FURTHER VALIDATION OF A PARENTAL TOLERANCE MEASURE

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# FURTHER VALIDATION OF A PARENTAL TOLERANCE MEASURE

Miranda Brooke Loper

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FURTHER VALIDATION OF A PARENTAL TOLERANCE MEASURE

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Miranda Brooke Loper is the daughter of David A. Loper and Tambria L. Loper, of Keystone Heights, Florida. Born on March 22, 1980 in Gainesville, Florida, Miranda completed her B.S. in psychology and B.A. in French at the University of Florida, graduating with Highest and High Honors, respectively. She is currently pursuing her doctoral degree in Child Clinical Psychology at Auburn University.

THESIS ABSTRACT

FURTHER VALIDATION OF A PARENTAL TOLERANCE MEASURE

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Tolerance for child misbehavior is defined as the amount of annoyance experienced when a child misbehaves. This construct has received relatively little attention in the field of child psychology and most of this research has focused on teacher tolerance for student's misbehavior. Very little research has evaluated parental tolerance of children's misbehavior. It has been suggested that abusive parents perceive their children more negatively when compared to nonabusive parents and that they have lower tolerance levels of children's negative behaviors. One problem with the few studies examining tolerance for misbehavior is that there are no well-validated measures to study this construct. One recent investigation addressed this weakness by constructing a measure of tolerance, called the Child Rearing Inventory (CRI) and found that the CRI has good internal consistency, adequate rest-retest reliability, and initial evidence of concurrent and construct validity. However, some limitations of this study were that only

one method of measurement was used and the concurrent validity was established with only two measures, one of which was developed as part of the study. Participants in the current study include 86 parent-child dyads with children ages 4 to 12 who have a history of physical abuse and 44 comparison parent-child dyads with children ages 8 to 12. In addition, two groups of 18 parent-child dyads were matched on various demographics from the abusive and comparison dyads. Measures used in the present study included screening measures, a demographic questionnaire, the CRI, the Behavioral Assessment System for Children (BASC), and the Dyadic Parent-Child Interaction Coding System-II (DPICS-II). The hypothesis that the CRI would show exploratory construct validity was partially supported, with significant correlations found between the CRI and the BASC in the total sample and in the abusive sample, and between the CRI and the DPICS-II Parent Inappropriate Behavior composite in the abusive sample. The hypothesis that the CRI scores would be predicted by various measures was not supported. The CRI scores were not significantly lower at post treatment for the abusive dyads, as hypothesized, although statistical levels approached significance. Finally, the hypothesis that the CRI would predict abuse status was not supported. Implications of the present study as well as directions for future research are presented and discussed.

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# I. INTRODUCTION

The term "tolerance" has been used frequently in the clinical child literature to refer to parent and teacher perceptions of various child domains. For instance, a treatment outcome study investigated parent tolerance toward children with learning disabilities (Yezman, 1984) and one researcher commented that parent tolerance for child temperament may have an impact on children's special education outcomes (Martin, 1992). Other research examining adults' tolerance for harsh discipline procedures found that when study participants were raised by abusive parents, they tended to express greater tolerance for harsh punishments and were more likely as adults to be in abusive relationships (Rynerson & Fishel, 1993). Studies of tolerance have also investigated the impact of parental tolerance on children's ego strength and ego resilience (Roberts, 1999; Slater, 1962), and the effect of parental tolerance on adolescent deviant behavior (Claes & Lacourse, 2001). While each of these studies addresses tolerance, the construct of tolerance was defined and measured differently by each research team. In an effort to provide additional psychometric data for a recently established measure of tolerance, parent tolerance for child misbehavior will be the specific form of tolerance examined in the present study.

## *Teacher Tolerance for Misbehavior*

Tolerance of child misbehavior has received relatively little attention in the field of child psychology and most of this research has focused on teacher tolerance for

student's misbehavior. Although somewhat dated, this research on teacher tolerance for child problem behavior provides a frame of reference for studying the construct of tolerance.

Teacher tolerance has been defined as the degree to which a child's classroom behavior irritates a teacher (Algozzine & Curran, 1979; Curran & Algozzine, 1980). In an effort to examine this construct, Algozzine (1979) developed the Disturbing Behavior Checklist-I (DBC-I) by examining the disturbingness of 55 behaviors from the Behavior Problems Checklist (BPC; Quay & Peterson, 1967). The DBC-I contains four factor-analytically derived groups of behaviors: General Social Immaturity (i.e., "feelings of immaturity"), Socialized Delinquency (i.e., "has bad companions"), Motorically Restless (i.e., "restlessness, inability to sit still"), and Social Defiance (i.e., "impertinence, sauciness") (Algozzine, 1979). The number of items for each factor ranges from 2 to 22. In addition, the internal consistency for the total scale and all four factors ranged from .62 to .93, suggesting the DBC-I has adequate reliability (Algozzine, 1978). However, items on each cluster do not always appear to measure the same area of functioning and some items are difficult for teachers to answer (i.e., "stays out late at night") (Algozzine, 1979). Despite these shortcomings, the DBC-I has been frequently used in research on teacher tolerance.

Algozzine and Curran (1979) examined the relationship between teacher tolerance for specific types of behaviors (social defiance and social immaturity) on the DBC-I and teacher ratings of students' potential for success based on case study vignettes of a child exhibiting either socially deviant behaviors or socially immature behaviors. Participants were forty-four first to sixth grade regular education teachers. Based on significantly

different scores on the DBC-I, four comparison groups were formed of teachers with high tolerance for social defiance behavior, low tolerance for social defiance behavior, high tolerance for socially immature behavior, and low tolerance for socially immature behavior. Teachers with high tolerance reported the behaviors to be less distressing than teachers with low tolerance. Results indicate that teachers' levels of tolerance for the behavior interacted with their perception of the child, meaning that teachers with higher tolerance levels predicted better success for the hypothetical student compared to teachers with low levels of tolerance. It was also found that teachers did not find social defiance behaviors to be more disturbing than socially immature behaviors. Overall, these results suggest that tolerance levels for behaviors impact how teachers will view and interact with students.

A study examining the four factors of the DBC-I suggested that regular education teachers are less tolerant of disruptive behaviors in the area of Social Defiance when compared to special education teachers (Algozzine, 1980). Landon and Mesinger (1989) obtained similar results when using a modified 36-item version of the DBC-I to compare tolerance levels of regular and special education teachers. They found that special education teachers reported higher levels of tolerance for students' difficult behaviors in the classroom.

To address the limitations of small sample size, poor range of behaviors examined (some behaviors were not observable or related to classroom situations), and limited generalizability in Algozzine's (1980) study, Safran, Safran, and Barcikowski (1985) examined more specific potential differences between regular elementary and special education teachers' levels of tolerance. In this study, a 39-question Teacher Tolerance

Scale (TTS) was adapted from the Devereux Elementary School Behavior Rating Scale II (DESB II; Swift, 1982) to assess teachers' tolerance of problem behaviors exhibited by students at school. The TTS was divided into 11 clusters based on item content. A definition of tolerance was included on the questionnaire ("the degree to which behavior disturbs or bothers the teacher") and the question, "How tolerable is it if a student frequently…" was followed by behavioral descriptions to be answered on a 5-point Likert scale (1=extremely tolerable to 5=extremely intolerable) (Safran et al., 1985). These researchers found a one week test-retest reliability of .75 and an internal consistency of .92 for the TTS. No differences in tolerance levels were found between the regular education and special education teachers on the TTS. However, both types of teachers reported low levels of tolerance for behaviors that potentially disturb other students, such as negatively aggressive behaviors and difficulty cooperating with peers.

Cunningham and Sugawara (1988) examined preservice teachers' tolerance of children's problem behavior. In this study, students training to become teachers completed a 35-item version of the TTS, after reading a vignette containing behavioral descriptions of social immaturity and social defiance. It was found that preservice teachers were more tolerant of children's socially immature behaviors compared to children's socially deviant behaviors. In addition, preservice teachers were more likely to advocate the use of restrictive discipline strategies as opposed to helping strategies when confronted with children's socially defiant behaviors.

One study by Preator (1990) used the SBS Inventory of Teacher Social Behavior Standards and Expectations as a measure of teacher tolerance (SBS; Walker, 1983). On this scale, teachers rate positive student behaviors as "unimportant," "desirable," or

"critical" for success in their classroom and maladaptive student behaviors as "acceptable," "tolerated," or "unacceptable" according to their expectations of student classroom behavior. After these sections of the questionnaire are completed, teachers were asked to reconsider their "critical" and "unacceptable" responses and indicate in which situations the teacher would expect the child to master the skill. Results from 371 regular and special education teachers from Preschool to 12th grade showed that the teachers were less tolerant of student behaviors that threaten teacher authority or put other students at risk. The results of this study appear commensurate with other studies about teacher tolerance that have found that teachers are most bothered by defiant and aggressive behaviors (Algozzine & Curran, 1979; Cunningham & Sugawara, 1988; Dolstra, 2003; Safran et al., 1985). However, reliability and validity estimates were not described or reported on the SBS, so the findings of this study are limited.

In one recent study, Dolstra (2003) developed a measure called the Teacher Tolerance Scale (TTS) in order to examine the construct of teacher tolerance for specific types of students' problem behaviors and demographic variables potentially related to teacher tolerance levels. This questionnaire was developed from items on the Inventory of Teacher Social Behavior Standards and Expectations (ITSBSE; Walker & Rankin, 1983), the problem behavior portion of the Social Skills Rating System (SSRS; Gresham & Elliott, 1990), and the Critical Events Index (CEI; Todis, Severson, & Walker, 1990). Demographic variables evaluated included gender, ethnicity, grade-level taught, teaching assignment (e.g., regular or special education), and number of years teaching. On the final version of the TTS, 119 teachers (96% taught either 2nd or 3rd grade or a combined 2nd/3rd grade class) rated thirty behaviors as unacceptable, acceptable, or tolerated. Total

tolerance levels are obtained by summing the responses. The scale assesses two domains of problem behavior. The first domain pertains to behaviors that are disruptive in the classroom and challenge the teacher's authority and the second domain describes behaviors that do not challenge the teacher's authority. The TTS was found to have good internal consistency and two factors were derived. Factor one was termed "Disruptive and Defiant" and examples of the item content on this factor includes physical aggression, damage to others' property, using profanity, disobedience of teacher rules, talking back to adults, ignoring teacher reprimands, and stealing. Factor two was described as "Annoying and Irritating" and included behaviors such as interrupting others, impulsiveness, fidgeting, pouting, whining, talking out of turn, and making random remarks. Results of this study showed that teachers were less tolerant of the disruptive, noncompliant behaviors and more tolerant of irritating and annoying behaviors. In addition, teacher characteristics did not appear to have an impact on teachers' levels of tolerance for student problem behaviors.

Teacher tolerance for students' misbehavior can determine if a student is viewed as deviant (Martens, 1993) and tolerance is linked to rates of disciplinary referrals (Wright & Dusek, 1998). Thus, teachers with low tolerance for misbehavior may label children who would not be considered deviant from a teacher with average or high levels of tolerance for problem behavior. The implications of these studies are that teacher tolerance impacts teachers' expectations and possible interactions with students (Algozzine & Curran, 1979; Curran & Algozzine, 1980). However, studies examining teacher tolerance for misbehavior are plagued by methodological limitations. For instance, most of these studies rely on teacher ratings of a hypothetical student's behavior

on questionnaires that contain limited reliability and validity. These questionnaires are modified in every study so it is difficult to know if they are measuring the same construct. Also, the lack of control groups makes it difficult to evaluate the studied group scores. It is possible that these flaws have contributed to the inconsistent findings across studies. However, what appears to be consistent is that teachers are less tolerant of externalizing behavior problems compared to internalizing behavior problems and this bias may lead to negative interactions between teachers and their students who exhibit disruptive behaviors.

Based on these findings, it appears that teacher tolerance has the potential to impact student outcomes. Likewise, parent tolerance is an understudied construct that may parallel the findings of teacher tolerance for student behaviors. Greater understanding of the parental tolerance construct is needed, however, before addressing the relation between parental tolerance and child outcomes.

*Parent Tolerance of Misbehavior*

Very little research has evaluated parental tolerance for children's misbehavior. It has been suggested that parents who have low levels of tolerance for misbehavior may seek services for their children when a problem does not exist (Campbell, 1998) and that family stress has an impact on parents' perceptions of their children's behavior and the affective quality of parent-child interactions (Campbell, Pierce, March, & Ewing, 1991; Conger, McCarty, Yang, Lahey, & Kropp, 1984; Dumas & Wahler, 1985). Furthermore, increased family stress and lack of social support are associated with more dysfunctional parenting practices (Campbell, 1998). Thus, it appears that parents' conceptualization of their children's difficulties and their own psychological functioning could be related to

their tolerance for child behavior and their capacity to manage their child's behavior (Campbell, 1998). Parent tolerance may also influence the development of the problem, how childhood disorders are defined, and how they are maintained (Campbell, 1998). Overall, this potential link between parental functioning, tolerance, and child outcome suggests that parental tolerance for child behavior is an important area in the clinical child literature that deserves more scientific investigation.

In one recent study, Roberts (1999) examined the impact of parental tolerance of preschooler's expression of emotional distress and found that parents who allowed their children to express distress had children who exhibited more prosocial behaviors with peers compared to children whose parents were not tolerant of the expression of emotional distress. Parents from five samples were asked to describe their parenting behaviors by sorting descriptive cards in order to assess their levels of tolerance as measured by a 99-item version of the Child Rearing Practices Q-sort (CRP-Q; Block, 1965). Items that were found to measure the construct of parental tolerance during parent-child conflicts included instances when the parent comforts his or her child (11. comforts when upset), uses practical problem-solving techniques (94. resolves problem), and encourages his or her preschooler, especially boys, not to cry (92. encourage not to cry). Parents also indicated that they handled situations more positively when they were not feeling upset (93. cope better when not upset). Roberts (1999) concluded that the findings of this study were consistent with the cognitive-emotional processing model which suggests that a child's ego-resilient and positive behaviors are related to parents who respond in a tolerant and non-punitive manner to their children's emotional disturbance (Roberts & Strayer, 1987). Limitations of this study include that only

correlational information from Q-sorts completed by parents were obtained to measure parental tolerance, parent tolerance was based on 4 items, and preschoolers' prosocial behavior and competence was obtained from Q-sorts completed by the child's teacher. The present study attempted to address this particular weakness by comparing parent reports of tolerance with observational data because data based on observation may contain less bias and misrepresentation than verbal reports or other forms of assessment.

Another study examined the relationship between attachment and parenting behavior on the occurrence of adolescent deviant behavior of high school students in France (Claes & Lacourse, 2001). Adolescents completed questionnaires on attachment, conflicts with parents, amount of parental supervision, their levels of delinquent behavior, and parental tolerance. Tolerance for behavior was measured by the Parental Tolerance Index (PTI; Patterson, 1982). On the PTI, adolescents rated on a 5-point Likert scale several items about their parent's tolerance levels for a number of behaviors that occur outside of the home, especially with regard to friendships (e.g., When I go out, my parents know who I am with; My parents know what time I will return home). Higher scores indicate higher levels of parental tolerance. Findings were that females reported less perceived parental tolerance than males and adolescents whose parents were not natives of France indicated that their parents were less tolerant compared to adolescents whose parents were from France. In addition, adolescents with divorced or separated parents indicated that their parents were more tolerant and imposed fewer restrictions compared to adolescents with married parents. These researchers proposed a model of familial factors and adolescents' deviant behaviors suggesting that levels of maternal and paternal attachment are related to parental tolerance for female adolescents. This model

also indicates that higher levels of parental tolerance predict increased adolescent drug and alcohol use. Overall this study suggests that lower levels of perceived parental tolerance are associated with higher attachment levels, more parental supervision, and fewer adolescent delinquent behaviors in females. However, certain limitations of this study, such as the use of adolescents' self-reports and limited ability to be generalized to other populations, even within France, indicate that these are preliminary results.

One problem with studies examining tolerance for misbehavior is that there are no well-validated measures to study this construct. Thus, the studies may not examine parental tolerance for child misbehavior, but rather a related construct such as parenting stress. One recent investigation was designed to address this weakness by constructing a measure of tolerance (Brestan, Eyberg, Algina, Johnson, & Boggs, 2003). In this study, parental tolerance for children's misbehavior was defined as the amount of annoyance the parent experiences when his or her child misbehaves. Tolerance was described as ranging from complete intolerance to complete tolerance for children's misbehavior, with neutral amounts of tolerance falling between these two extremes. Items for the parent tolerance measure, the Child Rearing Inventory (CRI), were formed by the main investigator of the study and then revised and selected with help from a panel of five psychologists. This questionnaire was completed by a total of 262 parents (both Caucasian and African American) who participated in the study. After dropping three items that had poor item-to-total correlations, the CRI contained 11 items. The mean score on the CRI was 30.78 ($SD$ = 4.95) out of 44 possible points with higher scores reflecting lower tolerance for misbehavior. No differences in scores were found between African American and Caucasian parents. In order to establish evidence of concurrent

validity for the CRI, the Annoying Behavior Inventory (ABI) was developed. The ABI is a 36-item list of problematic child behavior that measures parental tolerance for difficult child behaviors. These items were formed by the main investigator and final items were selected by the five psychologists who aided in item selection and modification for the CRI. Items on the ABI were scored on a 0 to 3 point Likert scale with a Total Annoyance score ranging from 0 to 108. Higher scores were believed to demonstrate greater annoyance for the behavior. The participants also indicated which of the 36 behaviors they felt should be punished to yield a Total Punish score of 0 to 36.

Analyses demonstrated that the CRI Total score and the ABI Annoyance score were significantly correlated. In addition, scores on the CRI predicted scores on the Eyberg Child Behavior Inventory (ECBI) Problem Scale, a scale long-believed to provide an informal measure of parental tolerance (Eyberg & Pincus, 1999). Overall, results of this study suggest that the CRI has good internal consistency, adequate test-retest reliability, and initial evidence of concurrent validity. The authors of this study concluded that the CRI provided an index of parent's perceptions of his or her child's misbehavior and that there was initial evidence for the construct validity of the CRI.

One limitation of the study by Brestan and colleagues (2003) is that only one method of measurement was used. Another limitation is that concurrent validity of the CRI was established with only two measures, one of which was developed as part of the study. The present study attempted to address both of these limitations by using behavioral observation data in conjunction with the CRI scores. Exploratory construct validity of the CRI was assessed by comparing CRI scores with behavioral reports and

behavioral observations of two groups of parent-child dyads and by evaluating the difference between pre- and post-treatment CRI scores.

*Characteristics of Physically Abusive Parents*

Child physical abuse impacts not only the children who are physically and emotionally traumatized, but society as well (Kolko, 2002). Definitions of child physical abuse are influenced by social judgments of risk, safety, and severity of injury of the child (Emery & Laumann-Billings, 1998). One definition of child physical abuse used in the Third National Incidence Study of Child Abuse and Neglect (NIS-3) (Sedlak & Broadhurst, 1996) is that physical abuse is present when a child under 18 years of age has received an injury (harm standard) or risk of an injury (endangerment standard) due to being hit with a hand or object or being kicked, shaken, thrown, burned, stabbed, or choked by a parent or parental caregiver. Child abuse laws vary from state to state and interpretations of these laws may fluctuate so it is difficult to obtain exact prevalence and incidence rates of physical abuse (Kolko, 2002). However, Sedlak and Broadhurst (1996) reported a physical abuse incidence rate of 5.7 children per 1,000. Indeed, hundreds of thousands of children are physically abused annually with abuse severity ranging from mild to very severe, including death (Kolko, 2002).

There are several common characteristics of physically abusive adults. For instance, adults who experienced harsh physical discipline as young children tend to use physical violence with children (Gelles & Straus, 1987; Pianta, Egeland, & Erickson, 1989; Simons, Whitbeck, Conger, & Chyi-In, 1991; Whipple & Webster-Stratton, 1991); yet it appears that only 30% of abused children will be physically abusive as adults (Kaufman & Zigler, 1987). In addition, physically abusive parents are more likely to be

younger, single, nonbiological parents, (Milner, 1998) and have lower levels of attained education (Cadzow, Armstrong, & Fraser, 1999).

Adults who are physically abusive tend to have various cognitive distortions about child physical abuse. Abusive parents tend to perceive their children more negatively when compared to nonabusive parents (Azar & Sigel, 1990) and exhibit lower tolerance for child difficulties (Azar, 1997). Burgess and Conger (1977; 1978) found that physically abusive mothers have fewer interactions with their children, exhibit more aversive behaviors, and are more likely to focus on the negative areas of their relationship with their children. Specifically, these researchers found that when compared to controls, neglectful and abusive mothers were less verbally and physically interactive, less positive, more negative, and gave more commands. Other investigations have shown that physically abusive parents tend to express higher rates of negative behaviors toward their children (e.g., threats, negative physical contact; Cerezo & D'Ocon, 1995; Cerezo, D'Ocon, & Dolz, 1996).

Abusive parents report that their children have more behavior problems when compared to nonabusive parents (Milner, Robertson, & Rogers, 1990), although these children do not evidence behavior problems in some observational investigations (Reid, Kavanagh, & Baldwin, 1987). Observational studies have shown that abusive parents use less praise and speak less frequently when interacting with their children (Timmer, Borrego, & Urquiza, 2002). These findings suggest that abusive parents have distorted perceptions of their children's behavior. Research indicates that abusive mothers tend to minimize both their role in negative parent-child interactions and their child's role in positive interactions (Bradley & Peters, 1991). Milner and Chilamkurti (1991) found that

abusive parents evidence inaccurate perceptions of their children's behaviors and have distorted expectations of appropriate child behavior. In addition, parents tend to justify their abusive discipline procedures when using these inaccurate perceptions of their children (Milner, 1993).

Parents who physically abuse their children also tend to have lower tolerance for children's negative behaviors (Reid et al., 1987), especially when they are experiencing emotional and somatic distress (Lahey, Conger, Atkeson, & Treiber, 1984). Abusive parents are also hyperresponsive to mildly frustrating situations commonly found in child rearing (Bauer & Twentyman, 1985; Bradley & Peters, 1991; Twentyman, Rohrbeck, & Amish, 1984). In one study, abusive mothers evidenced greater physiological arousal when viewing stressful parent-child interactions compared to nonabusive mothers (Wolfe, Fairbank, Kelly, & Bradlyn, 1983). Abusive mothers compared to nonabusive mothers have been found to view their children's behaviors as intentionally annoying (Bauer & Twentyman, 1985), are more annoyed by child- and non-child related stressors, tend to be less satisfied with their children, perceive childrearing as unenjoyable (Trickett & Susman, 1988), and experience more distress as parents (Mash, Johnston, & Kovitz, 1983; Susman, Trickett, Ionnotti, Hollenbeck, & Zahn-Waxler, 1985). Furthermore, studies have indicated that abusive mothers have an externalizing attributional bias about their own influence over situations (Stringer & La Greca, 1985) and seem to think that their child's success is controlled by external and unstable causes (Larrance & Twentyman, 1983). The present study attempts to describe and evaluate abusive parents' tolerance for their children's misbehavior in order to contribute to this literature.

*Treatment of Physically Abusive Parents*

A variety of interventions, including parenting groups, support groups, anger management training, and in-home family treatment geared toward crisis intervention and case management, are used with physically abusive parents (Chaffin et al., 2004). Despite the wide-ranging forms of treatments and interventions, none meet criteria as supported and empirically-based interventions (Chaffin & Schmidt, in press). In addition, recurrence rates of physical abuse are high and may reach 40% or more after a few years (Chaffin et al., 2004) and a majority of reports are for recurrent physical abuse (DePanfilis & Zuravin, 1999; Way, Chung, Jonson-Reid, & Drake, 2001).

Recent research has attempted to determine more rigorously which treatments are the most effective in changing parenting strategies and reducing recidivism rates with physically abusive parents. Chaffin and colleagues (2004) evaluated the effectiveness of three treatments with physically abusive parents who were court-ordered to attend parenting treatment. These treatments are described in more detail in the method section because some pre- and post-treatment data from these families were included in the present study. It was found that at a median of 850 days, 19% of parents from group receiving Parent-Child Interaction Therapy (PCIT) had relapsed while 49% of parents from the community group had relapsed (Chaffin et al., 2004). An enhanced PCIT group that included PCIT and additional services for various psychological problems did not increase the effectiveness of PCIT or reduce risk of re-reports of physical abuse. Thus, it is important to understand how abusive parents change from pre- to post-treatment. For instance, at post-treatment, parents who participated in the PCIT group reported lower behavioral problems in their children, a lower risk of committing child physical abuse,

and exhibited more positive behaviors and fewer negative behaviors when interacting with their children (Chaffin et al., 2004). The present study will contribute to the literature by evaluating changes in parental tolerance for child misbehavior from pre- to post-treatment.

*Validity*

Validity is defined as the extent to which a test measures what it purports to measure. The present study evaluated validity of the CRI by examining the relationship of the CRI scores to external variables. External variables may be measures of a certain standard that the test is attempting to predict, relationships to other measures that examine the same constructs, and instruments measuring similar or different constructs. Evidence from the relationships between one test and an external variable allows one to examine construct consistency of the test. Construct validity refers to the ability of a test to measure a psychological construct or trait and it may be examined by correlations with other tests or variables (Standards for Educational and Psychological Testing, 1999). Exploratory construct validity of the CRI was one of the specific forms of validity examined in the present study.

Treatment validity or clinical utility is another form of validity defined as the degree to which data from an assessment measure can affect treatment decisions and outcome (Haynes, 2001). The present study examined the treatment validity of the CRI by comparing pre- and post-treatment differences in the abusive sample.

*Specific Aims*

There are four goals of this study: 1) to explore the relationship among behavioral observations, parent report measures, and a measure of parental tolerance for children's

misbehavior using the Child Rearing Inventory (CRI; Brestan et al., 2003) in order to provide evidence for exploratory construct validity for the CRI, 2) to examine whether the CRI scores can be predicted by parental reports of child misbehavior and by behavioral observations of parent and child behavior, 3) to learn if abusive parents become more tolerant of children's behavior following parenting treatment interventions, and 4) to examine whether the CRI can identify parent-child dyads with and without a history of physical abuse. The first goal was accomplished by running Pearson correlations between the CRI and the Behavioral Assessment System for Children Externalizing Composite (BASC; Reynolds & Kamphaus, 1992) and between the CRI and behavioral observation composites formed by the Dyadic Parent-Child Interaction Coding System-II (DPICS-II; Eyberg, Bessmer, Newcomb, Edwards, & Robinson, 1994). The second goal was evaluated by multiple regression with the demographic variables and study variables to determine which variables predict the CRI scores. The third goal was examined by running paired-sample *t*-tests between the CRI scores at pre- and post-treatment for abusive dyads. The fourth goal was evaluated by conducting logistic regression to determine if the CRI can predict abuse status among a sample of 19 dyads with a history of physical abuse and 19 matched dyads with no abuse history.

*Hypotheses*

Based on the research on parental and teacher tolerance and characteristics of physically abusive parents, the following hypotheses were proposed:

1. The CRI will demonstrate exploratory construct validity when related to the BASC Externalizing Composite and the DPICS-II composite categories for

families with and without a history of physical abuse. Specifically, in both the 86 abusive and 45 nonabusive dyads examined together and then separately:

a. The CRI scores will be significantly correlated with the BASC Externalizing Composite, with higher CRI scores (or lower tolerance) being related to higher externalizing scores.

b. The CRI scores will be significantly related to the DPICS-II Parent Prosocial Behavior composite, with higher CRI scores (or lower tolerance) being related to fewer positive parent behaviors.

c. The CRI scores will be significantly correlated with the DPICS-II Parent Inappropriate Behavior composite, with higher CRI scores (or lower tolerance) being related to more inappropriate parent behaviors.

d. The CRI scores will be significantly correlated with the DPICS-II Child Inappropriate Behavior composite, with higher CRI scores (or lower tolerance) being associated with more inappropriate child behaviors.

2. The CRI scores will be predicted by the BASC Externalizing Composite, the DPICS-II Parent Prosocial Behavior composite, the DPICS-II Parent Inappropriate Behavior composite, and the DPICS-II Child Inappropriate Behavior composite in the abusive and nonabusive dyads examined together to demonstrate exploratory construct validity.
3. The CRI scores will be significantly lower at post-treatment for abusive dyads who completed treatment.
4. The CRI will predict abuse status among a sample of matched dyads.

# II. METHOD

*Participants*

Participants in the present study were physically abusive caregivers selected from a court-ordered sample from the University of Oklahoma Health Sciences Center (OUHSC) in Oklahoma City, Oklahoma and comparison caretakers collected at Auburn University in Auburn, Alabama and Northern Illinois University (NIU) in Dekalb, Illinois. Abusive parents and their abused children from the communities of Oklahoma City, Oklahoma were court-ordered for treatment to the OUHSC Center on Child Abuse and Neglect by the Oklahoma County Department of Human Services (OCDHS; Child Protective Services) following a confirmed report of physical abuse. All of the families with a history of abuse participated in a larger treatment outcome study (Chaffin et al., 2004). These parent-child dyads were eligible to participate in the study if the following criteria were met: 1) both the abusing caretaker and abused child were able to participate in the study together and legal termination of parental rights or surrender of parental rights had not been initiated; 2) the abusing parent did not have an IQ score of 70 or below as measured by the Kaufman Brief Intelligence Test (K-BIT; Kaufman & Kaufman, 1990); 3) the abused child was between 4 and 12 years old; 4) the abusive caretaker did not have a report as a sexual abuse perpetrator on a child; and 5) the abusing parent provided informed consent to participate voluntarily. Referring child welfare workers provided general demographic information on all referrals. Referrals

were made on 300 dyads and of those, 112 (37% of all referrals) met inclusion criteria and became participants in the Chaffin et al. (2004) study. Reasons for the pre-inclusion attrition were that the abusive caretaker chose not to participate in any treatment (48% of those not participating) or could not be located (17% of those not participating). No significant differences were found between participating and non-participating families based on caretaker or child gender or age, race/ethnicity, family structure (e.g., single parent or two-parent households), or the abusive caretaker's relationship to the child (e.g., biological parent, step-parent, etc.) A final sample of 110 abusive parent-child dyads was collected (two dyads were removed from the larger study based on the participants' communication difficulties).

After the pre-treatment assessment was conducted, the dyads were randomly assigned to one of three parenting treatments: Parent-Child Interaction Therapy (PCIT), Enhanced Parent-Child Interaction Therapy (EPCIT), and a standard Community Group (CG). The PCIT intervention was composed of three phases. The first phase of treatment was a six-session orientation group aimed to increase parent motivation for treatment participation. At the end of the group parents had to meet criteria in order to move into the next phase of treatment. Parents who did not meet criteria ($n$=2) were required to repeat the first phase. The next phase of the PCIT intervention was 12 to 14 sessions of individual parent-child PCIT.

PCIT, a behavioral, family-based treatment originally designed for treatment of children ages 3 to 6 with disruptive behavior disorders, was developed by Dr. Sheila Eyberg (Hembree-Kigin & McNeil, 1995). This treatment is empirically supported when compared to wait-list controls (McNeil, Capage, Bahl, & Blanc, 1999; Schuhmann,

Foote, Eyberg, Boggs, & Algina, 1998), classroom controls (McNeil, Eyberg, Eisenstadt, Newcomb, & Funderburk, 1991), and group parent training (Eyberg & Matarazzo, 1980). PCIT is based on ongoing assessments of the parent-child interaction and it includes two phases: Child Directed Interaction (CDI) and Parent Directed Interaction (PDI) (Hembree-Kigin & McNeil, 1995). The first phase consists of a teaching session followed by 5 to 6 live coaching sessions and focuses on establishing a positive parent-child relationship and daily positive interactions. The second phase consists of a teaching session followed by 5 to 6 live coaching sessions and aims to teach parents consistent and nonviolent discipline skills.

At the completion of the CDI in 5 to 6 sessions and the PDI in 5 to 6 sessions, parents participated in a four-session follow-up group program that focused on any issues the parents wished to discuss (see Chaffin et al., 2004). Participants in the EPCIT intervention received the same motivation group and PCIT interventions as the participants in the PCIT group. Services tailored to individual problems such as parental depression, current substance abuse, and family, marital, or domestic violence issues were added to this group. In addition, home services were provided to help the parents practice their PCIT skills in the home setting. The standard CG received psychoeducational parenting skills in three manualized and structured modules. The first module is a six-session orientation group in which parents learn about services available to them, listening skills, ways parenting practices influence children, and how parenting discipline practices are taken from and passed on to generations. The second module consists of 12 sessions in which parents are provided information about child development, discipline, praise, behavior management, communication skills, stress

reduction, and ways parental problems impact children. Particular needs of parents are also addressed. The third module consists of a 12-session anger management program that teaches parents to develop self-awareness, self-control, and empathy for others. Each of these structured parenting interventions lasted for approximately six months and participants received a gift valued at $10 for participating in the post-treatment assessment. For the purposes of the present study, pre-treatment information and post-treatment CRI data from treatment completers were used.

For the present study, data from only African American and Caucasian families were used, leaving a total sample of 97 dyads with a history of physical abuse. Significant portions of observational data for some families were missing due to video equipment failure so data from a total sample of 86 abusive dyads were included in this study. Forty-seven dyads (54.7%) were Caucasian and 39 dyads (45.3%) were African American. Parents included 56 female caregivers (65.1%) and 30 male caregivers (34.9%) with an average age of 31.65 (*SD*=8.39). Children included 42 females (48.8%) and 44 males (51.2%) with an average age of 8.02 (*SD*=2.87). Thirty-five parents described their marital status as single (40.7%), 26 as married (30.2%), 18 as separated/divorced (20.9%), and 6 as "other" (7.0%). Marital status data was missing for one parent. A majority of the abusive dyads reportedly received governmental monetary assistance (65.1%). Five parents (5.8%) obtained less than 9 years of education, 16 (18.6%) obtained less than 12 years of education, 9 (10.5%) received their GED, 16 (18.6%) received their high school diploma, 16 (18.6%) received vocational/technical degrees, 19 (22.1%) attended two years of college, and 3 (3.5%) attended four years of college. The mean intelligence score for the parents was 94.88 (*SD*=10.3, range=70.0 to

114.0) and the mean intelligence score for the children was 93.57 (*SD*=14.65, range=59.0 to 124.0). Socioeconomic status cannot be reported for the abuse group because educational and occupational data consistent with Hollingshead SES were not collected on families with a history of abuse (see Table 1).

Fifty-one normative participants were recruited to participate as a comparison sample for the Chaffin et al. (2004) study. The comparison families were recruited from the communities of Auburn, Alabama and Dekalb, Illinois. To be eligible for the study the following criteria had to be met: 1) the comparison children had to be between 8 and 12 years old at the time of data collection; 2) the comparison parent and child could not have any history of mental retardation as measured by the K-BIT; and 3) the children from the comparison sample did not have any reported history of physical abuse.

For the present study, data from only African American and Caucasian comparison families were used, leaving a total sample of 45 dyads. Thirty-seven dyads (82.2%) were Caucasian and 8 dyads (17.8%) were African American. Parents included 38 female caregivers (84.4%) and 7 male caregivers (15.6%) with an average age of 39.34 (*SD*=6.86). Children included 15 females (33.3%) and 30 males (66.7%) with an average age of 10.37 (*SD*=1.34). Mean parental intelligence scores were 108.53 (*SD*=8.19, range=87.0 to 124.0) and mean child intelligence scores were 111.49 (*SD*=12.5, range=85.0 to 138.0). Thirty-two of the comparison parents were married (71.1%), 5 were single (11.1%), and 8 were separated/divorced (17.8%). Four parents had 12 years of education (8.9%), 4 had 13 years (8.9%), 9 had 14 years (20.0%), 5 had 15 years (11.1%), 13 had 16 years (28.9%), 6 had 18 years (13.3%), 1 had 19 years

(2.2%), and 3 had 20 years (6.7%). The mean Hollingshead SES Index score for the comparison dyads was 45.02 (*SD*=16.18, range=12.0 to 66.0) (see Table 1).

Significant differences in demographic variables exist between the abusive and comparison dyads. Significantly more girls were in the abusive group (*n*=42) than in the comparison group (*n*=15), $\chi^2(1)=12.79$, *p*=.000. However, a comparable number of boys were in the abusive (*n*= 44) and comparison (*n*=30) samples, $\chi^2(1)=2.65$, *p*=.104. Children from the comparison group were significantly older (*M*=10.37, *SD*=1.34) than children from the abuse group (*M*=8.02, *SD*=2.87), *t*(129)= -5.19, *p*=.000, and parents from the comparison group were significantly older (*M*=39.34, *SD*=6.86) than parents from the abuse group (*M*=31.65, *SD*=8.39), *t*(129)= -5.29, *p*=.000. With regard to parent gender, significantly more male caregivers were in the abusive group (*n*=30) than in the comparison group (*n*=7), $\chi^2(1)=14.30$, *p*=.000. However, while a larger number of female caregivers were in the abusive group (*n*=56) than the comparison group (*n*=38), $\chi^2(1)=3.45$, *p*=.063, this difference approached, but was not, statistically significant.

The comparison group children had higher mean intelligence scores (*M*=111.49, *SD*=12.50) than the abuse group children (*M*=93.57, *SD*=14.65), *t*(129)= -6.98, *p*=.000, and the comparison group parents had higher mean intelligence scores (*M*=108.54, *SD*=8.19) than the abuse group parents (*M*=94.88, *SD*=10.30), *t*(127)= -7.57, *p*=.000. A significantly larger number of African American dyads were in the abuse group (*n*=39) compared to the comparison group (*n*=8), $\chi^2(1)=20.45$, *p*=.000. However, there was no significant difference in the number of Caucasian dyads in the abuse group (*n*=47) and the comparison group (*n*=37), $\chi^2(1)=1.19$, *p*=.275. Significantly more parents from the abuse group were single (*n*=35) when compared to the comparison group (*n*=5),

$\chi^2(1)=22.50$, $p=.000$, and significantly more parents from the abuse group were divorced or separated ($n=18$) when compared to the comparison group ($n=8$), $\chi^2(1)=3.85$, $p=.05$. No significant differences in number were found between married parents from the abuse group ($n=26$) and married parents from the comparison group ($n=32$), $\chi^2(1)=.61$, $p=.43$. See Table 1 for a summary of demographic characteristics of the abuse and comparison groups and a summary of the group differences.

Due to the large number of group differences, two groups of 19 parent-child dyads were matched from the 110 abusive and 51 normative families for the purposes of a different study (Deskins, 2005). These groups of families were matched on various demographic characteristics such as race, child age, child gender, parent gender, and parent educational level. Due to missing data, two groups of 18 parent-child dyads were included in the present study. Each group is comprised of 7 female children, 11 male children, 12 female adults, and 6 male adults. No significant age differences exist between the children in the abuse group ($M=9.94$, $SD=1.83$) and the children in the matched comparison group ($M=9.94$, $SD=1.33$), $t(34)=.02$, $p=.99$, or between the parents in the abuse group ($M=33.56$, $SD=7.22$) and the parents in the matched comparison group ($M=36.64$, $SD=8.03$), $t(34)= -1.21$, $p=.233$. The groups have an equal number of African American families ($n=5$ each) and of Caucasian families ($n=13$ each). No significant differences were found between the number of single parents from the abuse group ($n=4$) and from the matched comparison group ($n=3$), $\chi^2(1)=.14$, $p=.705$, the number of married parents in the abuse group ($n=6$) and in the matched comparison group ($n=9$), $\chi^2(1)=.60$, $p=.439$, and the number of divorced or separated parents in the abuse group ($n=7$) and the matched comparison group ($n=6$), $\chi^2(1)=.08$, $p=.782$. No significant differences were

found between the intelligence scores of children in the abuse group (*M*=96.00, *SD*=16.35) and in the matched comparison group (*M*=106.22, *SD*=15.69), *t*(34)= -1.91, *p*=.064. However, parents from the matched comparison group had significantly higher intelligence scores (*M*=107.06, *SD*=7.90) than the parents from the abuse group (*M*=96.17, *SD*=8.58). Please see Table 2 for a summary of demographic information for the matched groups.

Out of the 86 abuse dyads, 43 families completed treatment but only 34 treatment completers completed the CRI at the post-treatment assessment. Thus, nine treatment completers were dropped from the pre-post comparison analyses because they did not complete the CRI at the post-treatment assessment. A significant difference on education was found between the abuse dyads who finished treatment and completed questionnaires and those who did not complete the CRI at post-treatment due to dropping out of treatment. Table 3 provides a summary of demographic information for the 34 treatment completers and 43 treatment drop outs (i.e., those with and without post-treatment CRI data). The 9 parents who completed treatment but dropped out of the assessment are not included in this table.

*Screening Measures*

The same screening measures and measures for assessing caretaker and child behaviors were used with both the comparison and abusive groups. Each group completed additional measures as part of larger research studies that were not used in the present study.

*Demographic Questionnaire.* Basic demographic information was collected on all families using a standard form. Investigators from the OUHSC developed a standard

form available in both Spanish and English versions. This questionnaire was pilot tested on 100 parents in family treatment programs and confusing items and items with inconsistent responses were changed. Test-retest reliability was satisfactory (Chaffin et al., 2004). Parents provided information about their family members including child gender, age, and race/ethnicity and parent occupation, marital status, and type of education received (<9, <12, High School Diploma, Vo/Tech, some college, and college). The comparison sample demographic form contained many of the same variables used with the abusive sample. However, some differences existed between the forms used for both samples. For example, one difference between the demographic forms was that the comparison parents provided years of education as opposed to type of education.

*Kaufman Brief Intelligence Test*. The Kaufman Brief Intelligence Test (K-BIT; Kaufman & Kaufman, 1990) is a brief individually administered measure of verbal and nonverbal intelligence for individuals ages 4 to 90. It provides a measure of crystallized and fluid thinking based on two subscales: Vocabulary and Matrices. These subtests correlate highly with more comprehensive measures of cognitive ability. Standard scores for the two subtests and the K-BIT IQ Composite are available for all ages with a mean of 100 and a standard deviation of 15. The K-BIT was standardized on 2,022 participants recruited from a variety of organizations such as schools, Head Start and preschool programs, universities, day cares, community colleges, churches, and learning centers. Split-half coefficients for the Vocabulary subtest were excellent ranging from .89 to .98 and coefficients for the Matrices subtest were good ranging from .74 to .95. For the K-BIT IQ Composite, split-half reliability was calculated using Guilford's (1954) formula, and the obtained coefficients were excellent ranging from .88 to .98. Test-retest

reliability was determined by administering the K-BIT two times to 232 participants. Obtained test-retest reliability coefficients for the K-BIT include the following ranges: .86 to .97 on the Vocabulary subtest, .80 to .92 on the Matrices subtest, and .92 to .95 for the IQ Composite. Support for construct validity of the K-BIT has been demonstrated by significant correlations with the Kaufman Assessment Battery for Children (K-ABC**)** (Zins & Barnett, 1983**)**, the Wechsler Intelligence Scale for Children-Revised (WISC-R; Wechsler, 1974), and the Wechsler Adult Intelligence Scale-Revised (WAIS-R; Wechsler, 1981), meaning that the Vocabulary and Matrices subtests appear to examine the same constructs as other measures of cognitive abilities.

*Measures for Assessing Clinic and Home Behavior*

*Child Rearing Inventory.* The Child Rearing Inventory (CRI; Brestan, Eyberg, Algina, Johnson, & Boggs, 2003) is an 11-item measure designed to assess parental tolerance for child misbehavior. For each of the 11 items parents choose from one of two statements representing different degrees of severity. For example, respondents are asked to choose between the options of "My child often does things I cannot stand" or "My child rarely does things I cannot stand." After choosing the option that best matches the parent's perceptions of their child's behavior, the parent indicates whether the chosen statement is "Sort of True" or "Really True." These responses are scored on a 1 to 4 Likert-type scale, yielding a total score ranging from 11 to 44. Higher scores represent lower tolerance for child misbehavior. The mean CRI total score of the initial normative sample was 30.78 (*SD* = 4.95) (Brestan et al., 2003). Initial evidence for internal consistency, test-retest reliability, construct, and concurrent validity of the CRI was reported in the initial validation study (Brestan et al., 2003) and validity of the CRI was

examined in the present study by comparing this measure to additional well-established measures (the DPICS-II and BASC) and by examining pre- and post-treatment score changes.

*Behavioral Assessment System for Children.* The Behavioral Assessment System for Children (BASC; Reynolds & Kamphaus, 1992) is a multidimensional system that measures many aspects of behavior and personality, including adaptive (or positive) and clinical (or negative) dimensions in children ages 2 ½ to 18 years old. The BASC is comprised of five forms: Self Report, Teacher Rating Scales, Parent Rating Scales, Structured Developmental History, and Student Observation System. Normative data on the BASC has been collected on a large sample of 9,861 children, 3,065 parents, and 4,042 teachers from a variety of age, gender, ethnic, and socioeconomic backgrounds. The internal consistency coefficients are adequate, but estimates of test-retest reliability and interrater reliability are low (Merenda, 1996). Many studies have reported adequate validity and diagnostic utility of the BASC (Doyle, Ostrander, & Skare, 1997; Merydith, 2001; Ostrander, Weinfurt, & Yarnold, 1998).

In the present study, the Parent Rating Scale was used. The BASC Parent Rating Scale (PRS) for children aged 6 to 11 years old contains 138 items and the PRS for adolescents aged 12 to 18 years old contains 126 items. This instrument assesses children's adaptive and problem behaviors in the community and home settings. Parents rate the frequency that these behaviors occur on a 4-point scale, ranging from *Never* to *Almost Always*. For the present study, the PRS Externalizing Problems Composite was examined. This composite is comprised of the Aggression, Hyperactivity, and Conduct Problems subscales of the BASC.

*Dyadic Parent-Child Interaction Coding System-II.* The Dyadic Parent-Child Interaction Coding System-II (DPICS-II; Eyberg, Bessmer, Newcomb, Edwards, & Robinson, 1994) is a behavioral coding system that assesses parent-child social interaction quality. It is designed for both clinical and research settings as a way to measure pre- and post-treatment changes and acts as an ongoing assessment tool. Observations of parent-child interactions are conducted in three 5-minute contrived situations that require differing amounts of parental control (5 minutes of child-directed play, 5 minutes of parent-directed play, and 5 minutes of clean-up.) Before both the Child-Directed Interaction (CDI) and Parent-Directed Interaction (PDI), there are 5 minutes of warm-up that are not coded, making the interaction last for up to 25 minutes. This coding system is comprised of twenty-five categories for child behavior and twenty-seven categories for parent behavior. For both the parent and child, these categories include verbalizations (Information and Behavior Descriptions, Descriptive and Information Questions, Direct and Indirect Commands, Labeled and Unlabeled Praise, Criticisms), vocalizations (Laugh, Whine, Yell), and physical behaviors (Destructive Behavior, Physical Positive, Physical Negative). See Table 4 for a list of the parent and child coding categories and Table 5 for a description of the categories. Research demonstrates that this coding system has good inter-rater reliability, test-retest reliability, and discriminant validity between referred and non-referred children (Aragona & Eyberg, 1981; Brestan, Foote, & Eyberg, 2005; Bessmer, Brestan, & Eyberg, 2005; Robinson & Eyberg, 1981; Webster-Stratton, 1985). Normative data are available for mother-child and father-child dyads with children ages 3 to 7 and for parent-child dyads with children ages 8 to 12 (Bessmer et al., 2005; Brestan et al., 2005; Deskins, 2005). The DPICS-II

categories may be combined to represent positive and negative behaviors. For this study, parent and child codes were compiled to form a prosocial and inappropriate behavior category for parents (see Table 6) and a category of inappropriate behaviors for children (see Table 7). Since it is thought that tolerance is a pervasive trait, the codes for each composite were summed across the CDI, PDI, and Clean-Up (CU) portions of the DPICS-II observations.

*Procedure*

Comparison families were recruited by advertisements placed in local restaurants, preschools, doctor's offices, local and university newspapers, and throughout the Auburn University and NIU campuses. In addition, families were recruited by radio advertisements and public service announcements. For each of the families, a brief telephone interview was conducted to assess their eligibility for the study. If the parent indicated that his or her child was between the ages of eight and twelve, that neither the parent nor the child had a history of mental retardation or a behavioral disorder, and that their family had not been involved in Child Protective Services, a data collection session was scheduled with the parent and child. During the session, questionnaires were administered and the observations were videotaped in a standardized manner by graduate and undergraduate researchers. Before information was collected, informed consent was obtained from the parents. Next, the K-BIT was administered to the parents and children to determine whether or not scores were within the mentally retarded range of intellectual functioning, as this would preclude their participation in the study. The parent and child were then given pencil and paper measures to complete. After completion of the

questionnaires, the interaction between the parent and child was videotaped. At the end of the session, parents were paid $20 to $25 for their participation.

As previously mentioned, data from the abuse sample were obtained at the pre-treatment intake as part of a larger treatment outcome study (Chaffin et al., 2004). Baseline data were comprised of a review of the child welfare investigation and all prior child welfare reports, self-report measures, structured interviews, and a DPICS-II observation. At the intake session, the abusive caretakers provided written informed consent and their abused children provided assent to participate in the study. Data collection procedures were similar to those used with the comparison dyads. However, the parents from the abuse sample were not paid for their participation. In addition, two videotaped DPICS-II observations were conducted on one day. Only the first observation was used for the purposes of the present study. At the completion of their assigned parenting-training, the abuse dyads completed the same battery of tests. For the purposes of this study, only post-treatment CRI data from treatment completers were used.

The procedure of the videotaped observation was identical for both groups. The parent and child were brought into a playroom at either the Parent-Child Lab at Auburn University, the NIU Psychology Clinic, or the OUHSC clinic where the same age-appropriate toys (i.e., K-Nex, Lincoln Logs, Legos, and 2 Playmobile sets) were provided for the assessment session. The location of the toys in the playroom at OUHSC was replicated at Auburn University and NIU. The parent and child were then videotaped from behind a one-way mirror in the three DPICS II standard situations. The CDI and PDI were each conducted for 10 minutes followed by 5 minutes of the Clean-Up (CU) situation for the 25-minute observation. During the observation, parents wore a bug-in-

the-ear device, an audio receiver worn in the ear that allowed the researcher to communicate with the parent during the interaction to signal parents when the observation began and when to change from one situation to another. Parents were read standard instructions through the bug-in-the-ear device from a transmitter in the observation room at five-minute intervals.

For the first situation, CDI, the following instructions were given:

> "In this situation, tell _____ that he/she may play with whatever he/she chooses. Let him/her choose any activity he/she wishes. You just follow his/her lead and play along with him/her."

After 5 minutes of the warm-up period of CDI, the parent was told:

> "You're doing a nice job of allowing _____ to lead the play. Please continue to let him/her lead."

In the next situation, PDI, the following directions were given:

> "That was fine. Do not clean up the play things at this time. Now we'll switch to another situation. Tell _____ that it is your turn to choose the game. You may choose any activity. Keep him/her playing with you according to your rules."

After 5 minutes of the PDI warm-up period, the parent was told:

> "You're doing a nice job of leading the play. Please continue to get _____ to play along with you according to your rules."

In the last situation, CU, the parent was given the following instructions:

> "That was fine. Now I'd like you to tell _____ that it is time to leave the playroom and the toys must be put away. Make sure you have him/her put the toys away

by him/herself. Have him put all the toys in their containers and all the containers on the table."

At the end of the DPICS II observation, a 5-minute problem-solving observation not included in the present study was conducted for the comparison dyads.

*Coders.* All coders successfully completed training procedures for the DPICS II following recommendations provided by The Workbook: A coder training manual for the Dyadic Parent-Child Interaction Coding System II (Eyberg, Edwards, Bessmer, & Litwins, 1994) prior to observing and coding the videotaped parent-child interactions. Training for the DPICS II coding system consists of a minimum of 30 hours which includes reading the coding manual, studying and passing the paper and pencil training exercises and quizzes, and coding transcripts of parent-child interactions. After successful completion of the training manual, the observer codes a criterion videotape with a transcript and recodes the videotape based on feedback from a reliable coder. If reliability was not reached after coding the criterion tape three times, another criterion tape was used. The coders are deemed successfully trained once they reached a minimum overall kappa agreement (.80) with the correct codes for the criterion tape.

Weekly training sessions with the coders and a faculty member with expertise in the DPICS II were held during coding of the comparison dyads from Auburn University and NIU. Nineteen of the abusive dyads from the University of Oklahoma were also coded at this time as part of another project. In these meetings aimed to prevent observer drift, observers discussed coding issues and reviewed coding categories that posed difficulties.

Undergraduate research assistants watched and recorded transcripts of the parent-child interactions for all of the comparison families and 19 of the abuse dyads. These transcripts contained the time that each segment started and ended and included the time for each verbalization during the interaction. Transcripts were then changed as necessary by the coder. It is believed that transcriptions of the verbalizations allowed for more accurate coding of parent-child interactions when it was difficult to understand and/or hear the videotape.

Coding of the videotapes was completed by a team of undergraduate and graduate students trained in the DPICS II at Auburn University and OUHSC. At each site, primary observers unaware of hypotheses coded three segments (CDI, PDI, CU) for each of the families and reliability was assessed by randomly selecting one segment from each tape to be re-coded by a team member. Reliability was calculated differently for the abuse and comparison samples. Reliability for the codes of the abuse families was obtained by calculating the interobserver percent agreement of frequency counts. Interobserver percent agreement involves dividing the number of agreements by the number of agreements plus disagreements. Eighty percent agreement is considered an adequate standard for reliability estimates (Page & Iwata, 1986). For comparison families, reliability scores were obtained with the kappa statistic. Cohen's kappa (Cohen, 1960) is "…the ratio of actual nonchance agreements divided by the total possible nonchance agreements" (Suen & Ary, 1989, p. 112). Kappa values range from -1.00 to 1.00, with negative values and values near zero considered to be chance levels of agreement or lower. Kappa values above .75 are considered excellent, values from .60 to

.75 are considered good, while values .40 to .60 are considered fair (Fleiss, 1981; Hops, Davis, & Longoria, 1995).

Cross-site reliability was calculated for 7 tapes that were coded twice, once by Auburn students using a transcript and sequential codes, and once by OUHSC students using frequency codes. Interrater reliability for 7 tapes coded by both the Auburn research assistants and OUHSC research assistants was assessed using interclass correlations. Correlations between the codes were .94 for negative parent behaviors and .84 for positive parent behaviors (Chaffin et al., 2004) suggesting that the codes obtained by frequency counts and sequential codes are comparable. In all, 44 comparison tapes with sequential DPICS-II codes, 18 abuse tapes with sequential DPICS-II codes, and 66 abuse tapes with frequency count data were available for analyses by the present study. Reliability coding was completed and all of the DPICS-II codes were entered into an SPSS database and double-checked by undergraduate research assistants for accuracy. Mean kappa estimates for the 44 comparison families were .85 (*SD*=.08, range=.69 to 1.00) for parent codes, .82 (*SD*=.08, range=.66 to .95) for child codes, and .84 (*SD*=.07, range=.70 to .95) for overall codes. Mean kappa estimates for the 18 abuse families were .86 (*SD*=.08, range=.67 to 1.00) for parent codes, .84 (*SD*=.09, range=.68 to .98) for child codes, and .86 (*SD*=.06, range=.72 to .96) for overall codes. These mean reliability estimates are in the excellent range. Please see Table 8 for a summary of these kappa estimates. In addition, the 66 tapes from OUHSC with frequency counts had adequate reliability according to Chaffin and colleagues (2004).

# III. RESULTS

*Exploratory Construct Validity of the CRI*

It was hypothesized that for the total sample of abusive and nonabusive dyads, the CRI scores would be significantly related to the BASC Externalizing Composite. With an overall CRI mean score of 31.24 (*SD*=4.66) and overall BASC Externalizing Composite mean of 58.03 (*SD*=15.72), a significant correlation was found (*r*=.23, *p*=.008). For both groups combined, it was expected that the CRI scores would correlate with the DPICS-II Parent Prosocial Behavior composite (*M*=66.39, *SD*=27.90), the DPICS-II Parent Inappropriate Behavior composite (*M*=9.76, *SD*=8.33), and the DPICS-II Child Inappropriate Behavior composite (*M*=6.73, *SD*=8.22). None of the correlations between the CRI and DPICS-II composites were significant. Please see Table 9 for a summary of the correlational analyses.

In order to provide more information about the abusive and nonabusive groups, the correlations that were conducted for the total sample were conducted for the abusive and nonabusive dyads separately. For each group examined separately, the CRI scores were expected to be significantly correlated with the BASC Externalizing Composite, with higher CRI scores correlating with higher externalizing scores. In the abusive sample, a significant correlation was found between the CRI and BASC Externalizing Composite (*r*=.30, *p*=.005) and no significant correlation was found in the comparison sample using these measures (*r*=.00, *p*=.99). In order to gain a better understanding of

these findings, independent *t*-tests were conducted to test the differences between the abuse and comparison groups on the CRI and BASC Externalizing Composite. Scores on the CRI did not differ between the abusive group (*M*=31.19, *SD*=5.08) and the comparison group (*M*=31.33, *SD*=3.76), *t*(129)= -.17, *p*=.86. However, children as rated by their parents in the abusive group had significantly higher mean BASC Externalizing Composite scores (*M*=61.72, *SD*=17.27) than children in the nonabusive group (*M*=50.98, *SD*=8.75), *t*(129)=3.91, *p*=.000. These analyses are based on *n*=86 in the abusive group and *n*=45 in the comparison group.

It was hypothesized that the CRI scores would be significantly related to the DPICS-II Parent Prosocial composite, with higher CRI scores being related to fewer positive parent behaviors for both the maltreated and nonmaltreated groups examined separately. No significant correlations on these measures were found in the abusive group (*r*= -.13, *p*=.31) or in the comparison group (*r*=.10, *p*=.498). A secondary analysis using independent t-tests was conducted to determine if these groups differed significantly on the DPICS Parent Prosocial composite. While the abusive parents exhibited fewer overall prosocial behaviors (*M*=65.60, *SD*=30.03) than the comparison parents (*M*=67.60, *SD*=24.64), these differences were not at the level of statistical significance, *t*(108)= -.37, *p*=.71. In addition, these analyses are based on *n*=66 in the maltreated group and *n*=44 in the comparison group due to missing data.

It was expected that the CRI scores would be significantly related to the DPICS-II Parent Inappropriate Behavior composite, with higher CRI scores being related to more inappropriate parent behaviors for both the abusive and nonabusive groups examined separately. The CRI scores from the parents in the maltreating group (*r*=.06, *p*=.64) and

from the parents in the comparison group ($r$= -.08, $p$=.59) did not significantly correlate with their inappropriate behaviors. Thus, this hypothesis was not supported. Independent *t*-tests were conducted to determine if there were any group differences on the DPICS-II Parent Inappropriate Behavior composite. The maltreating parents evidenced more inappropriate behaviors ($M$=11.62, $SD$=9.50) than the nonmaltreating parents ($M$=6.98, $SD$=5.09), $t$(108)=2.97, $p$=.004. Again, due to missing data, these analyses are based on $n$=66 in the abusive group and $n$=44 in the nonabusive group.

For both the abusive and comparison groups examined separately, it was hypothesized that the CRI scores would be significantly correlated with the DPICS-II Child Inappropriate Behavior composite, with higher CRI scores correlated with increased inappropriate child behaviors. This hypothesis was not supported in the abusive sample ($r$=.02, $p$=.86) or in the comparison sample ($r$= -.13, $p$=.40). Based on independent *t*-tests, no group differences on the DPICS-II Child Inappropriate Behavior composite were found between the maltreated children ($M$=6.64, $SD$=7.42) and the nonmaltreated children ($M$=6.86, $SD$=9.39), $t$(108)= -.14, $p$=.89. Again, these analyses are based on $n$=66 in the abusive sample and $n$=44 in the comparison sample. Please see Table 10 for a summary of all the abusive and nonabusive sample score means.

Because it is possible that parent tolerance for child misbehavior changes when children get older, the correlational and independent *t*-test analyses that were conducted for the entire sample were repeated with the complete comparison group and with the abusive dyads with children ages 8 to 12. Demographic differences between these two groups were similar to those found between the entire abusive and comparison samples. While child ages were comparable between the 8 to 12 year old sample of abused

(*M*=10.04, *SD*=1.75) and comparison (*M*=10.37, *SD*=1.34) groups, *t*(93)= -1.03, *p*=.31, parents in the comparison sample were significantly older (*M*=39.34, *SD*=6.86) than parents in the abuse sample (*M*=34.36, *SD*=8.12), *t*(93)= -3.21, *p*=.002. There were significantly more single abusive parents (*n*=19) than single comparison parents (*n*=5), $\chi^2(1)=8.17$, *p*=.004, and there were significantly more married comparison parents (*n*=32) than married abusive parents (*n*=17), $\chi^2(1)=4.59$, *p*=.03. There was a significantly larger number of African Americans in the abuse group (*n*=24) than in the comparison group (*n*=8), $\chi^2(1)=8.00$, *p*=.005. Finally, parent intelligence scores in the comparison group (*M*=108.54, *SD*=8.19) were significantly larger than those in the abuse group (*M*=96.62, *SD*=10.58), *t*(91)= -6.00, *p*=.000, and child intelligence scores in the comparison group (*M*=111.49, *SD*=12.50) were significantly larger than those in the abuse group (*M*=95.26, *SD*=14.32), *t*(93)= -5.86, *p*=.000.

For the 8 to 12 year old abuse group, the CRI Total score was significantly correlated with the BASC Externalizing Composite (*r*=.33, *p*=.019). However, no significant correlations were found between the CRI Total score and the DPICS-II Parent Prosocial Behavior composite (*r*=.10, *p*=.556), the CRI Total score and the DPICS-II Parent Inappropriate Behavior composite (*r*=.13, *p*=.432), or the CRI Total score and the DPICS-II Child Inappropriate Behavior composite (*r*=.14, *p*=.389). Independent *t*-tests were conducted to determine if any differences existed between the 8 to 12 year old abuse group and the comparison group. The only significant difference found was between the BASC Externalizing Composite which was higher in the 8 to 12 year old abuse group (*M*=64.70, *SD*=16.63) than in the comparison group (*M*=50.98, *SD*=8.75), *t*(93)=4.95, *p*=.000.

*Prediction of the CRI*

It was expected that the CRI scores would be predicted by the BASC Externalizing Composite, the DPICS-II Parent Prosocial Behavior composite, the DPICS-II Parent Inappropriate Behavior composite, and the DPICS-II Child Inappropriate Behavior composite in the abusive and nonabusive dyads examined together. Multiple regression with the demographic and study variables was conducted. The CRI scores were entered as the dependent variable. As shown in Table 11, the DPICS-II Parent Prosocial Behavior composite, the DPICS-II Parent Inappropriate Behavior composite, the DPICS-II Child Inappropriate Behavior composite, parent and child gender, parent and child age, marital status, race, group status (i.e., abusive vs. comparison), and parent and child intelligence scores were not significant predictors of the CRI scores, while the BASC Externalizing Composite was a significant predictor of the CRI scores. The overall variance accounted for by these variables (adjusted $R^2$) was 0.1%, $F(13, 92)=1.01$, $p=.45$.

The multiple regression analysis was re-run with variables that approached significance (i.e., $p$ values less than .32). The DPICS-II Child Inappropriate Behavior composite, parent age, child gender, parent marital status, child intelligence, and the BASC Externalizing Composite were not significant predictors of the CRI scores, although the model approached significance. Again, the BASC Externalizing Composite was the only significant predictor of the CRI scores. The overall variance accounted for by these variables (adjusted $R^2$) was 5.8%, $F(6, 102)=2.11$, $p=.06$. Please see Table 12 for a summary of this model.

*Pre- and Post-treatment CRI Score Comparison*

It was expected that for the abusive dyads who completed parent training, the CRI scores would be significantly lower at post-treatment. Paired sample *t*-tests were conducted to assess the difference between pre- and post-treatment CRI scores for treatment completers. Based on 34 dyads who completed treatment and had both pre- and post-treatment CRI scores, the mean CRI scores were lower, although not significantly different, at post-treatment ($M$=30.24, $SD$=5.61) when compared to pre-treatment scores ($M$=31.59, $SD$=4.87), $t(33)=1.82$, $p=.077$. Table 13 summarizes the pre- and post-treatment CRI scores.

*Abusive vs. Comparison Group Prediction*

It was expected that the CRI Total scores could be used to predict abuse status among a sample of matched dyads. Logistic regression was conducted to assess whether the CRI Total scores significantly predicted abuse. The CRI scores did not predict abuse status, $\chi^2(1)=.001$, $n$=36, $p=.97$. For the abusive group, 44.4% were correctly classified in the abusive group, and for the comparison group, 55.6% were correctly predicted to be in the comparison group. Table 14 presents the odds ratios, which suggest that the odds ratio of estimating abuse status correctly improves by 0.3% if the CRI scores are known. Stated another way, the final model predicted 50.0% of the correct group ($\beta=.003$, $p=.97$).

# IV. DISCUSSION

The purpose of this study was to evaluate the validity of the CRI with abusive and nonabusive dyads. Limited support for construct validity of the CRI was found with the abusive parents, but no support for construct validity of the CRI was found with the comparison parents. Further, no evidence for treatment validity of the CRI was found in the abusive sample. Overall, the present study suggests that the CRI may have differential utility depending on the sample assessed with the measure.

The first hypothesis was that for both the abusive and nonabusive dyads examined together and separately, evidence for exploratory construct validity of the CRI would be provided by a strong relation between the measure and the BASC Externalizing Composite and the DPICS-II composite categories. Specifically, the CRI scores were expected to be significantly correlated with the BASC Externalizing Composite. This hypothesis was supported both in the total sample and in the abusive group where the BASC Externalizing Composite scores were significantly related to tolerance levels. However, no significant correlation was found between the CRI scores and the BASC Externalizing Composite in the comparison group which is consistent with previous research (Brestan et al., 2003). Specifically, Brestan and colleagues (2003) found that in a nonabusive sample, the CRI did not predict ECBI Intensity scores, which are parental ratings of the severity of problem behaviors. Both studies found that in nonabusive dyads, the CRI scores are not related to reported child behavior problems.

The BASC Externalizing Composite scores were significantly higher, and in the at-risk range of clinical significance, in the abusive group compared to the nonabusive group where scores were in the normal range. Interestingly, the physically abusive parents in the present study reported that their children exhibited more behavioral problems than the comparison group, while the two groups reported comparable levels of tolerance for child misbehavior.

The finding that abusive parents reported higher amounts of child externalizing behavior problems compared to nonabusive parents is consistent with previous research (e.g., Milner et al., 1990; Trickett & Kuczynski, 1986; Walker, Downey, & Bergman, 1989; Whipple & Webster-Stratton, 1991). However, the finding of the present study that abusive and comparison parents reported similar levels of tolerance for child misbehavior was unexpected because it is the opposite of findings from other research. Specifically, Azar (1997) reported that abusive parents were less tolerant of child problems when compared to parents with no history of engaging in child physical abuse. Additionally, Reid and colleagues (1987) found that parents with a history of physically abusing their children tend to have lower tolerance for children's disruptive behaviors. The abusive parents from the present study were court-ordered to attend treatment so it is possible that they engaged in a socially-desirable response set on the CRI. Further, research suggests that abusive parents have inaccurate perceptions of their children's behaviors (e.g., Frodi & Lamb, 1980; Milner & Chilamkurti, 1991; Newberger & Cook, 1983) and the disconnect between the BASC externalizing scores and DPICS inappropriate child scores in this study support this notion.

Milner (1993) developed a four-part social information processing model in an attempt to understand parental cognitions related to physical child abuse. Stage 1 of the model posits that maltreating parents have distorted and biased perceptions of their child's behavior when compared to nonmaltreating parents. It also hypothesized that as stress increases, the accuracy of perceptions decreases. Milner's (1993) review of studies evaluating the relationship between parental perceptions and child physical abuse showed perceptual differences between abusive and nonabusive parents. However, it was not clear whether the perceptual differences were due to perceptual problems as described in Stage 1 or another stage of the social processing model. Stage 2 of the model posits that abusive parents show different interpretations, evaluations, and expectations of their children's behavior compared to nonabusive parents. Stage 3 hypothesizes that maltreating parents do not integrate situational information, which influences response selection. Moreover, higher stress levels are expected to decrease the chances that parents will use situational information. It is suggested in Stage 4 of the model that abusive parents fail to adequately implement parenting skills and then fail to monitor and modify parent behavior. Based on literature reviews, overall support for the stages in the social information processing model was found, although the conclusions of many studies failed to fit neatly into the separate stages. Findings from the present study appear to support Stages 1 and 2 of Milner's (1993) social information processing model.

It was expected that the CRI scores would be significantly related to the DPICS-II Parent Prosocial Behavior composite, with higher CRI scores being related to fewer positive parent behaviors for both the abusive and nonabusive dyads examined together and separately. No significant correlations were found for the total sample or either

group. The abusive parents in this sample tended to exhibit fewer prosocial behaviors such as describing the child's behavior, reflecting statements made by their child, and praising compared to nonabusive parents; however, this difference was not statistically significant. Other observational studies have demonstrated that physically abusive mothers exhibit fewer verbal and physical interactions and fewer overall positive interactions with their children (Burgess & Conger, 1977; 1978; Kavanagh, Youngblade, Reid, & Fagot, 1988; Lahey et al., 1984).

One possible reason for the discrepancy between the finding of the present study and that of the other research concerns the examination of abusive mothers and fathers separately and together. For instance, when Burgess and Conger (1978) examined mothers and fathers separately, differences in parenting behaviors between abusive mothers and abusive fathers emerged. Specifically, abusive mothers were significantly less positive and exhibited fewer verbal interactions with their children compared to nonabusive mothers, while abusive fathers had slightly fewer, yet similar rates of positive behaviors and verbal interactions compared to nonabusive fathers. Lahey and colleagues (1984) only examined mothers, so mother/father comparisons were not possible. Mother/father evaluations used by Burgess and Conger were not possible in the present study due to the small number of comparison fathers, although such evaluations may have led to more conclusive results. Another possible reason for differences in results between the present study and previous research is that children in the other studies were significantly younger (median age=6.5 in Burgess & Conger, 1978; age range=3 to 11 and mean age range=6.7 to 6.9 in Kavanagh et al., 1988; mean age=5.77 to 6.22 in Lahey et al., 1984) than children in the present study. Differences in positive parenting

behaviors may be more pronounced in interactions between maltreating parents and younger children compared to maltreating parents and older children.

It was predicted that the CRI scores would be significantly correlated with the DPICS-II Parent Inappropriate Behavior composite. Higher CRI scores (or lower tolerance levels) were expected to be related a greater number of inappropriate parent behaviors for both the abusive and nonabusive dyads examined together and separately. However, no significant correlations between the CRI and the DPICS-II Parent Inappropriate Behavior composite were found. While this hypothesis was not supported, the abusive parents displayed a significantly higher number of inappropriate behaviors compared to the comparison parents. It appears that the abusive parents exhibited more negative behaviors when interacting with their children compared to nonabusive parents, which is consistent with previous research. Specifically, research suggests that physically abusive mothers are more negative when interacting with their children (Burgess and Conger, 1977; 1978; Lahey et al., 1984) and use more threats and negative physical contact (Cerezo & D'Ocon, 1995; Cerezo, D'Ocon, & Dolz, 1996) compared to nonabusive mothers.

It was predicted that in the abusive and nonabusive dyads examined together and separately, the CRI scores would be significantly related to the DPICS-II Child Inappropriate Behavior composite. Higher CRI scores, or reports of lower tolerance of child misbehavior, were expected to be correlated with more frequent inappropriate child behaviors. No significant correlations were found in the total sample or either group, and no significant group differences in inappropriate or negative child behaviors were found. Although the hypothesis predicting a significant relationship between the CRI and

observed inappropriate child behavior was not supported, the similarity between the abuse and comparison children's observed behavior is noteworthy. Other researchers have found similar results (Azar & Sigel, 1990; Milner et al., 1990; Reid et al., 1987), lending further support to the notion that abusive parents have distorted perceptions of their child's behavior.

It is likely that these distorted views of child behavior lead or contribute to physically abusive behaviors. In addition, the abusive parents in the present study exhibited more inappropriate behaviors such as being critical, physically negative, not answering their children's questions, and making sarcastic remarks when compared to nonabusive parents. These findings are similar to those of other researchers (Burgess & Conger, 1977; 1978; Cerezo & D'Ocon, 1995; Cerezo et al., 1996; Lahey et al., 1984) and provide guidance for the type of parenting skills to target during interventions with abusive and high-risk dyads. Abusive parents may benefit from learning to replace negative verbal behaviors such as criticizing, with positive verbal behaviors, such as praising. In addition, cognitive behavioral therapy addressing cognitive distortions and misperceptions about childrearing may be a powerful addition to treatment with abusive parents.

The second hypothesis that the parental reports of child misbehavior and behavioral data from observations of an interaction between the parent and child in the abusive and comparison dyads examined together would predict the CRI scores to demonstrate exploratory construct validity was not supported. The multiple regression model with all study and demographic variables did not significantly predict CRI scores in the total sample. A second multiple regression conducted using the variables that

approached significance was not significant. In both models, the BASC Externalizing Composite was the most important predictor of CRI scores, likely because of the significant correlation found between these two variables.

One confound of the two samples was the age range for each group. The comparison sample used included children between 8 and 12 years of age while the abuse sample included children from 4 to 12 years of age. One previous study has found age to be an important predictor of parent tolerance, with increasing age predicting lower parental tolerance for child misbehavior (Brestan et al., 2003). To add control for the age difference in the two samples, the correlational and independent *t*-test analyses were also conducted with abusive parents whose children were 8 to 12 years old. Similar to results for the entire abusive sample, the only significant correlation was between the CRI scores and the BASC Externalizing Composite scores for the abuse group. Much like analyses conducted with the entire abuse sample, the BASC Externalizing scores for the abuse group were significantly higher than the BASC Externalizing scores for the comparison group. However, no difference between the abusive and nonabusive parent inappropriate behaviors was found for the 8 to 12 year old groups. This finding suggests that physically abusive parents exhibit fewer negative behaviors as their children get older, perhaps because older children do not have the same behavioral and developmental challenges as younger children. No other significant differences on the CRI scores or the DPICS-II composites were found between the abuse and comparison groups.

A number of factors could be related to the mixed support for the construct validity hypotheses. It is possible that more significant correlations would have been found between the CRI and BASC Externalizing Composite for both the abusive and

comparison groups if the individual subscales of the Externalizing Composite (Aggression, Hyperactivity, and Conduct Problems) were used. Other composites and subscales of the BASC such as the Internalizing or Adaptive Behavior Composites and the Anxiety or Withdrawn subscales may also provide more information about the construct of parental tolerance for child misbehavior. Thus, future research should evaluate the relationship between the CRI and these various composites and subscales.

The DPICS-II composites formed in the present study were summed across the Child-Directed Interaction (CDI), Parent-Directed Interaction (PDI), and Clean-Up (CU) situations because it was assumed that parent tolerance for various child behaviors would remain relatively consistent across situations. However, it is possible that parent and child behaviors differed significantly across these situations and that the CRI would be differentially related to the DPICS-II parent and child behavior composites in certain observational situations. For instance, physically abusive parents may exhibit more inappropriate behaviors during the CU situation when they are expected to give commands and assess compliance from their children. Future research should examine the relationship between the CRI and the DPICS-II composites separately for each of the situations.

There are many possible reasons that the CRI did not correlate significantly with the BASC Externalizing Composite or the DPICS-II composites for the nonabusive dyads aside from a lack of relationship between constructs. First, the children in the comparison sample were 8 to 12 years old, and it is possible that as children grow older, parental tolerance for misbehavior decreases. The initial validation study of the CRI was conducted with children ages 3 to 10 and it was found that as the child's age increased,

parental tolerance for misbehavior decreased (Brestan et al., 2003), so different norms may apply to older children. The mean CRI score for the original study was 30.87 (*SD*=4.95) which indicates more tolerance for misbehavior than the mean scores of 31.19 (*SD*=5.08) and 31.33 (*SD*=3.76) obtained from the abuse and comparison samples in this study. Future investigations should attempt to develop normative CRI scores based on child age.

Second, the CRI did not predict and was not significantly correlated with the ECBI Intensity Scale in the Brestan et al. (2003) study. It is possible that the parent reports of child behavior and parent tolerance for child misbehaviors are not as strongly related in comparison samples. Third, in the present study the comparison sample size was relatively small (*n*=45) so there may not have been enough power to achieve statistical significance. Fourth, the initial validation study obtained reports of parental tolerance for child misbehavior only from mothers and the current study included reports from both mothers and fathers. It is possible that mothers and fathers have different levels of tolerance for child misbehavior. Future studies should attempt to examine tolerance differences between mothers and fathers. Fifth, the comparison dyads were relatively homogenous in that a large range of child misbehavior was not reported and the majority of the sample was well-educated. The discrepancy between the socioeconomic status of the abusive and comparison families in the present study may impact results of the present study because other researchers have found that as socioeconomic status increases and thus, the stresses of poverty decrease, enjoyment of the parenting role increases in comparison families but remains the same in abusive families (Trickett, Aber, Carlson, & Ciccheti, 1991). Future studies should attempt to gather normative data

on the CRI with families from a wide range of educational and socioeconomic backgrounds in order to correct for the homogeneity found in the comparison sample from the present study.

Sixth, some parents may be intolerant of child behavior, independent of the child's actual behavior, or it is possible that parents from higher socioeconomic backgrounds have higher expectations for the behavior of their children. A final possible reason that significant correlations were not found with the comparison sample is that the CRI may not be a sensitive measure of parental tolerance for child misbehavior in typical families. However, more research is warranted before this conclusion can be drawn.

The third hypothesis was that the CRI scores would decrease significantly, indicating higher tolerance for children's behaviors, from pre- to post-treatment in the abusive dyads. Although statistical levels approached significance ($p$=.08), this hypothesis was not supported, which suggests that either the CRI was not a sensitive measure of treatment change for parents with a history of physically abusing their children or that there was not enough statistical power with only 34 treatment completers. It is possible that the abusive parents completed the CRI with a fake good response set at the beginning of treatment, and then responded more truthfully at the end of treatment. However, it is also possible that whether accurate or inaccurate, parent perceptions of child behavior did not change at the conclusion of treatment. In any case, without a no-treatment control group, it is difficult to evaluate the impact of treatment validity on the CRI. In addition, another limitation is that the three treatment groups are represented in the post-treatment sample. Future study could assess the PCIT group alone, since Chaffin and colleagues (2004) found that the PCIT group had significantly more positive

changes on most measures when compared to the two other treatment groups.

The final hypothesis that the CRI scores would predict abuse status was not supported. Indeed, the reported tolerance levels for child misbehavior were almost identical in the abusive and comparison dyads. It is possible that the abusive parents attempted to portray themselves more positively or as more tolerant of their children's misbehavior, as they were court-ordered to attend treatment. The abusive parents also portrayed their children as having high amounts of externalizing behavior difficulties, which suggests that abusive parents were attempting to justify their discipline strategies with their "difficult" children, which is similar to other research findings (Milner, 1993). Another possible reason for the similar scores between the abusive and comparison dyads is that, as mentioned before, the scores from the comparison families may reflect typical tolerance levels for the 8 to 12 year old age range. The comparison parents of children ages 8 to 12 had a slightly higher average CRI total score ($M$=31.33, $SD$=3.76) compared to the initial standardization sample with children ages 3 to 10 ($M$=30.78, $SD$=4.95) so it is possible that a comparison sample including children ages 4 to 12 would have different scores from the abusive sample. One would expect typical parents to have higher tolerance for a 3 year old child's misbehavior and lower tolerance for the same behavior in a 12 year old child. One would also expect that physically abusive parents would have lower tolerance for child misbehavior when compared to nonabusive parents; however, this was not supported in the present study.

More validation studies with the CRI are needed. Comparisons with other measures of parental tolerance for child misbehavior should be conducted to help establish the concurrent validity of the CRI. Since relatively few measures of parental

tolerance exist, other measures purported to examine this construct should be devised. For instance, parental reports of child misbehavior combined with actual observational data of child behavior may provide an index of parental tolerance that could be compared to the CRI. Such an index would combine parental perceptions with objective behavioral observations and would presumably be a more accurate measure of parental tolerance of child misbehavior.

The significant differences found in the demographic variables between the abusive and nonabusive dyads represents the major limitation of the present study. Another limitation is that both groups contained small sample sizes. Missing data due to equipment failure and treatment dropout also limit the findings of the present study. However, collecting treatment outcome data for a child maltreatment population is extremely costly in terms of time and money. The coding of behavioral observation data alone demands a great deal of research time. Efforts were made to collect an equivalent comparison sample, although almost all demographic variables varied across the samples. This is a methodological problem that plagues most child maltreatment studies.

In summary, the CRI scores significantly correlated with the BASC Externalizing Composite scores in the total sample and in the abusive group, as hypothesized. However, the hypotheses that significant correlations would be found between the CRI and the behavioral observation data in the total sample and in the abusive group were not supported. In addition, the hypotheses that significant relationships would be found between the CRI and parental reports of child misbehavior and between the CRI and behavioral observations were not supported in the comparison group. In the multiple regression analyses, no models of certain variables predicting the CRI were found. The

CRI scores did not significantly decrease from pre- to post-treatment in the abusive sample, indicating the abusive parents' tolerance levels for child misbehavior did not change at the conclusion of treatment. Finally, the CRI scores did not predict abuse status as hypothesized. Overall, evidence for treatment validity and construct validity of the CRI was not found.

Future studies could test Milner's (1993) social information processing theory in order to address the link between tolerance and cognitive components related to parenting, especially abusive parenting. As suggested by Dix (1991) and Disbrow, Doerr, and Caulfield (1977), the relationship between abusive parenting and the expression of negative affect warrant further investigation. Finally, the link between empathy and physically abusive behaviors toward children discussed by Miller and Eisenberg (1988) may provide more information about abusive parenting that could lead to improved parenting interventions.

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Table 1

*Sample Characteristics*

| Variable | Abused (n=86) | Comparison (n=45) | *t* | $\chi^2$ |
|---|---|---|---|---|
| Child Gender | 42 female | 15 female | -- | 12.79** |
| | 44 male | 30 male | -- | 2.65 |
| Mean Child Age (in years) | 8.02 | 10.37 | -5.19** | -- |
| Standard Deviation | 2.87 | 1.34 | | |
| Parent Gender | 56 female | 38 female | -- | 3.45 |
| | 30 male | 7 male | -- | 14.30** |
| Mean Parent Age (in years) | 31.65 | 39.34 | -5.29** | -- |
| Standard Deviation | 8.39 | 6.86 | | |
| Ethnicity | | | | |
| African American | 39 | 8 | -- | 20.45** |
| Caucasian | 47 | 37 | -- | 1.19 |
| Marital Status | | | | |
| Single | 35 | 5 | -- | 22.50** |
| Married | 26 | 32 | -- | .621 |
| Divorced | 18 | 8 | -- | 3.85* |
| Other | 6 | 0 | -- | -- |
| Types of Education [a] | | | | |
| <9 | 5 | * | -- | -- |
| <12 | 16 | * | -- | -- |
| GED | 9 | * | -- | -- |
| High School Diploma | 16 | * | -- | -- |
| Vo/Tech School | 16 | * | -- | -- |
| Some College | 19 | * | -- | -- |
| College | 3 | * | -- | -- |
| Years of Education | | | | |
| 12 | * | 4 | -- | -- |
| 13 | * | 4 | -- | -- |
| 14 | * | 9 | -- | -- |
| 15 | * | 5 | -- | -- |
| 16 | * | 13 | -- | -- |
| 18 | * | 6 | -- | -- |
| 19 | * | 1 | -- | -- |

Table 1—continued

| Variable | Abused (n=86) | Comparison (n=45) | *t* | $\chi^2$ |
|---|---|---|---|---|
| Years of Education (cont.) | | | | |
| 20 | * | 3 | -- | -- |
| KBIT IQ Composite (Mean) | | | | |
| Child Score | 93.57 | 111.49 | -6.98* | -- |
| Standard Deviation | 14.65 | 12.50 | | |
| Parent Score [b] | 94.88 | 108.54 | -7.57** | -- |
| Standard Deviation | 10.30 | 8.19 | | |

*Note.* $t$=*t*-test statistic. $\chi^2$=nonparametric chi-square statistic.

[a] Education data was collected using different methods for the two samples. Frequency counts for type of education are listed for the abused group, while frequency counts for the number of years of education are listed for the comparison group.

[b] Data are missing for two parents.

*=Data not available.

*$p$=.05. ** $p$ <.001.

Table 2

*Matched Sample Characteristics*

| Variable | Abused (n=18) | Nonabused (n=18) | *t* | $\chi^2$ |
|---|---|---|---|---|
| Child Gender | 7 female | 7 female | -- | .00 |
| | 11 male | 11 male | -- | .00 |
| Mean Child Age (in years) | 9.94 | 9.94 | .02 | -- |
| Standard Deviation | 1.83 | 1.33 | | |
| Parent Gender | 12 female | 12 female | -- | .00 |
| | 6 male | 6 male | -- | .00 |
| Mean Parent Age (in years) | 33.56 | 36.64 | -1.21 | -- |
| Standard Deviation | 7.22 | 8.03 | | |
| Ethnicity | | | | |
| African American | 5 | 5 | -- | .00 |
| Caucasian | 13 | 13 | -- | .00 |
| Marital Status | | | | |
| Single | 4 | 3 | -- | .14 |
| Married | 6 | 9 | -- | .60 |
| Separated/Divorced | 7 | 6 | -- | .07 |
| Other | 1 | 0 | -- | -- |
| Types of Education [a] | | | | |
| <9 | 1 | * | -- | -- |
| <12 | 2 | * | -- | -- |
| High School Diploma | 4 | * | -- | -- |
| Vo/Tech School | 6 | * | -- | -- |
| Some College | 3 | * | -- | -- |
| College | 1 | * | -- | -- |
| Unknown | 1 | * | -- | -- |
| Years of Education | | | | |
| 12 | * | 1 | -- | -- |
| 13 | * | 3 | -- | -- |
| 14 | * | 4 | -- | -- |
| 15 | * | 4 | -- | -- |
| 16 | * | 4 | -- | -- |
| 18 | * | 2 | -- | -- |

Table 2—continued

| Variable | Abused (n=18) | Nonabused (n=18) | *t* | $\chi^2$ |
|---|---|---|---|---|
| KBIT IQ Composite (Mean) | | | | |
| Child Score | 96.00 | 106.22 | -1.91 | -- |
| Standard Deviation | 16.35 | 15.69 | | |
| Parent Score [b] | 96.17 | 107.06 | -3.84* | -- |
| Standard Deviation | 8.58 | 7.90 | | |

*Note.* $t$=*t*-test statistic. $\chi^2$=nonparametric chi-square statistic.

[a] Education data was collected using different methods for the two samples. Type of education is listed for the abused group, while the number of years of education is listed for the nonabused group.

[b] Data are missing for two parents.

*=Data not available.

* $p < .05$

Table 3

*Demographics of Abusive Dyads With and Without Post-treatment CRI Data*

| | Post CRI (n=34) | No Post CRI (n=43) | *t* | $\chi^2$ |
|---|---|---|---|---|
| Child Gender | 16 female | 22 female | -- | .95 |
| | 18 male | 21 male | -- | .23 |
| Mean Child Age (Mean, *SD*) [a] | 8.50 (2.79) | 8.26 (2.58) | .39 | |
| Parent Gender | 21 female | 29 female | -- | 1.28 |
| | 13 male | 14 male | -- | .04 |
| Mean Parent Age (Mean, *SD*) | 33.12 (7.89) | 30.53 (8.24) | 1.39 | -- |
| Ethnicity | | | | |
| African American | 15 | 22 | -- | 1.32 |
| Caucasian | 19 | 21 | -- | .10 |
| Marital Status | | | | |
| Single | 11 | 21 | -- | 3.13 |
| Married | 15 | 8 | -- | 2.13 |
| Separated/Divorced | 7 | 9 | -- | .25 |
| Other | 1 | 5 | -- | 2.67 |
| Types of Education [b] | # | | | |
| <9 | 2 | 3 | -- | .20 |
| <12 | 3 | 11 | -- | 4.57* |
| GED | 5 | 4 | -- | .11 |
| High School Diploma | 5 | 8 | -- | .69 |
| Vo/Tech School | 8 | 6 | -- | .29 |
| Some College | 7 | 10 | -- | .53 |
| College | 3 | 0 | -- | -- |
| KBIT IQ Composite (Mean, *SD*) | | | | |
| Child Score | 93.64 (14.00) | 93.77 (14.60) | -.04 | -- |
| Parent Score | 97.06 (8.84) | 92.86 (11.07) | 1.80 | -- |

*Note.* *t*=*t*-test statistic. $\chi^2$=nonparametric chi-square statistic.

[a] Data are missing for one child. [b] Data are missing for one adult.

*$p$<.05

Table 4

*Categories of the Dyadic Parent-Child Interaction Coding System II (DPICS-II)*

| Parent Behavior | Child Behavior |
|---|---|
| Acknowledgement | Acknowledgement |
| Answer | Answer |
| Behavioral Description | Behavioral Description |
| Compliance | Compliance |
| Contingent Labeled Praise | |
| Criticism | Criticism |
| Descriptive/Reflective Question | Descriptive/Reflective Question |
| Destructive | Destructive |
| Direct Command | Direct Command |
| Indirect Command | Indirect Command |
| Information Description | Information Description |
| Information Question | Information Question |
| Labeled Praise | Labeled Praise |
| Laugh | Laugh |
| No Answer | No Answer |
| No Opportunity for Answer | No Opportunity for Answer |
| No Opportunity for Compliance | No Opportunity for Compliance |
| Noncompliance | Noncompliance |
| Physical Negative | Physical Negative |

Table 4—continued

| Parent Behavior | Child Behavior |
|---|---|
| Physical Positive | Physical Positive |
| Play Talk | Play Talk |
| Reflective Statements | Reflective Statements |
| Smart Talk | Smart Talk |
| Unlabeled Praise | Unlabeled Praise |
| Yell | Yell |
| Whine | Whine |
| Warning | |

Table 5

*Summary of DPICS-II Categories*

1. Acknowledgement (AK)—a brief verbal response that indicates attention to verbal or nonverbal behavior of either person in the dyad, but does not describe or evaluate the behavior.

2. Information Description (ID)—a declarative sentence that gives an account of people, the play, or events that does not clearly describe the other member of the dyad's current or immediately completed behavior.

3. Behavioral Description (BD)—a declarative sentence where the subject is the other member of the dyad and the verb describes the other person's verbal or nonverbal observable behavior.

4. Reflective Statement (RF)—a declarative statement that immediately repeats the other person's verbalization.

5. Descriptive/Reflective Questions (DQ)—a descriptive or reflective comment or acknowledgement expressed in a question form. Requires only a simple acknowledgement in response (i.e., "yes" or "no" response).

6. Information Questions (IQ)—questions that require specific information from the other person other than a simple acknowledgement.

7. Unlabeled Praise (UP)—a verbalization that expressed a nonspecific favorable judgment of the other person/self, an attribute of the other/self, or a nonspecific activity or product of the other/self.

8. Labeled Praise (LP)—a verbalization that expresses a favorable judgment upon a specific activity or product of the other member of the dyad or the speaker.

9. Contingent Labeled Praise (CP)*[1]—when the parent issues a labeled praise in response to the child's compliance to a command.

10. Indirect Command (IC)—an order, demand, or direction for a behavioral response that is implied, nonspecific, or stated in a question form.

11. Direct Command (DC)—a clearly stated order, demand, or direction in a declarative form which is sufficiently specific as to indicate the behavior that is expected from the other person.

12. Criticism (CR)—a verbal expression of disapproval of the other person, and/or the other's attributes, activities, products, or choices.

13. Smart Talk (ST)—sassy, sarcastic speech, rude, or impudent speech.

Table 5—continued

14. Play Talk (PT)—any verbalization given as part of "pretend talk," where the speaker is talking as a toy or character other than him/herself.

15. Laugh (LA)—any chuckling or laughing that is not associated with any teasing or taunting behavior.

16. Whine (WH)—words uttered in a slurring, nasal, high-pitched, falsetto tone, clearly distinct from the normal tone of the speaker's verbalizations.

17. Yell (YE)—a loud screech, scream, shout, or loud crying that is clearly above the intensity of the speaker's normal speech volume.

18. Physical Positive (PP)—any touching of the other person that is neutral or positive.

19. Destructive (DS)—any action that destroys, damages, or attempts to damage any object.

20. Physical Negative (PN)—any touching of the other person that attempts to restrain or inflict pain.

21. Compliance (CO)—when the person obeys, begins to obey, or attempts to obey a direct or indirect command given by the other person.

22. Noncompliance (NC)—when the person does not obey a direct or indirect command given by the other person within 5 seconds.

23. No Opportunity for Compliance (NOC)—when the person is not given adequate chance to comply to a command issued by the other member of the dyad.

24. Answer (AN)—when the person answers, starts to answer, or tries to answer an information question posed by the other member of the dyad.

25. No Answer (NA)—when the person does not answer the other person's information question within 5 seconds either by giving no response or by giving a rude, sassy, or deliberately false response.

26. No Opportunity for Answer (NOA)—when the person is not given an adequate chance to respond to an information question issued by the other member of the dyad.

27. Warning (W)*[1]—when the parent issues a statement following a command indicating that the child will be placed in time out following further noncompliance to the command.

Table 5—continued

| | |
|---|---|
| 28. | No Code (NCD)[2]—used to designate verbalizations that are incomplete, noises that are not coded part as play talk, or other verbalizations that do not fit into other categories. |

*Note.* *These categories are coded for parents only.

[1] Not included in the study because this is a low frequency code in families who have not participated in PCIT and all data for maltreating families were pre-treatment.

[2] Not a true DPICS or DPICS II category. Created only to aid in coding.

*Note*: Because the DPICS II categories are reflexive, the following list of categories applies to both parent and child behavior.

Table 6

*DPICS-II Prosocial and Inappropriate Composites for Parents*

| Prosocial Composite | Inappropriate Composite |
|---|---|
| Description (Behavioral and Information) | Criticism |
| Reflective Statements | Physical Negative |
| Praise (Labeled, Unlabeled) | No Answer |
| Physical Positive | Smart Talk |

Table 7

*DPICS-II Inappropriate Composite for Children*

| Inappropriate Composite |
| --- |
| Yell |
| Whine |
| Destructive |
| Physical Negative |
| No Answer |
| Noncompliance |
| Smart Talk |

Table 8

*DPICS-II Kappa Reliability Estimates*

| | Parent Codes Kappa | Child Codes Kappa | Overall Kappa |
|---|---|---|---|
| Nonabused (*n*=44) | | | |
| Mean | .85 | .82 | .84 |
| Standard Deviation | .08 | .08 | .07 |
| Matched Abused (*n*=18) | | | |
| Mean | .86 | .84 | .86 |
| Standard Deviation | .08 | .09 | .06 |

*Note.* Kappa estimates were calculated using a computer program developed by Jang (2003).

Table 9

*Correlations between the CRI, the BASC Externalizing Composite and the DPICS-II Composites for the Total Sample*

| | CRI Total [a] |
|---|---|
| BASC Externalizing [a] | .23* |
| DPICS-II Parent Prosocial [b] | -.06 |
| DPICS-II Parent Inappropriate [b] | .02 |
| DPICS-II Child Inappropriate [b] | -.03 |

*Note.* *$p$<.05

[a] $n$=131.

[b] $n$=110.

Table 10

*Mean Measure Scores for Abused and Nonabused Groups*

| Measure | Abused | | Nonabused | | *t* |
|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | |
| CRI Total[a] | 31.19 | 5.08 | 31.33 | 3.76 | -.17 |
| BASC Externalizing[a] | 61.72 | 17.27 | 50.98 | 8.75 | 3.91** |
| DPICS-II Parent Prosocial[b] | 65.59 | 30.03 | 67.59 | 24.64 | -.37 |
| DPICS-II Parent Inappropriate[b] | 11.62 | 9.51 | 6.98 | 5.09 | 2.97* |
| DPICS-II Child Inappropriate[b] | 6.64 | 7.42 | 6.86 | 9.39 | -.14 |

*Note.* $t$=*t*-test statistic.

[a] Abused $n$=86, Nonabused $n$=45.

[b] Abused $n$=66, Nonabused $n$=44.

*$p$<.005. **$p$ <.001

Table 11

*Simultaneous Multiple Regression Analysis Summary for All Variables Predicting the CRI (N=106)*

| Variable | B | *β* | *t* | *p* |
|---|---|---|---|---|
| BASC Externalizing | .07 | .24 | 2.04 | .04 |
| DPICS Parent Prosocial | -.00 | -.01 | -.09 | .93 |
| DPICS Parent Inappropriate | .04 | .08 | .62 | .54 |
| DPICS Child Inappropriate | -.07 | -.13 | -1.03 | .31 |
| Parent Gender | -.07 | .01 | .06 | .95 |
| Parent Age | -.08 | -.13 | -1.03 | .31 |
| Child Gender | 1.32 | .14 | 1.32 | .19 |
| Child Age | .10 | .05 | .42 | .68 |
| Marital Status | .63 | .11 | 1.04 | .30 |
| Race | .55 | .06 | .47 | .64 |
| Parent KBIT IQ | -.01 | -.03 | -.16 | .87 |
| Child KBIT IQ | .05 | .19 | 1.34 | .19 |
| Group Status | .38 | .04 | .26 | .80 |
| Constant | 19.97 | | 2.95 | .00 |

*Note.* $R^2$=.13, Adjusted $R^2$=.001, $F(13, 92)=1.01$, $p$=.45

Table 12

*Multiple Regression Analysis Summary for the BASC Externalizing Composite, the DPICS-II Child Inappropriate Behavior Composite, Parent Age, Child Gender, Marital Status, and Child Intelligence Predicting the CRI (N=109)*

| Variable | B | *β* | *t* | *p* |
|---|---|---|---|---|
| BASC Externalizing | .07 | .23 | 2.41 | .02 |
| DPICS Child Inappropriate | -.06 | -.10 | -1.05 | .30 |
| Parent Age | -.07 | -.12 | -1.20 | .24 |
| Child Gender | 1.19 | .13 | 1.36 | .18 |
| Marital Status | .53 | .10 | 1.01 | .32 |
| Child KBIT IQ | .05 | .17 | 1.71 | .09 |
| Constant | 22.30 | | 6.27 | .00 |

*Note.* $R^2$=.11, Adjusted $R^2$=.06, $F(6, 102)$=2.11, $p$=.06

Table 13

*Pre- and Post-treatment CRI Scores from 34 Treatment Completers*

| | Pre-treatment | | Post-treatment | | *t* | *p* |
|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | | |
| CRI Total | 31.59 | 4.87 | 30.24 | 5.61 | 1.82 | .08 |

Table 14

*Logistic Regression Predicting Abuse Status in the Matched Sample (N=36)*

| Variable | *β* | *SE* | Odds Ratio | *p* |
|---|---|---|---|---|
| CRI Total | .003 | .07 | 1.003 | .97 |
| Constant | -.09 | 2.43 | .91 | .97 |