Parent Childrearing Beliefs and Child Externalizing Behaviors in Families of ADHD and ODD Children

June E. Hoefling

University of Central Florida, greatbehavior@earthlink.net
PARENT CHILDRearing BELIEFS AND CHILD EXTERNALIZING BEHAVIORS IN FAMILIES OF ADHD AND ODD CHILDREN

by

JUNE E. HOEFLING
B.B.A. Stetson University, 1985
B.A. University of Central Florida, 1990

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in the Department of Psychology in the College of Arts and Sciences at the University of Central Florida
Orlando, Florida

Summer Term
1998
ABSTRACT

This study investigated the relationship between the perceived externalizing behaviors of children with attention-deficit/hyperactivity disorder (ADHD) and oppositional defiant disorder (ODD) and the maladaptive childrearing beliefs of their parents. The study used archival survey data provided by Intervention Services, Inc., a community mental health center. Data from 338 families with a child diagnosed with ADHD or ODD were analyzed. The study used the Conners' Parent Behavior Rating Scale short version to measure the level of conduct problems, impulsivity, and hyperactivity of the children as perceived by the parents. The Adult-Adolescent Parenting Inventory was used to measure the degree of parental belief in the value of physical punishment and lack of empathy towards children's needs. Both surveys were completed by the parent. Pearson product-moment correlational analyses were undertaken for the total sample and separately for each of four subsamples: 1) males, 2) females, 3) those with ADHD, and 4) those with ODD. The results provided only
moderate support for a few of the hypothesized associations between child externalizing behaviors and parent childrearing beliefs. Significant but very modest correlations were found in the total sample, male sample, and ODD sample. The strongest correlation in each sample was between conduct problems and physical punishment. The most interesting finding of the research was the difference in results between the subsamples. For the participants in this study, males and those with a diagnosis of ODD showed a greater correlation between childrearing beliefs of parents and perceived externalizing behaviors than females and those with a diagnosis of ADHD. Future research could focus on the differences in patterns of correlations found between the subsamples.
FOR MARK AND NATALIE
WITH ALL MY LOVE
ACKNOWLEDGMENTS

The researcher would like to thank the members of her committee: Bernard Jensen, PhD., Chair, for his unfailing support; Sharon Older, PhD. and John McGuire, PhD., for their input and constructive feedback. A special thank you also to Duane Abbott, PhD., for his statistical knowledge and assistance.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES.</td>
<td>vii</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>DISRUPTIVE DISORDERS OF CHILDHOOD.</td>
<td>3</td>
</tr>
<tr>
<td>PARENT-CHILD INTERACTIONS</td>
<td>8</td>
</tr>
<tr>
<td>Non-Clinical Samples.</td>
<td>10</td>
</tr>
<tr>
<td>Clinical Samples.</td>
<td>17</td>
</tr>
<tr>
<td>Child-Abuse Samples.</td>
<td>25</td>
</tr>
<tr>
<td>SUMMARY</td>
<td>32</td>
</tr>
<tr>
<td>The Present Study</td>
<td>34</td>
</tr>
<tr>
<td>METHOD</td>
<td>38</td>
</tr>
<tr>
<td>Participants</td>
<td>38</td>
</tr>
<tr>
<td>Procedures</td>
<td>38</td>
</tr>
<tr>
<td>Measures</td>
<td>39</td>
</tr>
<tr>
<td>RESULTS</td>
<td>42</td>
</tr>
<tr>
<td>DISCUSSION</td>
<td>49</td>
</tr>
<tr>
<td>APPENDIXES</td>
<td>56</td>
</tr>
<tr>
<td>A. Exploratory Correlations</td>
<td>57</td>
</tr>
<tr>
<td>LIST OF REFERENCES</td>
<td>58</td>
</tr>
</tbody>
</table>
LIST OF TABLES

1. Description of Sample.............................................43
2. Mean and Standard Deviation Scores on the Adult-Adolescent Parenting Inventory for Total Sample and Subsamples........................................44
3. Mean and Standard Deviation Scores on the Conners' Parent Rating Scale short version for Total Sample and Subsamples.................................45
4. Correlations Between AAPI and Conners' Scales for Total Sample........................................stderr....46
5. Correlations Between AAPI and Conners' Scales for Male Sample........................................stderr....46
6. Correlations Between AAPI and Conners' Scales for Female Sample........................................stderr....47
7. Correlations Between AAPI and Conners' Scales for ODD Sample........................................stderr....47
8. Correlations Between AAPI and Conners' Scales for ADHD Sample........................................stderr....48
A. Exploratory Correlations between AAPI and Conners' Subscales for Total Sample........................................stderr....57
Attention-deficit/hyperactivity disorder (ADHD) and oppositional defiant disorder (ODD) have been the focus of an increasing number of studies during the past 20 years. These disorders, along with conduct disorder, are commonly known as the disruptive behavior disorders of childhood (Abikoff & Klein, 1992; Paternite, Loney, & Roberts, 1995). The behaviors exhibited by children with these disorders are visible and outwardly directed, and as such are termed externalizing behaviors. They include aggression, overactivity, disobedience, temper tantrums, inattention, and argumentativeness. These externalizing behaviors contrast with the internalizing disorders of childhood (depression, anxiety, eating disorders) because of the immediate, tangible, and continuous impact they have on the family and peers of the child. A large segment of the increased research on externalizing behavior disorders has focused on the patterns of interaction within the families of these children. These studies have explored how the behaviors of these children affect their interactions with their parents, how the parents of children with ADHD and
ODD interact with their children, how the two affect each other, and causal linkages emerging from the interactions.

Despite this increased research, there are still many more questions than answers about these children and their family interactions. The purpose of the present research was to further unravel the complex web of interactions that typifies the families of children diagnosed with ADHD and ODD by focusing on the perceived severity of the externalizing behaviors of these children and the beliefs that their parents hold about childrearing. It was hypothesized that there would be a strong correlation between the perceived severity of the externalizing behaviors a child exhibits and the degree to which that child's parents hold maladaptive beliefs about childrearing. It was hoped that an investigation concerning the relationships between children's behaviors and parents' belief systems would add to the body of knowledge seeking a greater understanding of these children and ways to help them and their families.

The following section examines in more detail the characteristics of children with ADHD and ODD. The issues of comorbidity of symptoms and similarities in family interaction patterns are also discussed.
Attention-deficit/hyperactivity and oppositional defiant disorders, along with conduct disorder, account for the largest group of clinical referrals in children (Abikoff & Klein, 1992). Previous research has placed the estimates for prevalence among school-aged children at 3% to 5% for ADHD (Barkley, 1990; Braswell & Bloomquist, 1991) and 4% to 10% for ODD (Anderson, Williams, McGee, & Silva, 1987).

A child with ADHD is defined predominantly by inordinate difficulties with attending behaviors, impulse control, and overactivity. Their family relationships are also disrupted. Research has shown that when comparing ADHD children and their mothers with nonproblem dyads, the ADHD children are less compliant, and more negative and aggressive (Anderson, Hinshaw, & Simmel, 1994; Johnston, 1996). In addition, mothers of ADHD children are more punitive in discipline, negative in interactions, and more controlling (Anderson, Hinshaw, & Simmel, 1994; Campbell, March, Pierce, Ewing, & Szumowski, 1994; Milich & Loney, 1979). Finally, the parents of these children experience
more stress and maternal psychopathology, and lower parenting self-esteem than parents of nonproblem children (Befara & Barkley, 1985; Mash & Johnston, 1983).

A child with ODD is defined predominantly by a pattern of negativistic, hostile, and defiant behavior. Aggression toward peers and adults, noncompliance, and argumentative behavior are hallmarks of ODD (American Psychiatric Association, 1994). These behaviors, like those of the ADHD child, are associated with severe family disruption. In a recent study of the impact of children with externalizing behaviors on their families, Donenberg and Baker (1993) found that parents of these children reported a greater negative impact on their social life, less positive feelings toward parenting, and higher child-related stress than parents of nonproblem children. The difficulties reported were, in fact, equal to those reported by parents of children with autism, a substantially more disabling condition.

The aggression, defiance, and argumentativeness of children diagnosed with ODD are not defining characteristics of children with ADHD, according to the criteria listed in DSM-IV. However, many recent studies have indicated that some of the disruptions in families of children with ADHD may have more to do with those
externalizing behaviors common to ODD rather than the ADHD symptoms themselves (Anderson, Hinshaw, & Simmel, 1994; Donenberg & Baker, 1993; Johnston, 1996). In 1996, Johnston reported a study comparing characteristics of parents of nonproblem children with parents of ADHD children displaying high and low levels of oppositional defiant behavior. She found that high levels of oppositional defiant behavior were related more frequently with mother reports of more severe child problems, poor parenting self-esteem, lower marital satisfaction, and father psychological distress than lower levels of oppositional defiant behavior.

It is possible that many children with a diagnosis of ADHD also suffer from undiagnosed ODD. Comorbidity within these two diagnoses is already high. Estimates run between 20% and 65%. (Barkley, 1990; Barkley, Fisher, Edelbrock, & Smallish, 1990; Loney & Milich, 1982). One study reported the rate of ADHD in children referred for conduct disorders to be as high as 90% (Abikoff, Klein, Klass, & Ganeles, 1987). In fact, many investigators are questioning the basis for separate diagnoses, given this high comorbidity. In a study examining the external validity of the distinction between ADHD and ODD, Paternite, Loney, & Roberts (1995) compared four groups of boys with behavior
problems: (a) ADHD group, (b) ODD group, (c) comorbid
group, and (d) neither diagnosis group. Problem
identification, cognitive/attentional functioning, family
context, and behavioral symptom differences were the four
areas studied. These authors found a consistent lack of
evidence for either pure ADHD or ODD effects in any of the
study areas. Across 39 dependent variables, they reported
the most significant differences to be between the comorbid
group and the neither diagnosis group. The authors
concluded that there were very few differences between the
pure ADHD and ODD groups. They also found almost no
clearcut effects of the kind predicted by conventional
beliefs about the disorders. This was especially true for
those beliefs associating cognitive/attentional problems
with ADHD and disrupted family environment with ODD. The
authors further suggest that the findings of many previous
studies on ODD may be more correct as applied to children
with comorbid ODD and ADHD.

In another study by Barkley, Anastopoulos, Guevremont,
and Fletcher (1992), 56 of 83 adolescents initially
diagnosed only with ADHD were found, upon further
examination, to meet criteria for a co-existing diagnosis
of ODD. Their study also found that it was this comorbid
group of adolescents and their parents that demonstrated
the greatest family conflict, and anger during conflict. Both comorbid teens and their parents also held more extreme and unreasonable beliefs about parent-teen relations than either the control group or the singly diagnosed teens.

These studies show a co-mingling of symptoms in children with diagnoses of ADHD and ODD, as well as similar family interaction patterns. They also point out the possibility that some children with ADHD may have undiagnosed ODD, and vice versa. For these reasons, the present study focused on children with either diagnosis. The purpose was not to elucidate the differences between the two, but to further examine their similarities in patterns of externalizing behaviors and parent childrearing beliefs.
Many factors have been associated with externalizing behaviors in children, even for those children not diagnosed with a particular disruptive behavior disorder. These include: parent psychopathology, lower social class, family stress, environmental variables, child abuse, and marital dissatisfaction (Anderson, Hinshaw, & Simmel, 1994; Campbell, Breaux, Ewing, & Szumowski, 1986; Johnston, 1996). Parent-child interaction patterns, and parenting characteristics and beliefs, have also been extensively studied and linked to child behavior.

Two specific parenting characteristics that have been strongly associated with these externalizing behaviors were the subject of the present study. They are harsh, punitive discipline techniques, especially the use of corporal punishment; and a lack of empathy (warmth, closeness, or responsiveness) with one's child. To understand the relationship of these parenting characteristics to the externalizing behaviors of children, it is necessary to look at the wide range of manifestations that can occur in both parents and children. Parenting characteristics can
range from the more mild negative affect, harsh tone, and lack of warmth to severe physical abuse and total psychological unavailability. Similarly, the externalizing behaviors in children can range from minor noncompliance, overactivity, and negative affect to physical aggression toward peers and adults, property destruction, defiance, running away, and major crimes against society (e.g., theft, vandalism, rape).

Because these extensive ranges offer a variety of areas for study, the following review of the research focuses on parent-child interactions in three different populations. Each population represents a different point along the range of manifestations of either child or parent characteristics. The three populations are: (a) non-clinical samples, which includes children with externalizing behaviors but no ADHD or ODD diagnosis and their parents; (b) clinical samples, which includes studies of children diagnosed with ADHD or ODD and their parents; and (c) child-abuse samples, which includes the most severe parenting characteristics and the externalizing behaviors of those abused children.

Each section focuses specifically on studies of the association or interaction between parental behaviors of discipline and empathy, or parents beliefs about their
Children can begin exhibiting externalizing behaviors as young as toddlerhood - 2 to 3 years of age. Research on correlates of these behaviors also begins with samples this young. A study of mothers and their non-clinical toddlers (Barling, MacEwen, & Nolte, 1993) found that the children's externalizing behaviors (aggression and destructiveness) were strongly correlated with punishing behavior on the part of the mother. Rejecting behavior by the mother, although more strongly linked to internalizing behavior (social withdrawal, depression), was also significantly correlated with externalizing behaviors in their children.

In a longitudinal study which looked at the correlates and predictors of hyperactivity and aggression in young children, Campbell, et al. (1986) found a complex interaction between mother and child behavior patterns. Mothers and their 3-year-old children were observed during play in a laboratory setting. The children's oppositional,
noncompliant, and aggressive behaviors were counted along with the mothers' negative feedback, reprimands, and impulse control statements. These scores were then studied in relation to the mothers' ratings of the children as hyperactive and aggressive at their current age, at age 4, and at age 6.

Mothers who were more negative and directive in interactions with their children in the play situation consistently rated their children as more aggressive at all three ages, and more hyperactive at ages 3 and 6. However, the children's negative behavior during the play situation was also strongly correlated with current age and future ratings of both hyperactive and aggressive behavior. Thus, negative, controlling maternal behavior and disruptive child behavior were both associated with higher symptom ratings at referral and with continued problems with both hyperactivity and aggression. These behaviors of mother and child were reciprocal and highly intercorrelated.

Campbell et al. concluded that "higher rates of mother-child conflict were a clear predictor of maternal reports of continued problems" (p. 232). They cautioned, however, that while "the directive style of some mothers appeared to be a response to their active and noncompliant child's need for structure and control; other mothers
appeared inappropriately negative and demanding, and their children responded with resistance" (Campbell et al., 1986, p. 232). These conflicting results made further conclusions difficult. In addition, the correlational nature of the study made etiological interpretations inappropriate.

In a longitudinal study, Kandel and Wu (1995) also examined the reciprocal effects of child and parent behavior. They looked at three maternal parenting dimensions: one negative (i.e., punitive discipline), and two positive (i.e., closeness and supervision). They also measured four child behaviors: two negative (i.e., aggression and control problems), and two positive (i.e., positive relations with parent and well-adjustedness). To look at the dynamics among these variables, the authors studied the subjects during childhood, and again six years later as adolescents. The authors found that the children's negative behaviors were significantly positively correlated with maternal punitive discipline, and significantly negatively correlated with maternal closeness and supervision. In addition, children's positive behaviors were negatively related to maternal punitive discipline, and positively correlated with maternal closeness and supervision. All of these relationships
became stronger over time, with the exception of the correlation between punitive discipline and aggression. This correlation was very strong to begin with at the time of the first measurements.

The authors then conducted path analyses to determine directionality of the effects of these behaviors. The analyses revealed that maternal harsh discipline was a significant determinant of child behavior. Maternal harsh discipline was not, however, a significant response to negative child behavior. Inversely, maternal supervision was completely a response to child behavior, however, in an unexpected direction. Supervision increased in response to positive child behavior and decreased after child negative behavior. Maternal closeness was found to be the most reciprocal process for both positive and negative child behaviors. Maternal impact on the child was greater for positive than negative child behaviors. Child's impact on maternal closeness was greater for child negative behaviors than positive behaviors. The authors concluded that their findings strongly support the existence of reciprocal relationships and influences between mothers and children. The type and degree of influences, however, depend on the specific behaviors of parent and child. Negative maternal parenting leads to more negative and fewer positive behaviors on
the part of the child, while positive maternal parenting leads to more positive and fewer negative behaviors. Negative child behaviors influence both positive and negative dimensions of maternal parenting, while positive child behaviors influence only positive dimensions. (p. 118)

In another comprehensive study, Rothbaum and Weisz (1994) conducted a meta-analysis of 47 studies of non-clinical samples. They looked at the relationship between child externalizing behaviors (in this case anger, noncompliance, and tantrums) and 5 major parental control variables of approval, guidance, motivation setting, noncoercion, and synchrony (responsiveness to child-initiated behavior). They found that all five variables were significantly associated with externalizing behaviors. They also found that the presence or absence of these 5 variables was part of a larger pattern of affectionate and responsive or rejecting and coercive parenting, respectively. The rejecting parental behavior was characterized by the absence of warm approval, respecting autonomy, and contingent parental responsiveness.

In another study correlating family variables with externalizing behaviors in preschoolers, Miller, Cowan, Cowan, Hetherington, and Clingempeel (1993) found similar
results. These authors focused on parental depression, marital conflict, parenting behavior (warmth and control), and child externalizing. They found that all of the parent variables contributed to child externalizing. However, there was not a direct path from parental depression or marital conflict to externalizing. These authors used a path-analytic model to show that these variables affected parenting behavior, which in turn influenced the child's behaviors. The authors found that a lack of parental warmth and a decrease in parental control were both significantly related to an increase in externalizing behaviors.

The significance of these qualities of warmth and responsiveness can also be found in studies on attachment. Attachment is an important component of development in children. In a review of attachment-related studies of early aggression, Lyons-Ruth (1996) defined attachment behavior as "those infant behaviors that are activated by stress and that have as a goal the reduction of arousal and reinstatement of a sense of security, usually best achieved in infancy by close physical contact with a familiar caregiver" (pp. 65-66). She also found that the parental behaviors central to the attachment function are parental availability and sensitive responsiveness to infant signal.
This sensitive responsiveness "involves not only prompt response to distress or negative affect but also a more general stance of open responsiveness to infant communications and intentions that serves to prevent the excessive experience of negative affect" (p. 66). These parental behaviors have also been labeled by others as empathy (Bavolek, 1989).

In her review, Lyons-Ruth (1996) found strong evidence for several conclusions. First, maternal hostile-intrusive behaviors that she found predict later aggression are evident as early as the sixth month of the child's life. These maternal behaviors include suppressed anger, lack of tenderness in touching and holding, insensitive intrusiveness, and rejection of attachment behavior. Second, disorganized infant attachment behavior, which she found to be strongly related to later aggressive behavior disorders, is associated with the maternal behavior characteristics of: (a) a frequent lack of responsiveness to appropriate infant cues, and (b) maternal initiatives that often override clear infant communications and goals. Finally, Lyons-Ruth found that these maternal characteristics were not coercive responses to child coercion as is often described in the literature on older
children; these characteristics were present prior to any child behavior.

Clinical Samples

Studies which focus on samples of clinically diagnosed ADHD and ODD children reveal similar findings regarding the interaction between parent and child behavior. Speltz, DeKlyen, Greenberg, and Dryden (1995) studied the relative contribution of attachment variables and behavioral variables in predicting clinic referral for ODD in boys between 3 and 5 years old. They studied the behavioral variables of clinic referred and nonproblem comparison mother-son dyads during play and toy put away situations. Attachment security was studied during separation/reunion situations.

From their behavioral observations, the researchers found that mothers of clinic-referred boys were more likely than comparison mothers to be critical during toy put away situations. They also found that clinic-referred boys were less compliant and more deviant than control boys in the same situation.
When comparing the relationships between the behavior and attachment variables, they found three significant correlations. These were that: (a) child security was inversely correlated with maternal critical comments during the toy put away situation, (b) child security was inversely correlated with child deviant behavior during the toy put away situation, and (c) child separation distress was positively correlated with maternal critical comments during toy put away.

Finally, Speltz, et al., (1995), found that both attachment and behavioral variables contributed individually and jointly to the discrimination between ODD and comparison boys. Attachment security was the best single indicator of clinic status. However, the combination of mother and child behavioral variables as a group were equally strong as a discriminating tool. These findings led the authors to conclude that each set of variables and their underlying theories provides unique information in helping to understand differences between disruptive and well-functioning children and their parents. They further conclude that clinic referral can potentially result from several combinations of factors. Insecure attachment and poor behavior management may each contribute individually to clinic referral.
Johnston (1996) also studied parent characteristics and parent-child interactions in families of 5 to 11 year-old children. She compared three groups of children: (a) ADHD children with high levels of oppositional-defiant behavior, (b) ADHD children with low levels of oppositional-defiant behavior, and (c) a nonproblem comparison group. Using the Home Situations Questionnaire, she asked parents about the number of common home situations in which their child's behavior was problematic, and the severity of the problems. These self-reports by parents indicated a significantly higher number of problem situations evidenced by both ADHD groups than the comparison group, with no differences between the ADHD subgroups. The ADHD group with low rates of oppositional-defiant behavior was rated as having significantly more severe problem behaviors than the nonproblem comparison group. The ADHD group with high rates of oppositional-defiant behavior was rated by their parents as having significantly more severe problems than both of the other groups.

For the 7 days following the in-person interview, daily telephone interviews were then conducted. In these interviews the parent, typically the mother, indicated whether their child had presented a problem in any of 13 different areas, and what their response had been. Parent
responses were grouped into four categories: negative consequences (verbal reprimands, timeout, physical punishment, loss of privileges), nonreactive or positive consequences (ignoring, allowing natural consequences to occur, rewarding incompatible behavior, discussing the problem with the child), prevention (setting clear rules, prompting the child, altering the situation), and other responses.

Parents of ADHD children with both levels of oppositional behavior used significantly less positive strategies, and significantly more negative strategies, than the comparison group parents. There were no significant differences in the use of prevention strategies.

In another study, Anderson, Hinshaw, and Simmel (1994) compared mother-child interactions of a group of 6 to 12-year-old ADHD boys and a group of nonproblem comparison boys. Their study revealed that both maternal negative behaviors (i.e., statements or actions signifying discouragement, nonacceptance, or disapproval) and child negative behaviors (i.e., behavior indicating refusal, anger, or discouragement) in a task-oriented laboratory situation were significantly higher in the ADHD group.
Naturalistic observations of the same boys during a summer camp were then conducted to see whether either of these variables could predict 3 externalizing behaviors: (a) noncompliance/disruption, (b) aggression, or (c) stealing. Hierarchical multiple-regression analyses showed that child negativity significantly predicted all three future externalizing behaviors in both groups of boys. Maternal negativity significantly predicted noncompliance only in ADHD boys, but did so even when the effects of the child's negative behavior during the interaction were statistically controlled. Furthermore, the researchers found that maternal negativity significantly predicted stealing in all boys, even with the same statistical controls for child negativity. Aggression showed no predictability from maternal negativity.

Barkley et al. (1992) studied mother-adolescent interactions, family beliefs and conflicts, and maternal psychopathology in three groups of teens: (a) ADHD, (b) ADHD/ODD, and (c) nonproblem comparison. Mothers and their teens completed questionnaires assessing communication and conflict in their interactions, topics on which they may have disagreements, and distorted cognitions and unreasonable beliefs in parent-teen conflicts. The unreasonable beliefs survey measured a covert dimension of
family conflict by assessing 10 types of unreasonable beliefs, six for parents and four for teens. For the parents these were: ruination (i.e., to what extent acts of the teen will lead to serious social consequences), obedience, perfectionism, approval, self-blame, and malicious intent. The four teen measures were: ruination, autonomy, approval, and unfairness.

Analyses of questionnaire answers showed that mothers of ADHD adolescents (with and without ODD) described their relationships with their teens as having significantly more negative communication patterns, more issues in conflict with each other, and greater intensity of anger during conflict than comparison mothers. Among the teens themselves, however, only those with both ADHD and ODD described significantly more negative patterns, more issues, and greater intensity. Teens with ADHD only fell between the two other groups in scores, not differing significantly from either group. On the measure of unreasonable beliefs, mothers of teens with both ADHD and ODD ascribed significantly more ruination possibility and malicious intent to their teens behavior. The teens' answers also show only the comorbid ADHD/ODD group as significantly more unreasonable in their belief in
ruination, as well as displaying more problems with autonomy.

The teens and their mothers were also observed: (a) discussing a neutral topic and (b) discussing five of the topics the mothers reported as resulting in the most angry conflicts. The observations looked at five types of behaviors for both mothers and teens: (a) put downs/commands, (b) defends/complains, (c) defines/evaluates, (d) problem solves, (e) facilitates, and (f) talks. Analyses of the observed interactions found that during the neutral discussion, mothers of comorbid teens used significantly more put downs/commands and significantly fewer problem solves than the control group. The ADHD group of mothers fell between the two other groups in all behaviors. ADHD/ODD teens also used significantly more put downs/commands (although at a lower overall rate than their mothers), as well as significantly more defends/complains, and significantly fewer facilitates than the control group. Again, the ADHD group of teens did not significantly differ from either of the other groups.

During the observed discussion of high conflict topics, no significant differences were found among any of the groups in any of the five types of interactions. Both mothers and teens in all three groups demonstrated
significant increases in all negative interaction categories, indicating that where conflictual issues are being discussed, both normal and ADHD dyads use similar types of behaviors. It is interesting to note, however, that while all the teens only doubled their use of put downs/commands in this situation, their mothers' experienced a 4- to 10-fold increase in these negative behaviors. Teens showed a 4- to 10-fold increase in their defensive/complaining statements, while their mothers showed a 5-fold increase in the same.

In the same study, parents were asked to complete a self-report scale assessing multiple dimensions of psychological maladjustment. The only significant differences found were between the mothers of comorbid teens and the comparison group. The mothers of comorbid teens reported themselves as significantly more obsessive-compulsive, anxious, and interpersonally hostile than comparison mothers.

The researchers then used a hierarchical stepwise linear regression analysis to determine the extent to which the presence of teen ODD and parental psychological distress each contributed to the degree of conflict in the ADHD groups. In the analyses looking at maternal psychological distress, maternal hostility was the only
measure that contributed significantly to the equation beyond the variance accounted for by the teen's group membership. In looking at the contribution of a diagnosis of ODD to parent-teen conflict beyond that accounted for by maternal psychological distress, they also found the contribution to be significant. They concluded that both a diagnosis of ODD and maternal hostility each contributed uniquely to the degree of parent-teen conflict.

Finally, in their discussion section, the authors cited Patterson's (1982) theory that parental psychological difficulties increase coercive interactions with negative children, in turn increasing the child's aggression. These authors then concluded that their regression analyses results lend "some indirect, correlational support to this view in that maternal interpersonal hostility was found to make additional contributions to the degree of parent-teen conflicts beyond that attributable to aggression, or ODD, in the adolescents" (p. 284).

Child-Abuse Samples

In a unique study, Gracia (1995) looked at the psychosocial characteristics of children and parents in
suspected cases of child abuse, including physical abuse, neglect, or psychological maltreatment. These children were identified by teachers, but not reported because they were felt to be "not serious enough". In this study these families were compared to a nonabused control group across a number of individual, family, and social variables. The results indicated that the children who were suspected of being abused had significantly more behavior problems than control children. These behaviors were both externalizing (i.e., aggression, hyperactivity, disobedience, and destructiveness) and internalizing (i.e., anxiousness, immaturity, submissiveness). The author found that these characteristics are consistent with children who experience rejection, according to Rohner's (1986) parental acceptance-rejection theory.

To test this, the author analyzed levels of perceived parental acceptance and rejection in this study. Children in the suspected abuse group perceived less warmth and affection (expressed verbally or physically), and more rejection (hostility, aggression, indifference or neglect) in their treatment by their parents. More significantly, the parents in all three groups of suspected abuse also described themselves as more rejecting.
In testing the ability of all the measured variables to discriminate between the suspected abuse and nonabuse cases, perceptions of parental behavior (by both parents and children) and children's behavior problems were among the five most important variables for making that distinction. The author concluded by noting that although these cases of suspected abuse were regarded as "not serious enough" to report, the severity of the effects on the children psychologically and behaviorally, and the discriminative differences between the groups of children and parents, indicated the need to re-evaluate this assessment.

Trickett and Kuczynski (1986) studied children's misbehaviors and parental discipline strategies in families with abusive and nonabusive parents. Participants were 40 families with children between 4 and 11 years old, 20 identified as abusing and 20 nonabusing controls. Two of the questions these authors asked were: (a) Do abused and nonabused children differ in the behavior problems they have? and; (b) Do abusive and nonabusive parents differ in their discipline techniques? To study this they had parents complete a "Parent Daily Report" each day for five consecutive days. In this they recorded at least three situations in which they used discipline that day, writing
what the child did that needed discipline, what the parent then did and said, what happened next (how the situation turned out), and how the parent felt about the situation.

The authors then coded the child behaviors and parenting strategies into separate categories. The five child behavior categories were: (a) noncompliance; (b) high arousal behavior, which included noisy, disruptive, arguing with siblings; (c) conventional social, which included leaving clothes out, coming home late, bad manners; (d) moral-aggressive, which was unprovoked aggression, destructiveness; and (e) moral-psychological, which was stealing, dishonesty, selfishness. The four parenting strategies were: (a) requests/commands; (b) forced appropriate behavior; (c) reasoning; and (d) punishment, which was further broken down into isolation, tangible punishment, verbal punishment, and physical punishment.

In analyzing the behavior of the children, Trickett and Kuczynski confirmed the findings of other studies. The abused children were more aggressive and less compliant than control children. The authors felt it was noteworthy that the differences in behavior in the two groups of children were confined to categories that specifically look at dimensions of aggression and anger. Abused children
were also found to commit more initial transgressions from the moral-aggressive category than controls.

Analysis of parental response strategies indicated that abusive parents used a greater total number of punishment techniques than control parents. They were also more likely to use severe physical punishment and less likely to use requests and reasoning. Another significant finding was that control parents were more discriminating in choosing a strategy based on the type of transgression. They were more likely to use reasoning for conventional social transgressions, punishment and reasoning for moral transgressions, and punishment for high-arousal behaviors. The abusive group of parents showed no such differentiation. Punishment was the predominant strategy for all four types of child behaviors.

Letourneau (1981) studied the relative importance of parental stress and parental empathy in the tendency to abuse a child. Her main hypothesis was that empathy and aggression in mothers are negatively correlated, and that therefore empathy may mediate aggression. She also hypothesized that a high stress level would account for some of the aggression displayed by the mothers. Thirty mothers who were identified as physically abusive and thirty mothers who were not abusive were administered two
self-report questionnaires designed to measure empathy and one measuring stress level. The author found that there was a significant difference in the level of empathy reported by mothers on both empathy questionnaires. Also, the correlation between the two measures was low, suggesting that they measured different components of the concept of empathy. In analyzing the responses to the stress questionnaire, the author found no differences in the level of stress experienced in the past 12 months by the two groups.

The mothers then participated in a role-play in which a child's recorded voice was used to present a series of situations in which a child seeks comfort or help or becomes angry. Each subject's responses were coded on four scales measuring maternal responsiveness: (a) help-withholding, (b) comfort-withholding, (c) sensitivity to the child's needs, and (d) aggression. Significant differences in maternal responsiveness were found. Abusive mothers had significantly higher scores on help-withholding and comfort-withholding, indicating lower maternal responsiveness. The abusive mothers were also significantly more aggressive in their responses to the child's negative behavior. These findings supported the
profile of abusive parents as punitive, rigid, and unresponsive to their children's needs.

To test the hypothesis that empathy is negatively correlated with aggression, Letourneau correlated all the subjects' empathy scores with their aggression scores. There were significant negative correlations between empathy scores on both questionnaires and aggression scores. These results lend support to the theory that empathy may mediate aggression.
SUMMARY

The review of previous literature leads to several conclusions relevant to the present study. These conclusions are summarized in this section.

It is apparent from the literature discussed that children diagnosed with ADHD or ODD appear to exhibit many of the same behaviors. The dichotomy in diagnoses may actually be irrelevant because of high comorbidity. Also, in the studies reviewed that looked at the differences between children with these diagnoses and a nondiagnosed population, the greatest differences found were between the comorbid and normal groups.

Another important finding of the research reviewed was the lack of significant differences in the parent-child interactions between parents of ADHD and ODD children. In the studies surveyed, the parents were more uniformly negative, punitive, and hostile than control group parents. Similarly, the children exhibited more externalizing behaviors across all studies than control children. Based on these findings, the focus of the present study was on children with either diagnosis.
In looking at parent-child interactions across all three samples (i.e., nonclinical, clinical, and child abuse), the same pattern is repeated. Without fail, negative parent behaviors are correlated with negative child behaviors, and positive parent behaviors are correlated with positive child behaviors. In addition, across all three samples, lack of parent responsiveness and warmth (empathy) to a child is correlated with that child’s negative behaviors.

Another pattern that emerges across the three groups is the similarity in types of negative behavior displayed by both parents and children in each group. Parents in all three samples exhibited the same type of behaviors (i.e., hostility, lack of empathy, punitive discipline). Similarly, all of the study children in the three groups displayed aggression, noncompliance, and other externalizing behaviors. It is significant that the only differences in behavior were in the level or intensity of negative behaviors exhibited by either parent or child. Children in the clinical group exhibited behaviors at a level or intensity that justified a diagnosis of ADHD or ODD, although parental behaviors in the nonclinical and clinical samples were not shown to differ. The parents in the abusive group exhibited the same type of behaviors as
the nonclinical and clinical groups, but at a more severe level. These similarities in behavior types and differences in intensity levels across three very different population samples lead to questions about directionality of influence in the negative behavior patterns.

The order of appearance of child externalizing behaviors and parents' negative behaviors and attitudes remains the primary question unanswered by all of the studies reviewed. Which comes first, child behavior or parent behavior? Which has more influence on the other? Most of the studies agree that the influence becomes bidirectional once the behaviors have started; but what or who starts the pattern of negative behaviors? The studies reviewed give no clear answer. Although the present study was also not sophisticated enough to answer these questions, it was hoped that the information it provides will help point the direction for future studies that may give more definitive answers.

The Present Study

The present study examined the general childrearing beliefs of parents who have ADHD or ODD children. These
childrearing beliefs apply to all children in the family, not just the child diagnosed with ADHD or ODD. The studies reviewed that focused on parents' attitudes looked only at their attitudes toward their children with behavior problems at the time of the study. Those studies that examined parents' beliefs studied only the beliefs parents had about the results of or genesis of a problem child's behaviors. The remaining studies reviewed looked at parent behaviors in specific interactions with their problem children. In focusing on general childrearing beliefs about all children, the present study looked at parenting from a slightly broader perspective.

Parenting beliefs were examined using the Adult-Adolescent Parenting Inventory (AAPI) developed by Bavolek in 1984. The AAPI is a measure of maladaptive parenting beliefs developed to identify the potential for child abuse in an adult. It focuses on four parenting and childrearing constructs most commonly associated with abusive parents: (a) inappropriate parental expectations of the child, (b) lack of empathy towards children's needs, (c) parental value of physical punishment, and (d) parent-child role reversal. It was used in the present study because two of these four constructs (e.g., physical punishment and lack of empathy) have been strongly identified in the above
literature review as significantly correlated with children's negative behavior in all three samples examined. The AAPI also gives levels of strength of belief for each construct. The higher the score received, the stronger the inappropriate beliefs of the parent. The AAPI will be explained in greater detail in the Method section below.

The Conners' Parent Rating Scale short version (CPRS-48) was used to evaluate the type and level of behaviors exhibited by the children in the study. The Conners rating scales, of which there are a number, were developed to aid in the identification of ADHD children. These scales are completed by a parent or teacher. Because they are self-report surveys, they rate the behavior of the child as perceived by the adult completing the survey. Six subscores identifying specific problems can be obtained from various combinations of symptoms. They are: (a) conduct problem, (b) learning problem, (c) psychosomatic, (d) impulsivity, (e) anxiety, and (f) hyperactivity index. Three of these scores (i.e., conduct problem, impulsivity, and hyperactivity index) identify behaviors exhibited by children in the studies reviewed. As with the AAPI, the Conners' gives levels of severity for each of the subsections, as well as a total score of severity of behavior problems.
Against this background, the following hypotheses were advanced:

• There will be a significant positive correlation between overall scores on the AAPI and the Conners.
• There will be a significant positive correlation between the AAPI construct of parental value of physical punishment and the Conners subscale of conduct problem.
• There will be a significant positive correlation between the AAPI construct of parental value of physical punishment and the Conners subscale of impulsive-hyperactive.
• There will be a significant positive correlation between the AAPI construct of parental value of physical punishment and the Conners subscale of hyperactivity index.
• There will be a significant positive correlation between the AAPI construct of lack of empathy toward children's needs and the Conners subscale of conduct problem.
• There will be a significant positive correlation between the AAPI construct of lack of empathy toward children's needs and the Conners subscale of impulsive-hyperactive.
• There will be a significant positive correlation between the AAPI construct of lack of empathy toward children's needs and the Conners subscale of hyperactivity index.
METHOD

Participants

Archival data were used from the current and past caseload of a community mental health center. Three hundred thirty-eight cases were chosen based on having a child between the ages of 1 and 17 years (mean age = 8.6 years) with a current mental health diagnosis of Attention-Deficit/Hyperactivity Disorder or Oppositional Defiant Disorder from the Diagnostic and statistical manual of mental disorders (4th edition) (American Psychiatric Association, 1994). Written informed consent was not necessary because all of the data were anonymous and archival.

Procedures

Intervention Services Incorporated (IS), a home and school-based community mental health center specializing in
serving children with behavior problems from low income families, provided the archival data for the present study. Demographic data and questionnaire scores are routinely entered into a computer data base for each case opened at IS. Computer sorting identified the cases from the current caseload that met the criteria to be included in the present study. To protect anonymity, these cases were given an identifying number and had all other identifying information withheld from the printout given to the researcher.

Measures

Parenting attitudes were measured by the Adult-Adolescent Parenting Inventory (AAPI) (Bavolek, 1984). This 32-item scale measures attitudes and beliefs about parenting and childrearing using a five point Likert-type scale. The inventory asks respondents to read statements about parenting and rate whether they agree with the statement on a scale ranging from (1) strongly disagree to (5) strongly agree. Four individual parenting and childrearing constructs are measured. They are (a) parent-child role reversal, (b) lack of empathy toward children's
needs, (c) parental value of physical punishment, (d) inappropriate expectations of the child. This study focused on the lack of empathy and physical punishment constructs. Construct validity measurements conducted by Bavolek (1984) show that test-retest reliability is high at .76. Internal consistency is also good with internal reliability coefficients ranging from .70 for construct (A) to .86 for construct (D).

The perceived level and severity of the children's behaviors were measured by the short version of the Conners' Parent Rating Scale (CPRS-48), which has 48 items. Each item asks if the child is currently exhibiting a particular behavior. The behaviors are rated by a parent on a four point scale as either (0) not at all present, (1) just a little present, (2) pretty much present, or (3) very much present. The scale consists of six subscales - conduct problem, learning problem, psychosomatic, impulsivity, anxiety, and hyperactivity index. This study focused on the conduct problem, impulsivity, and hyperactivity index subscales. Normative data collected on the scale by Goyette, Conners, and Ulrich (1978) confirm that this version of the Parent Rating Scale is as reliable in rating behaviors on the six subscales as the original long version. They reported that interrater reliability was
acceptable with a total score product-moment correlation between mother and father ratings of .59, with a mean item correlation of .41.
RESULTS

The data were analyzed using Pearson product-moment correlation coefficients. Correlational analyses were undertaken for the total sample and separately for each of four subsamples: 1) Males, 2) Females, 3) those with ODD, and, 4) those with ADHD. Exploratory analyses were conducted on all combinations of the other AAPI and Conners' subscales for any significant correlations in each of these five groups. Due to the relatively large number of correlations examined, an alpha level of .01 was used to determine significance levels for all analyses.

Table 1 provides a description of the samples by gender.

Table 2 gives the mean and standard deviation scores on the AAPI for the total sample and each subsample. In scoring the AAPI, a high score on empathy indicates a greater lack of empathy than a low score. A high score on value of physical punishment indicates that physical punishment is more highly valued than a low score. In
looking at the total score, a score of ninety indicates a potential risk of abuse.

In Table 3, the mean and standard deviation scores are presented for the Conners'. In scoring the Conners', the higher the total score or score for each subscale, the greater the perceived problem in that area.

Tables 4 - 8 show the results for each of the hypothesized correlations for each sample. Results of the exploratory correlations can be found in Appendix A.

Between-group differences on all measures for males and females and ADHD and ODD diagnostic groups were analyzed with no significant results.

Table 1.

<table>
<thead>
<tr>
<th>Description of Total Sample and Subsamples by Gender</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>N</td>
<td>338</td>
</tr>
<tr>
<td>Males</td>
<td>237</td>
</tr>
<tr>
<td>Females</td>
<td>101</td>
</tr>
<tr>
<td>Male/Female Ratio</td>
<td>2.5:1</td>
</tr>
<tr>
<td>Sample</td>
<td>n</td>
</tr>
<tr>
<td>----------</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>338</td>
</tr>
<tr>
<td>M</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>237</td>
</tr>
<tr>
<td>M</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>101</td>
</tr>
<tr>
<td>M</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>ODD</td>
<td>216</td>
</tr>
<tr>
<td>M</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>ADHD</td>
<td>122</td>
</tr>
<tr>
<td>M</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td></td>
</tr>
</tbody>
</table>
Table 3.

Mean and Standard Deviation Scores on the Conners' Parent Rating Scale short version for Total Sample and Subsamples

<table>
<thead>
<tr>
<th>Sample</th>
<th>n</th>
<th>Total</th>
<th>Conduct</th>
<th>Hyperactivity</th>
<th>Impulsivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>338</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td></td>
<td>73.96</td>
<td>14.28</td>
<td>20.85</td>
<td>8.99</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>24.56</td>
<td>6.02</td>
<td>6.06</td>
<td>2.89</td>
</tr>
<tr>
<td>Male</td>
<td>237</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td></td>
<td>72.35</td>
<td>14.10</td>
<td>20.78</td>
<td>9.08</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>24.55</td>
<td>5.99</td>
<td>6.09</td>
<td>2.88</td>
</tr>
<tr>
<td>Female</td>
<td>101</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td></td>
<td>84.68</td>
<td>14.69</td>
<td>21.01</td>
<td>8.77</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>73.31</td>
<td>6.09</td>
<td>6.03</td>
<td>2.92</td>
</tr>
<tr>
<td>ODD</td>
<td>216</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td></td>
<td>72.63</td>
<td>14.27</td>
<td>20.13</td>
<td>8.60</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>24.64</td>
<td>6.12</td>
<td>6.12</td>
<td>2.99</td>
</tr>
<tr>
<td>ADHD</td>
<td>122</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td></td>
<td>76.34</td>
<td>14.29</td>
<td>22.13</td>
<td>9.68</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>24.33</td>
<td>5.86</td>
<td>5.76</td>
<td>2.58</td>
</tr>
</tbody>
</table>
Table 4.

**Correlations Between AAPI and Conners' Scales for Total Sample**

<table>
<thead>
<tr>
<th>Conners'</th>
<th>Total</th>
<th>Empathy</th>
<th>Physical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>.17*</td>
<td></td>
<td>.17*</td>
</tr>
<tr>
<td>Conduct</td>
<td>.21*</td>
<td>.26*</td>
<td></td>
</tr>
<tr>
<td>Hyperactivity</td>
<td>.13*</td>
<td>.15*</td>
<td></td>
</tr>
<tr>
<td>Impulsivity</td>
<td>.08</td>
<td>.10</td>
<td></td>
</tr>
</tbody>
</table>

*p < .01

Table 5.

**Correlations Between AAPI and Conners' Scales for Male Sample**

<table>
<thead>
<tr>
<th>Conners'</th>
<th>Total</th>
<th>Empathy</th>
<th>Physical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>.23*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct</td>
<td>.26*</td>
<td>.27*</td>
<td></td>
</tr>
<tr>
<td>Hyperactivity</td>
<td>.17*</td>
<td>.16</td>
<td></td>
</tr>
<tr>
<td>Impulsivity</td>
<td>.07</td>
<td>.12</td>
<td></td>
</tr>
</tbody>
</table>

*p < .01
Table 6.

<table>
<thead>
<tr>
<th>Conners'</th>
<th>Total</th>
<th>Empathy</th>
<th>Physical Punishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct</td>
<td>.11</td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td>Hyperactivity</td>
<td>.05</td>
<td>.12</td>
<td></td>
</tr>
<tr>
<td>Impulsivity</td>
<td>.10</td>
<td>.03</td>
<td></td>
</tr>
</tbody>
</table>

*p < .01

Table 7.

<table>
<thead>
<tr>
<th>Conners'</th>
<th>Total</th>
<th>Empathy</th>
<th>Physical Punishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>.23*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct</td>
<td>.25*</td>
<td>.29*</td>
<td></td>
</tr>
<tr>
<td>Hyperactivity</td>
<td>.15</td>
<td>.21*</td>
<td></td>
</tr>
<tr>
<td>Impulsivity</td>
<td>.13</td>
<td>.16*</td>
<td></td>
</tr>
</tbody>
</table>

*p < .01
Table 8.

Correlations Between AAPI and Conners Scales for ADHD Sample

<table>
<thead>
<tr>
<th>Conners'</th>
<th>AAPI</th>
<th>Physical Punishment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Empathy</td>
</tr>
<tr>
<td>Total</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td>Conduct</td>
<td></td>
<td>.14</td>
</tr>
<tr>
<td>Hyperactivity</td>
<td></td>
<td>.12</td>
</tr>
<tr>
<td>Impulsivity</td>
<td></td>
<td>.01</td>
</tr>
</tbody>
</table>

*p < .01
DISCUSSION

Overall, the results of this study provide moderate support for some of the hypothesized associations between child externalizing behaviors and inappropriate childrearing beliefs of parents. The degree of association between child behaviors and parental beliefs differed in those with a diagnosis of ADHD and those with a diagnosis of ODD. This differing pattern of correlational findings is in contrast to the results reported in the literature review that emphasized the similarity in externalizing behaviors and family interaction patterns of children with either ADHD or ODD.

The mean scores on the AAPI for total score, empathy, and physical punishment were all relatively high. These high scores indicate that the parents in this sample display low empathy, place a high value on physical punishment, and are close to being at risk for child abuse. There is, however, little variability in means between subsamples, which may reduce the magnitude of the correlations found.
The mean scores on the Conners' are also high in comparison to the general population on the total score, conduct score, and hyperactivity score. This indicates a clinical level of perceived problems on these scales. The impulsivity means were not as high, indicating fewer perceived problems in this area. As with the AAPI, however, there is little variability in the means between subsamples.

Each hypothesis was tested for significance using the total sample and four subsamples derived from the total sample. These four subsamples were male only, female only, ODD diagnosis only, and ADHD diagnosis only.

Significant correlations were found in the total sample, male sample, and ODD sample. The strongest correlation in each of these three samples was between conduct problems and physical punishment ($r's = .26$ to $.29$). There were also significant findings in all three of these samples for the association between the Conners' total score and the AAPI total score ($r's = .17$ to $.23$). The correlation between conduct problems and empathy was also significant in these three groups ($r's = .21$ to $.26$). These results provide support for the findings of earlier studies linking externalizing behaviors of children and inappropriate childrearing beliefs of parents.
The most striking finding of this research, however, was the difference in results between the subsamples. It was hypothesized by the researcher that there would be no differences in results between diagnoses, possibly due to undiagnosed co-existing ADHD or ODD that decrease the differences in behavior and family interaction patterns between the two diagnoses. This was shown to be incorrect. The group diagnosed only with ODD had the greatest number of significant correlations between hypothesized constructs of any of the subsamples ($r$'s = .16 to .29). In contrast, there were no significant correlations found for the subsample diagnosed only with ADHD.

These results point out differences between the ADHD and ODD groups rather than similarities. There is not enough information provided by these data to determine why these differences are present. However, some theories may be put forward. Because the Conners' data are based on the parent's perception of the child's behavior problems, it is possible that parents of children with ADHD and ODD have a different perception of their child's behavior problems. Recent research has stressed the possibility of a genetic or biological cause for ADHD. Could it be that parents of ADHD children are more willing to perceive less of a problem because there might be a biological cause? There
has been no reported biological cause for ODD, possibly leading to the perception by parents that those with this diagnosis are just "problem children".

Another possible explanation could be the order of appearance of problems in children and parents. If ADHD has a biological or genetic origin, the behaviors related to this diagnosis would precede any inappropriate parental beliefs. Because ODD has no biological origin, in these families inappropriate parenting beliefs may precede child externalizing behaviors. This difference in order of appearance may affect whether parental beliefs and child behaviors are correlated.

Another interesting difference was found between the male and female groups. The analyses on the male sample provided significant results ($r'$s = .17 to .27), while there were no significant results for the female sample. From these results it appears that for the participants in this study, males and those participants with a diagnosis of ODD showed a much greater correlation between perceived externalizing behaviors and inappropriate childrearing beliefs of parents than females and those with a diagnosis of ADHD.

There is no literature, other than a limited number of school-based studies, that separates males and females with
a diagnosis of ADHD in the areas of diagnostic criteria, etiology, treatment, or family interaction patterns. Why there was such a striking gender-related difference in the results of this study is open for speculation and an excellent topic for future research.

There were several limitations to the present study. The most significant of these limitations was that there were no control groups for comparison. Appropriate control groups (or comparison groups) could include a group of children with no diagnosis, a group of abused children with externalizing behaviors, and a group of children with different mental health diagnoses (e.g. those diagnoses associated with internalizing behaviors). Also, a group of children with a comorbid ODD and ADHD diagnosis was not identified separately.

In addition, the data used for the research were archival, and multiple informants/therapists gathered information. This could have resulted in a lack of consistency and scientific control in how data were collected. The data were also obtained from only one community agency serving low income families, which is not a representative sample of the general population. Finally, the data used were based on perceived externalizing behaviors of children, with the Conners'
completed by the same parent completing the AAPI on themselves. These data are much more subjective and open to error than objectively controlled and collected observational data.

Future directions for study might include comparing both ODD and ADHD groups to a control group of children with no diagnosis and a group of children comorbid for ADHD and ODD, as well as other comparison groups. Also, further exploration of the significant findings could focus on the ODD only and male only populations, using a larger or more representative sample. As mentioned above, another interesting topic would be to explore the different patterns in correlational findings between males and females.

In summary, this study found some support for the hypotheses that there would be correlations between the perceived externalizing behaviors of children with ADHD and ODD and the inappropriate childrearing beliefs of their parents. The significant results that emerged were restricted mainly to those with a diagnosis of ODD and to male participants. The supposition of the researcher that children with ADHD and ODD are actually more similar than different was not supported by the results. In fact, the patterns of correlations that emerged from these two groups
were quite different, providing the most interesting findings of this research. Another finding of interest was the different pattern of correlational findings between males and females.

Both ADHD and ODD are disorders that severely disrupt the lives of those who suffer from them, as well as everyone around them. For many children, these disorders result in limitations which cannot be overcome. It is hoped that future research can solidly identify variables that are associated with and possibly contribute to these conditions, and as a result therapists may find ways to help these children and their families.
Appendix A
Exploratory Correlations
Appendix A.

Exploratory Correlations Between AAPI and Conners' Subscales for Total Sample

<table>
<thead>
<tr>
<th>Conners'</th>
<th>AAPI</th>
<th>Physical</th>
<th>Inappropriate</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct</td>
<td></td>
<td>.10</td>
<td>.13*</td>
<td></td>
</tr>
<tr>
<td>Hyperactivity</td>
<td></td>
<td>.03</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>Impulsivity</td>
<td></td>
<td>.05</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>.05</td>
<td>.03</td>
<td>.07</td>
<td>.01</td>
</tr>
<tr>
<td>Learning</td>
<td>.07</td>
<td>.10</td>
<td>.07</td>
<td>.03</td>
</tr>
<tr>
<td>Psychosocial</td>
<td>.14*</td>
<td>.04</td>
<td>.06</td>
<td>.06</td>
</tr>
</tbody>
</table>

*p < .01
LIST OF REFERENCES


Loney, J. & Milich, R. (1982). Hyperactivity, inattention, and aggression in clinical practice. In M. Wolraich & D. Routh (Eds.), *Advances in developmental and*
behavioral pediatrics (Vol. 3, pp. 113-147).
Greenwich, CT: JAI Press.


