p < .56$. Second, parental attribution and psychological aggression also did not predict significantly children's internalizing behavior problems, $F(4, 44) = 1.05, p < .39$. Finally, parental attribution and physical control did not predict significantly children's internalizing behavior problems, $F(4, 45) = .69, p < .60$. This pattern of results did not suggest a mediational model to explain the relationship between parental attributions and

children's internalizing behavior problems when different types of discipline were used as mediators.

With regard to children's externalizing behavior problems, the second regression equation suggested that attributions of control did not predict significantly children's externalizing behavior problems, $F(3, 46) = 1.53, p < .22$. In the third set of regressions for the mediational model, including parental attribution and discipline, each type of discipline was examined separately. First, parental attribution and nonviolent discipline did not predict significantly children's externalizing behavior problems, $F(4, 45) = 2.00, p < .11$. Second, parental attribution and psychological aggression did predict significantly children's externalizing behavior problems, $F(4, 44) = 3.50, p < .01$, with higher levels of psychological aggression being related to higher levels of children's externalizing behavior problems ($r = .40, p < .004$). Finally, parental attribution and physical control did not predict significantly children's externalizing behavior problems, $F(4, 45) = 1.72, p < .16$. This pattern of results does not suggest a mediational model to explain the relationship between parental attributions of control and children's externalizing behavior problems when different types of discipline were used as mediators.

Table 1. Differences Between Groups

Variable	Group	N	M	SD	<i>t</i>	<i>p</i> <
Education	Head Start	61	4.16	1.55	-7.14	.001
	Private School	56	5.80	.86		
Occupation	Head Start	54	3.87	2.44	-1.40	.17
	Private School	54	4.59	2.91		
Income	Head Start	57	2.54	1.42	-10.88	.001
	Private School	49	6.41	2.11		
Parental depression	Head Start	60	9.42	8.82	2.81	.006
	Private School	53	5.32	6.63		
Trait anger	Head Start	73	13.82	4.10	-1.76	.08
	Private School	54	15.04	3.50		
Anger expression	Head Start	60	30.68	12.80	1.60	.11
	Private School	52	27.10	10.70		
Adult Control for Failure	Head Start	61	4.13	.62	.22	.82
	Private School	55	4.11	.59		
Child Control for Failure	Head Start	61	3.84	.66	1.69	.09
	Private School	55	3.66	.44		
Emotional availability	Head Start	59	70.45	7.40	1.09	.28
	Private School	56	69.18	5.11		
Involvement	Head Start	48	47.42	5.82	-3.19	.002
	Private School	49	50.55	3.57		
Communication	Head Start	49	29.78	3.69	-.45	.65
	Private School	5	30.08	3.02		
Autonomy granting	Head Start	50	23.72	3.36	-5.78	.001
	Private School	48	27.60	3.29		
Nonviolent discipline	Head Start	70	45.59	30.79	-2.81	.006
	Private School	55	59.04	22.61		
Psychological aggression	Head Start	73	19.89	22.84	1.38	.17
	Private School	54	15.43	13.48		
Corporal punishment	Head Start	69	13.52	20.51	1.57	.12
	Private School	55	8.82	12.55		
Maltreatment	Head Start	72	.64	2.23	1.36	.18
	Private School	55	.25	.78		
Severe maltreatment	Head Start	74	.14	.96	1.22	.23
	Private School	55	.00	.00		
Internalizing	Head Start	62	49.85	12.69	2.35	.02
	Private School	51	45.12	8.66		
Externalizing	Head Start	62	46.34	12.58	1.55	.12
	Private School	51	42.84	11.02		
Cognitive competence	Head Start	58	20.08	4.15	-2.90	.005
	Private School	44	22.00	2.47		
Peer acceptance	Head Start	59	17.44	4.31	-1.68	.10
	Private School	50	18.76	3.81		
Physical competence	Head Start	56	19.29	4.19	.26	.80
	Private School	50	19.10	3.13		
Social desirability	Head Start	53	22.25	5.07	3.50	.001
	Private School	53	18.81	5.04		

Table 2. Correlations Among Parental Symptoms, Attribution, Relationship Characteristics, Discipline, and Child Functioning

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Depression	—	.02	.13	-.02	-.21	.16	.21	-.35*	-.47**	.09	.37**	.15	.13	++	.63**	.32*	.04	-.20	-.26	-.41**
2. Trait anger	.37**	—	.57**	-.03	.05	-.24	-.03	-.16	-.24	.27	.53**	.15	.05	++	.08	.28	-.09	-.03	-.15	-.41**
3. Anger Exp.	.30*	.36**	—	.08	.07	-.27	-.20	-.37*	-.30	.07	.31*	.18	.16	++	.34*	.41**	-.23	-.25	-.27	-.45**
4. ACF	-.21	-.06	-.13	—	.14	.10	.03	-.05	.17	-.16	.04	-.16	.06	++	-.04	.11	.10	-.07	.09	.17
5. CCF	.03	-.14	.01	-.05	—	.10	-.09	-.07	-.08	-.11	.03	.29*	.13	++	-.11	-.12	-.20	-.04	-.02	.06
6. Emot. Av.	-.03	-.44**	-.29	-.08	.18	—	.41**	.32*	.09	-.40**	-.25	-.14	-.21	++	-.11	-.13	.02	-.13	-.05	.31*
7. Involve.	-.40**	-.56**	-.50	.19	.13	.49**	—	.61**	.17	-.09	-.04	-.37**	.02	++	-.40**	-.32*	.29	.14	.06	.06
8. Communicat.	-.26	-.17	-.46	.09	-.12	.53**	.67**	—	.17	-.20	-.35*	-.32*	-.19	++	-.34*	-.56**	.39*	.37*	.10	.13
9. Autonomy	-.23	-.14	-.21	-.11	-.13	-.06	.09	-.12	—	.03	-.02	-.09	.09	++	-.10	-.10	.09	.16	.28	.31*
10. Nonviolent	-.07	.09	-.01	-.12	-.28*	.14	-.02	.11	.000	—	.43**	.40**	.24	++	.08	.24	.23	.01	.14	-.19
11. Psych. ag.	.21	.29*	.32*	-.18	-.10	-.09	-.21	.04	-.10	.56**	—	.57**	.42**	++	.18	.40**	-.01	-.10	.02	-.40**
12. Corporal	.24	.15	.28*	-.24	.08	.08	-.18	.18	-.09	.39**	.83**	—	.49**	++	.01	.16	.04	-.22	-.09	-.16
13. Maltreatment	.54**	.36**	.17	-.29*	-.11	-.11	-.44**	-.26	.05	.05	.18	.29*	—	++	-.07	.08	-.08	-.22	-.22	-.15
14. Sev. maltrt.	-.13	.09	.15	-.10	.03	-.29*	-.24	-.08	-.03	.13	.26*	.01	.01	—	++	++	++	++	++	++
15. Internalizing	.58**	.31*	.35*	-.03	.12	-.03	-.46**	-.09	-.32*	-.09	.13	.28*	.35**	-.002	—	.59**	.06	-.15	-.12	-.06
16. Externalizing	.59**	.29*	.30*	-.07	-.06	-.22	-.45**	-.11	-.27	-.09	.19	.31*	.28*	.03	.81**	—	-.13	-.22	-.22	-.03
17. Cog. comp.	-.38**	-.24	-.20	.33*	.05	.24	.52**	.01	.17	.07	-.23	-.27*	-.43**	-.38**	-.25	-.33*	—	.10	.22	.26
18. Peer accept.	-.16	-.09	.01	.17	-.09	.43**	.25	.03	-.10	.08	-.12	-.10	-.21	-.36**	-.24	-.31*	.54**	—	.35*	-.24
19. Phys. comp.	-.09	-.17	-.15	.32*	.00	.50**	.40**	-.05	.00	.08	-.26	-.24	-.21	-.44**	-.07	-.24	.75**	.66**	—	.27
20. Soc. desirab.	-.31*	-.30*	-.37*	.22	.13	.11	.35	.14	-.04	-.09	-.18	-.25	-.16	.08	-.21	-.26	.13	.05	.01	—

Note. *Correlations for Head Start are below the diagonal. Correlations for Private School sample are above the diagonal.*

++*Could not be computed because the variable is a constant.* * $p < .05$ ** $p < .01$

Table 3. Regression Analyses for Moderational Hypothesis in Head Start Parents

Variables	SE B	β	t
Internalizing child problems			
Nonviolent discipline – warmth			
Step 1. $F(2, 39) = 1.84, p < .17, R^2 = .09$			
Nonviolent discipline	.06	-.14	-.90
Warmth	.17	-.26	-1.72
Step 2. $F(3, 38) = 1.39, p < .26, R^2 = .10, R^{2\Delta} = .01$			
Nonviolent discipline	.66	1.07	.64
Warmth	.30	-.10	-.37
Interaction	.006	-1.22	-.72
Nonviolent discipline – autonomy			
Step 1. $F(2, 40) = 2.49, p < .10, R^2 = .11$			
Nonviolent discipline	.06	-.12	-.83
Autonomy	.53	-.31	-2.09*
Step 2. $F(3, 39) = 1.63, p < .20, R^2 = .11, R^{2\Delta} = .001$			
Nonviolent discipline	.26	.08	.07
Autonomy	1.12	-.26	-.82
Interaction	.02	-.21	-.18
Nonviolent discipline - communication			
Step 1. $F(2, 41) = 1.65, p < .20, R^2 = .08$			
Nonviolent discipline	.05	-.16	-1.04
Communication	.56	-.21	-1.41
Step 2. $F(3, 40) = 1.80, p < .16, R^2 = .12, R^{2\Delta} = .04$			
Nonviolent discipline	.63	-2.63	-1.50
Communication	1.26	-.64	-1.90
Interaction	.02	2.55	1.42
Psychological aggression - warmth			
Step 1. $F(2, 39) = 1.19, p < .31, R^2 = .06$			
Psychological aggression	.07	.09	.57
Warmth	.17	-.21	-1.29
Step 2. $F(3, 38) = .81, p < .50, R^2 = .06, R^{2\Delta} = .002$			
Psychological aggression	.89	-.52	-.27
Warmth	.29	-.27	-1.02
Interaction	.01	.60	.31
Psychological aggression - autonomy			
Step 1. $F(2, 41) = 2.03, p < .14, R^2 = .09$			
Psychological aggression	.08	.12	.78
Autonomy	.55	-.26	-1.76
Step 2. $F(3, 40) = 1.34, p < .27, R^2 = .09, R^{2\Delta} = .001$			
Psychological aggression	.64	-.17	-.14
Autonomy	.81	-.30	-1.36
Interaction	.03	.29	.24

(table continues) * $p < .05$ ** $p < .01$ *** $p < .001$

Table 3 (continued)

Variables	SE B	β	t
Psychological aggression - communication			
Step 1. $F(2, 42) = .11, p < .90, R^2 = .01$			
Psychological aggression	.07	.06	.39
Communication	.65	-.04	-.27
Step 2. $F(3, 41) = 1.54, p < .22, R^2 = .10, R^{2\Delta} = .10^*$			
Psychological aggression	.85	-3.96	-2.06*
Communication	.96	-.41	-1.78
Interaction	.03	4.06	2.09*
Physical control - warmth			
Step 1. $F(2, 39) = 3.09, p < .06, R^2 = .14$			
Physical control	.07	.28	1.85
Warmth	.17	-.23	-1.56
Step 2. $F(3, 38) = 2.23, p < .10, R^2 = .15, R^{2\Delta} = .01$			
Physical control	1.22	2.17	.87
Warmth	.24	-.12	-.59
Interaction	.01	-1.90	-.76
Physical control - autonomy			
Step 1. $F(2, 38) = 5.07, p < .01, R^2 = .21^{**}$			
Physical control	.08	.32	2.24*
Autonomy	.56	-.31	-2.13*
Step 2. $F(3, 37) = 3.45, p < .03, R^2 = .22, R^{2\Delta} = .01$			
Physical control	.94	-.69	-.42
Autonomy	.81	-.40	-1.92
Interaction	.04	-.01	.61
Physical control - communication			
Step 1. $F(2, 39) = 1.51, p < .24, R^2 = .07$			
Physical control	.08	.21	1.34
Communication	.62	-.21	-1.34
Step 2. $F(3, 38) = 2.37, p < .09, R^2 = .16, R^{2\Delta} = .09$			
Physical control	1.02	-3.84	-1.87
Communication	.73	-.43	-2.28*
Interaction	.03	4.10	1.97
Externalizing child problems			
Nonviolent discipline - warmth			
Step 1. $F(2, 39) = 4.31, p < .02, R^2 = .18^*$			
Nonviolent discipline	.06	-.18	-1.23
Warmth	.16	-.39	-2.69*
Step 2. $F(3, 38) = 2.90, p < .04, R^2 = .19, R^{2\Delta} = .01$			
Nonviolent discipline	.63	.61	.38
Warmth	.28	-.29	-1.11
Interaction	.01	-.79	-.49

(table continues) * $p < .05$ ** $p < .01$ *** $p < .001$

Table 3 (continued)

Variables	SE B	β	t
Nonviolent discipline - autonomy			
Step 1. $F(2, 40) = 1.74, p < .19, R^2 = .08$			
Nonviolent discipline	.06	-.16	-1.04
Autonomy	.55	-.24	-1.57
Step 2. $F(3, 39) = 1.13, p < .35, R^2 = .08, R^{2\Delta} = .000$			
Nonviolent discipline	.47	-.25	-.22
Autonomy	1.16	-.26	-.81
Interaction	.02	.10	.08
Nonviolent discipline - communication			
Step 1. $F(2, 41) = 2.65, p < .08, R^2 = .12$			
Nonviolent discipline	.06	-.18	-1.19
Communication	.59	-.28	-1.89
Step 2. $F(3, 40) = 2.06, p < .12, R^2 = .13, R^{2\Delta} = .02$			
Nonviolent discipline	.67	-1.82	-1.04
Communication	1.33	-.56	-1.68
Interaction	.02	1.69	.95
Psychological aggression - warmth			
Step 1. $F(2, 39) = 3.63, p < .04, R^2 = .16^*$			
Psychological aggression	.07	.13	.87
Warmth	.17	-.35	-2.32*
Step 2. $F(3, 38) = 2.37, p < .09, R^2 = .16, R^{2\Delta} = .001$			
Psychological aggression	.87	-.20	-.11
Warmth	.28	-.38	-1.53
Interaction	.01	.32	.18
Psychological aggression - autonomy			
Step 1. $F(2, 41) = 2.17, p < .13, R^2 = .10$			
Psychological aggression	.08	.19	1.29
Autonomy	.56	-.22	-1.48
Step 2. $F(3, 40) = 1.56, p < .21, R^2 = .11, R^{2\Delta} = .009$			
Psychological aggression	.65	-.56	-.47
Autonomy	.84	-.33	-1.47
Interaction	.03	.76	.64
Psychological aggression - communication			
Step 1. $F(2, 42) = 2.40, p < .10, R^2 = .10$			
Psychological aggression	.07	.16	1.06
Communication	.67	-.29	-1.96
Step 2. $F(3, 41) = 1.78, p < .17, R^2 = .12, R^{2\Delta} = .01$			
Psychological aggression	.91	-1.32	-.69
Communication	1.03	-.42	-1.85
Interaction	.03	1.49	.77

(table continues) * $p < .05$ ** $p < .01$ *** $p < .001$

Table 3 (continued)

Variables	SE B	β	t
Physical control – warmth			
Step 1. $F(2, 39) = 5.35, p < .01, R^2 = .22$			
Physical control	.07	.28	1.95*
Warmth	.16	-.36	-2.52*
Step 2. $F(3, 38) = 3.58, p < .02, R^2 = .22, R^{2\Delta} = .005$			
Physical control	1.17	1.45	.61
Warmth	.22	-.29	-1.46
Interaction	.01	-1.17	-.49
Physical control - autonomy			
Step 1. $F(2, 38) = 3.87, p < .03, R^2 = .17^*$			
Physical control	.08	.35	2.36*
Autonomy	.57	-.20	-1.34
Step 2. $F(3, 37) = 2.62, p < .07, R^2 = .18, R^{2\Delta} = .006$			
Physical control	.96	-.54	-.32
Autonomy	.82	-.28	-1.30
Interaction	.04	.89	.52
Physical control - communication			
Step 1. $F(2, 39) = 4.29, p < .02, R^2 = .18^*$			
Physical control	.08	.31	2.13*
Communication	.60	-.35	-2.37*
Step 2. $F(3, 38) = 2.79, p < .05, R^2 = .18, R^{2\Delta} = .000$			
Physical control	1.04	.59	.29
Communication	.75	-.34	-1.82
Interaction	.03	-.28	-.14

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

Table 4. Regression Analyses for Moderational Hypothesis in Private School Parents

Variables	SE B	β	<i>t</i>
Internalizing child problems			
Nonviolent discipline – warmth			
Step 1. $F(1, 44) = 1.30, p < .26, R^2 = .01$			
Site	1.72	-.17	-1.14
Step 2. $F(3, 42) = 1.81, p < .16, R^2 = .05, R^{2\Delta} = .09$			
Site	1.69	-.19	-1.30
Nonviolent discipline	.06	-.01	-.04
Warmth	.18	-.30	-1.93
Step 3. $F(4, 41) = 1.43, p < .24, R^2 = .04, R^{2\Delta} = .01$			
Site	1.81	-.22	-1.41
Nonviolent discipline	.92	-1.43	-.60
Warmth	.51	-.54	-1.24
Interaction	.01	1.37	.60
Nonviolent discipline - autonomy			
Step 1. $F(1, 44) = 1.54, p < .22, R^2 = .76$			
Site	1.72	-.18	-1.24
Step 2. $F(3, 42) = .68, p < .57, R^2 = -.02, R^{2\Delta} = .01$			
Site	1.84	-.18	-1.13
Nonviolent discipline	.06	.10	.68
Autonomy	.42	-.04	-.26
Step 3. $F(4, 41) = .72, p < .59, R^2 = -.03, R^{2\Delta} = .01$			
Site	1.87	-.21	-1.30
Nonviolent discipline	.47	1.21	1.00
Autonomy	1.08	.30	.74
Interaction	.02	-1.15	-.92
Nonviolent discipline - communication			
Step 1. $F(1, 45) = 1.45, p < .24, R^2 = .03$			
Site	1.70	-.18	-1.20
Step 2. $F(3, 43) = 2.38, p < .08, R^2 = .14, R^{2\Delta} = .11$			
Site	1.64	-.17	-1.22
Nonviolent discipline	.06	-.003	-.02
Communication	.47	-.33	-2.27*
Step 3. $F(4, 42) = 1.79, p < .15, R^2 = .15, R^{2\Delta} = .003$			
Site	1.66	-.18	-1.24
Nonviolent discipline	.63	-.62	-.38
Communication	1.32	-.48	-1.15
Interaction	.02	.60	.38

(table continues) * $p < .05$ ** $p < .01$ *** $p < .001$

Table 4 (continued)

Variables	SE B	β	t
Psychological aggression - warmth			
Step 1. $F(1, 43) = 1.28, p < .27, R^2 = .03$			
Site	1.83	-.17	-1.13
Step 2. $F(3, 41) = 2.07, p < .12, R^2 = .13, R^{2\Delta} = .10$			
Site	1.78	-.20	-1.36
Psychological aggression	.10	.13	.86
Warmth	.17	-.27	-1.82
Step 3. $F(4, 40) = 1.58, p < .20, R^2 = .14, R^{2\Delta} = .01$			
Site	1.80	-.21	-1.39
Psychological aggression	1.71	-1.06	-.43
Warmth	.28	-.36	-1.50
Interaction	.01	1.17	.48
Psychological aggression - autonomy			
Step 1. $F(1, 43) = 1.52, p < .22, R^2 = .01$			
Site	1.82	-.19	-1.23
Step 2. $F(3, 41) = 1.07, p < .37, R^2 = .01, R^{2\Delta} = .04$			
Site	1.93	-.20	-1.24
Psychological aggression	.11	.19	1.27
Autonomy	.43	-.01	-.09
Step 3. $F(4, 40) = 2.89, p < .03, R^2 = .15, R^{2\Delta} = .15^{**}$			
Site	1.90	-.35	-2.22
Psychological aggression	.87	3.64	2.93*
Autonomy	.70	.59	2.25*
Interaction	.03	-3.43	-2.79*
Psychological aggression - communication			
Step 1. $F(1, 44) = 1.44, p < .24, R^2 = .03$			
Site	1.80	-.18	-1.20
Step 2. $F(3, 42) = 2.41, p < .08, R^2 = .15, R^{2\Delta} = .12$			
Site	1.74	-.16	-1.10
Psychological aggression	.11	.06	.38
Communication	.50	-.31	-2.07*
Step 3. $F(4, 41) = 1.85, p < .14, R^2 = .15, R^{2\Delta} = .006$			
Site	1.77	-.17	-1.15
Psychological aggression	1.60	-1.21	-.53
Communication	.81	-.42	-1.68
Interaction	.05	1.24	.55

(table continues) * $p < .05$ ** $p < .01$ *** $p < .001$

Table 4 (continued)

Variables	SE B	β	t
Physical control - warmth			
Step 1. $F(1, 44) = 1.30, p < .26, R^2 = .03$			
Site	1.72	-.17	-1.14
Step 2. $F(3, 42) = 1.82, p < .16, R^2 = .16, R^{2\Delta} = .09$			
Site	1.69	-.19	-1.29
Physical control	.12	.01	.08
Warmth	.18	-.29	-1.90
Step 3. $F(4, 41) = 1.35, p < .27, R^2 = .18, R^{2\Delta} = .002$			
Site	1.73	-.20	-1.31
Physical control	2.37	-.86	-.29
Warmth	.24	-.33	-1.63
Interaction	.02	.86	.30
Physical control - autonomy			
Step 1. $F(1, 44) = 1.54, p < .22, R^2 = .03$			
Site	1.72	-.18	-1.24
Step 2. $F(3, 42) = .66, p < .58, R^2 = .05, R^{2\Delta} = .01$			
Site	1.83	-.17	-1.10
Physical control	.13	.10	.63
Autonomy	.43	-.03	-.16
Step 3. $F(4, 41) = 1.49, p < .22, R^2 = .13, R^{2\Delta} = .08$			
Site	1.90	-.29	-1.76
Physical control	2.00	4.95	2.00
Autonomy	.63	.31	1.35
Interaction	.08	-4.81	-1.96
Physical control - communication			
Step 1. $F(1, 45) = 1.45, p < .24, R^2 = .03$			
Site	1.70	-.18	-1.20
Step 2. $F(3, 43) = 2.39, p < .08, R^2 = .14, R^{2\Delta} = .11$			
Site	1.64	-.17	-1.23
Physical control	.12	-.01	-.09
Communication	.47	-.34	-2.26**
Step 3. $F(4, 42) = 1.75, p < .16, R^2 = .14, R^{2\Delta} = .000$			
Site	1.66	-.17	-1.21
Physical control	1.41	-.12	-.07
Communication	.54	-.34	-2.01
Interaction	.05	.11	.06

(table continues) * $p < .05$ ** $p < .01$ *** $p < .001$

Table 4 (continued)

Variables	SE B	β	t
Externalizing child problems			
Nonviolent discipline - warmth			
Step 1. $F(1, 44) = 1.92, p < .17, R^2 = .04$			
Site	2.19	-.20	-1.39
Step 2. $F(3, 42) = 2.45, p < .08, R^2 = .15, R^{2\Delta} = .11$			
Site	2.12	-.23	-1.62
Nonviolent discipline	.08	.18	1.21
Warmth	.23	-.22	-1.47
Step 3. $F(4, 41) = 1.86, p < .14, R^2 = .15, R^{2\Delta} = .004$			
Site	2.28	-.26	-1.66
Nonviolent discipline	1.16	-.88	-3.77
Warmth	.64	-.40	-.94
Interaction	.01	1.02	.46
Nonviolent discipline - autonomy			
Step 1. $F(1, 44) = 2.07, p < .16, R^2 = .05$			
Site	2.19	-.21	-1.44
Step 2. $F(3, 42) = 1.79, p < .17, R^2 = .11, R^{2\Delta} = .07$			
Site	2.27	-.22	-1.44
Nonviolent discipline	.07	.26	1.77
Autonomy	.52	-.03	-.20
Step 3. $F(4, 41) = 1.46, p < .23, R^2 = .13, R^{2\Delta} = .01$			
Site	2.32	-.20	-1.27
Nonviolent discipline	.58	-.61	-.52
Autonomy	1.33	-.29	-.76
Interaction	.02	.90	.74
Nonviolent discipline - communication			
Step 1. $F(1, 45) = 2.01, p < .16, R^2 = .04$			
Site	2.16	-.207	-1.42
Step 2. $F(3, 43) = 8.30, p < .001, R^2 = .37, R^{2\Delta} = .32^{***}$			
Site	1.8	-.21	-1.69
Nonviolent discipline	.06	.10	.76
Communication	.51	-.53	-4.21***
Step 3. $F(4, 42) = 6.32, p < .001, R^2 = .38, R^{2\Delta} = .009$			
Site	1.81	-.21	-1.75
Nonviolent discipline	.69	-.99	-.71
Communication	1.44	-.79	-2.22*
Interaction	.02	1.05	.78

(table continues) * $p < .05$ ** $p < .01$ *** $p < .001$

Table 4 (continued)

Variables	SE B	β	t
Psychological aggression - warmth			
Step 1. $F(1, 43) = 2.01, p < .16, R^2 = .05$			
Site	2.32	-.21	-1.42
Step 2. $F(3, 41) = 4.55, p < .008, R^2 = .25, R^{2\Delta} = .21^{**}$			
Site	2.12	-.25	-1.85
Psychological aggression	.12	.36	2.62*
Warmth	.21	-.21	-1.53
Step 3. $F(4, 40) = 3.33, p < .02, R^2 = .25, R^{2\Delta} = .000$			
Site	2.16	-.25	-1.80
Psychological aggression	2.04	.74	.32
Warmth	.34	-.18	-.82
Interaction	.02	-.37	-.16
Psychological aggression - autonomy			
Step 1. $F(1, 43) = 2.16, p < .15, R^2 = .05$			
Site	2.32	-.22	-1.47
Step 2. $F(3, 41) = 3.93, p < .02, R^2 = .22, R^{2\Delta} = .18$			
Site	2.26	-.26	-1.81
Psychological aggression	.13	.42	3.03*
Autonomy	.50	.03	.18
Step 3. $F(4, 40) = 2.88, p < .04, R^2 = .22, R^{2\Delta} = .00$			
Site	2.44	-.26	-1.66
Psychological aggression	1.11	.35	.28
Autonomy	.90	.01	.05
Interaction	.04	.07	.06
Psychological aggression - communication			
Step 1. $F(1, 44) = 2.11, p < .15, R^2 = .05$			
Site	2.28	-.21	-1.45
Step 2. $F(3, 42) = 9.43, p < .001, R^2 = .40, R^{2\Delta} = .36^{***}$			
Site	1.87	-.19	-1.59
Psychological aggression	.12	.22	1.66
Communication	.54	-.48	-3.70**
Step 3. $F(4, 41) = 6.90, p < .000, R^2 = .40, R^{2\Delta} = .000$			
Site	1.91	-.19	-1.56
Psychological aggression	1.72	.12	.06
Communication	.87	-.49	-2.32*
Interaction	.06	.10	.05

(table continues) * $p < .05$ ** $p < .01$ *** $p < .001$

Table 4 (continued)

Variables	SE B	β	t
Physical control - warmth			
Step 1. $F(1, 44) = 1.92, p < .17, R^2 = .04$			
Site	2.19	-.20	-1.39
Step 2. $F(3, 42) = 2.33, p < .09, R^2 = .14, R^{2\Delta} = .10$			
Site	2.13	-.21	-1.49
Physical control	.16	.16	1.06
Warmth	.23	-.23	-1.54
Step 3. $F(4, 41) = 1.77, p < .15, R^2 = .15, R^{2\Delta} = .004$			
Site	2.18	-.22	-1.53
Physical control	2.99	-1.19	-.41
Warmth	.30	-.30	-1.46
Interaction	.03	1.33	.46
Physical control - autonomy			
Step 1. $F(1, 44) = 2.07, p < .16, R^2 = .05$			
Site	2.19	-.21	-1.44
Step 2. $F(3, 42) = 1.54, p < .22, R^2 = .10, R^{2\Delta} = .05$			
Site	2.28	-.21	-1.36
Physical control	.16	.24	1.57
Autonomy	.54	.01	.05
Step 3. $F(4, 41) = 1.27, p < .30, R^2 = .11, R^{2\Delta} = .01$			
Site	2.45	-.25	-1.51
Physical control	2.59	2.02	.81
Autonomy	.81	.13	.56
Interaction	.10	-1.77	-.71
Physical control - communication			
Step 1. $F(1, 45) = 2.01, p < .16, R^2 = .04$			
Site	2.16	-.21	-1.42
Step 2. $F(3, 43) = 8.09, p < .001, R^2 = .36, R^{2\Delta} = .32^{***}$			
Site	1.81	-.20	-1.63
Physical control	.13	.05	.40
Communication	.52	-.55	-4.23***
Step 3. $F(4, 42) = 6.31, p < .000, R^2 = .38, R^{2\Delta} = .02$			
Site	1.81	-.21	-1.70
Physical control	1.54	-1.42	-.95
Communication	.59	-.61	-4.20***
Interaction	.06	1.45	.99

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

Table 5. Regression Analyses for Mediational Hypothesis in Head Start Parents

Path and Variable	<i>SE B</i>	β	<i>t</i>
Path a:			
1. Nonviolent discipline on attributions			
ACF	6.28	-.14	-1.04
CCF	5.90	-.29	-2.22*
2. Psychological aggression on attributions			
ACF	5.07	-.20	-1.48
CCF	4.92	-.11	-.80
3. Physical Control on attributions			
ACF	4.70	-.28	-2.00
CCF	4.74	.04	.26
Path b: Internalizing on parental attributions			
ACF	2.62	-.04	-.26
CCF	2.42	.11	.83
Path c: Internalizing on attribution and nonviolent discipline			
ACF	2.56	-.05	-.34
CCF	2.44	.05	.31
Nonviolent discipline	.06	-.23	-1.54
Path c: Internalizing on attribution and psychological aggression			
ACF	2.67	-.05	-.36
CCF	2.50	.06	.43
Psychological aggression	.07	.02	.15
Path c: Internalizing on attribution and physical control			
ACF	2.77	.07	.46
CCF	2.64	.15	1.02
Physical control	.08	.19	1.25
Path b: Externalizing on parental attributions			
ACF	2.69	-.10	-.74
CCF	2.48	-.07	-.48
Path c: Externalizing on attribution and nonviolent discipline			
ACF	2.61	-.13	-.89
CCF	2.49	-.15	-1.02
Nonviolent discipline	.06	-.26	-1.81
Path c: Externalizing on attribution and psychological aggression			
ACF	2.77	-.09	-.64
CCF	2.60	-.06	-.41
Psychological aggression	.07	.08	.56
Path c: Externalizing on attribution and physical control			
ACF	2.87	-.05	-.35
CCF	2.73	-.10	-.70
Physical control	.08	.25	1.68

* $p < .05$

Table 6. Regression Analyses for Mediation Hypothesis in Private School Parents

Path and Variable	SE B	β	<i>t</i>
Path a:			
1. Nonviolent discipline on attributions			
Site	4.19	-.03	-.19
ACF	5.37	-.15	-1.10
CCF	7.08	-.09	-.63
2. Psychological aggression on attributions			
Site	2.66	.01	.07
ACF	3.26	.04	.26
CCF	4.36	.03	.19
3. Physical Control on attributions			
Site	2.29	-.03	-.19
ACF	2.93	-.20	-1.49
CCF	3.87	.32	2.41*
Path b: Internalizing on parental attributions			
Site	1.63	-.21	-1.47
ACF	2.10	-.05	-.34
CCF	2.97	-.11	-.79
Path c: Internalizing on attribution and nonviolent discipline			
Site	1.65	-.21	-1.47
ACF	2.13	-.04	-.28
CCF	3.01	-.11	-.72
Nonviolent discipline	.06	.07	.49
Path c: Internalizing on attribution and psychological aggression			
Site	1.71	-.21	-1.43
ACF	2.12	-.06	-.44
CCF	3.05	-.09	-.62
Psychological aggression	.10	.18	1.21
Path c: Internalizing on attribution and physical control			
Site	1.65	-.21	-1.44
ACF	2.16	-.05	-.30
CCF	3.09	-.12	-.80
Physical control	.11	.02	.14

(table continues) **p* < .05

Table 6 (continued)

Path and Variable	SE B	β	<i>t</i>
Path b: Externalizing on parental attributions			
Site	2.05	-.25	-1.76
ACF	2.64	.11	.75
CCF	3.72	-.14	-.98
Path c: Externalizing on attribution and nonviolent discipline			
Site	2.00	-.25	-1.84
ACF	2.59	.13	.96
CCF	3.66	-.11	-.78
Nonviolent discipline	.07	.25	1.79
Path c: Externalizing on attribution and psychological aggression			
Site	2.00	-.25	-1.91
ACF	2.47	.07	.55
CCF	3.56	-.09	-.65
Psychological aggression	.12	.39	2.95
Path c: Externalizing on attribution and physical control			
Site	2.03	-.24	-1.71
ACF	2.65	.15	1.03
CCF	3.79	-.19	-1.31
Physical control	.14	.21	1.47

* $p < .05$

CHAPTER FOUR: DISCUSSION

The primary objective of this study involved investigating the relationships among parental depression and anger, parental attributions of control, discipline, characteristics of the parent-child relationship, and ratings of children's internalizing and externalizing behavior problems. Given previous findings suggesting that parenting variables, children's behavior, and the association between them may vary depending on the socioeconomic status (Pettit et al., 1988) and ethnic background (Lequerica & Hermosa, 1995) of families, this study also sought to address the need for research that investigates the differences among these variables for disadvantaged and nondisadvantaged samples. In particular, this study examined two samples of parents who varied in the types of schools their children attended. Given the income restrictions of those children who attend Head Start programs, parents who had children in a Head Start program were conceptualized as being from a lower socioeconomic status, whereas those who had children in a Private School setting were conceptualized as being from a higher socioeconomic status.

As suggested by previous research (Lequerica & Hermosa, 1995; Pettit et al., 1988), several significant differences were found between the Head Start and Private School samples. As would be expected, Head Start parents endorsed significantly lower levels of income and education than did Private School parents, further justifying their categorization as being of low and high socioeconomic status, respectively. Head Start parents also endorsed, on average, lower levels of nonviolent discipline (e.g., explanation, time out), involvement, and autonomy granting. In addition, Head Start parents tended to report higher levels of internalizing behavior problems in their children. Considering the high proportion of Hispanic parents in the Head Start

sample, this finding seems to contradict previous findings that Hispanic parents tend to report higher levels of children's externalizing, rather than internalizing, behavior problems (Lequerica & Hermosa, 1995). A closer inspection of the individual sites' mean scores suggested one possible explanation for these findings. When not including parents who were university students in the Private School sample, Head Start parents provided higher mean levels of children's internalizing and externalizing behavior problems. It is possible that the group of parents attending a university, when included in the Private School sample, changed the mean levels of children's behavior problems.

Hypothesis One

Correlational analyses revealed several significant relationships among the variables examined in this study. As hypothesized based on previous literature (Deater-Deckard & Dodge, 1997; Lequerica & Hermosa, 1995), the frequency of different types of discipline was associated with children's behavior problems. For instance, Head Start parents' use of corporal punishment, as well as physical maltreatment, was correlated significantly with higher levels of children's internalizing and externalizing behavior problems. Interestingly, in the Private School sample, psychological aggression was the only discipline variable related to children's behavior problems, with a positive correlation to higher levels of children's externalizing, but not internalizing, behavior problems. This finding is consistent with those of previous studies, in that relationships between parenting variables and children's behavior problems tend to be stronger when considering externalizing, rather than internalizing, behavior problems (Rothbaum & Weisz, 1994). This pattern was evident throughout the analyses.

Hypothesis Two

The second hypothesis proposed that parent-child relationship characteristics such as warmth, autonomy granting, and communication, would moderate the relationship between specific types of parental discipline and ratings of children's behavior problems. Although there was no evidence for an interaction effect in the Head Start sample, there was some support for this hypothesis in the Private School sample. Although parents' psychological aggression and autonomy granting did not predict significantly children's internalizing behavior problems, the interaction of psychological aggression and autonomy granting was a significant predictor of children's internalizing behavior problems. Judging from this and previous findings (e.g., Grusec & Goodnow, 1994; Hastings & Grusec, 1997), it could be the case that the impact of psychological aggression (e.g., yelling, cursing, threatening, name calling) in promoting children's internalizing behavior problems varies as a function of the autonomy granting parents provide for their children.

Hypothesis Three

Another objective of the current study was to examine whether a mediational model explains the relationship between parental attribution, discipline practices, and child behavior. Specifically, for a mediational model to be supported, it was hypothesized that there would be a positive relationship between parental attributions and levels of parental discipline, that children's behavior problems would be predicted by parental attributions, and that parental discipline would predict significantly children's behavior problems when included in a regression equation with parental attributions. In this last equation, parental attributions would no longer predict significantly children's behavior problems. Although there was no evidence

for the support of a mediation model in either the Head Start or Private School samples, the individual regression equations that were examined provided some interesting results.

In particular, Head Start parents' attributions of control approached significance in predicting parents' use of nonviolent discipline, but did not predict parents' use of psychological aggression or physical control. Specifically, Head Start parents' higher attributions of child control for failure in a caregiving interaction predicted lower levels of nonviolent discipline. This finding contrasts with those of prior studies, which have suggested that lower attributions of adult control for failure would predict harsher discipline (Bugental, 1993). Further, although previous studies have shown support for a mediational model wherein the relationship between attributions of control and children's behavior problems is explained, at least in part, by parents' use of harsher discipline (Nix et al., 1999), no such model was found in either sample. One possible explanation is a restricted range in parents' ratings of their attributions of control. Given that social desirability concerns were not found to correlate with parental attributions of control, it is not likely that self-presentation concerns would explain their tendency to not endorse low perceived control over negative caregiving interactions. Nonetheless, these parents provided, on average, moderate to high ratings of adult control for failure, whereas studies investigating this relationship have included parents that have lower perceived control for failure (Bugental, 1993; Pettit et al., 1988; Strassberg, 1995). Based on previous findings, it is those adults with low perceived control for failure that are at the highest risk for using harsher discipline practices (Bugental, 1993; Strassberg, 1995).

Limitations and Future Directions

As with all studies, this examination of parental depression and anger, attributions of control, discipline, relationship characteristics, and ratings of children's internalizing and externalizing behavior problems was not without limitations. In one respect, the sample examined here was generalizable to the community at large because it included groups with diverse demographics. In contrast, it may be the case that levels of children's behavior problems did not vary as greatly as they would have in a sample of parents with children exhibiting clinical as well as nonclinical levels of the variables of interest. The higher rate of nonclinical scores in the samples examined in this study may have resulted in attenuated correlations in the examination of parents' and children's characteristics. In another respect, given previous findings of sex differences in the relationships among the variables studied (Renk et al., 1999), it is unfortunate that only a small proportion of fathers participated. As a result, an examination of cross-gender effects in the relationships among the variables examined in this study would be an area on which to expand the current investigation. In this way, the predictive ability of these variables with regard to mothers versus fathers could be examined.

In addition to including both mothers and fathers, including siblings in future studies would contribute to the understanding of the specific risk and protective factors that may exist in specific parent-child dyads. Further investigation of the relationships among these variables would do well to include direct observation of parent-child interactions to better obtain a measure of the parent-child variables, rather than using only the report of the parents themselves, which is subject to social desirability concerns. Alternatively, future studies should investigate directly the effect of social desirability on parents' responses to questions regarding discipline practices and their relationship with their children. To gain a comprehensive understanding of

parenting and children's emotional and behavioral functioning across domains, more research in the area of risk and protective factors in parenting is needed, with special attention paid to the intercorrelations among personality characteristics, social cognition, and relationship components.

Grand Scheme

Overall, Head Start parents differed significantly from Private School parents in that, on average, Head Start parents had lower levels of nonviolent discipline, reported less involvement and autonomy granting with regard to their children, and endorsed greater internalizing behavior problems in their children. In addition, it appears that the association between discipline practices and children's behavior problems is complex. Head Start parents' use of corporal punishment and physical maltreatment was associated with greater internalizing and externalizing behavior problems in their children. For Private School parents, however, psychological aggression was the only discipline type related to children's externalizing, but not internalizing, behavior problems. Similarly, relationship characteristics did not moderate the relationship between Head Start parents' discipline practices and their children's behavior problems, whereas Private School parents' use of psychological aggression and autonomy granting were found to interact in the prediction of children's internalizing behavior problems. Although Head Start parents' higher attributions of child control for failure predicted lower levels of non violent discipline, and Private School parents' use of psychological aggression predicted greater levels of children's externalizing behavior problems, there was no evidence of parental discipline mediating the relationship between parental attributions and children's behavior problems. Thus, further investigation is needed to understand how parental discipline

and children's behavior problems relate to other parent-child relationship characteristics across different levels of socioeconomic conditions.

APPENDIX: INSTITUTIONAL REVIEW BOARD APPROVAL



THE UNIVERSITY OF CENTRAL FLORIDA
INSTITUTIONAL REVIEW BOARD (IRB)

IRB Committee Approval Form

PRINCIPAL INVESTIGATOR(S): Arazais Oliveros, Kimberly Renk

PROJECT TITLE: Parental Attributions and Discipline of Child Behavior.

Committee Members:

- Dr. Theodore Angelopoulos: _____
- Ms. Sandra Browdy: _____
- Dr. Jacqui Byers: _____
- Dr. Ratna Chakrabarti: _____
- Dr. Karen Dennis: _____
- Dr. Barbara Fritzsche: _____
- Dr. Robert Kennedy: _____
- Dr. Gene Lee: _____
- Ms. Gail McKinney: _____
- Dr. Debra Reinhart: _____
- Dr. Valerie Sims: _____

Contingent Approval
Dated: _____

Final Approval
Dated: _____

Expedited
Dated: 23 Apr 2004

Exempt
Dated: _____

Signed:  **Chair, IRB**
Dr. Sophia Dziegielewski

NOTES FROM IRB CHAIR (IF APPLICABLE): _____

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