

PREDICTING CHILD ABUSE POTENTIAL FROM THE MMPI-2-RF HIGHER
ORDER SCALES AND THE ASEBA WITHIN A SAMPLE OF CARE GIVERS
REFERRED FOR EVALUATION

A thesis presented to the faculty of the Graduate School of Western Carolina University
in partial fulfillment of the requirements for the degree of Master of Arts in Psychology.

By

Valerie Joyce Russell

Director: Dr. Kia K. Asberg
Assistant Professor of Psychology
Psychology Department

Committee Members: Dr. David M. McCord, Psychology
Dr. L. Alvin Malesky, Psychology

March 2012

ACKNOWLEDGEMENTS

I would like to thank my committee for their support through this process, including Dr. David McCord, Dr. Alvin Malesky, and especially my thesis chair, Dr. Kia Asberg, for all of her guidance and encouragement. I also appreciate the help I received from my colleagues at Western Carolina University. More specifically, I appreciate Brittni Morgan who allowed me access to her data, as well as the hard work of Dr. William Moon in conducting the psychiatric evaluations of the participants in this study. Finally, I would like to thank my wonderful family and loving fiancé for their inspiration and for always pushing me to do my best.

TABLE OF CONTENTS

	Page
List of Tables	iv
List of Abbreviations	v
Abstract	vi
Chapter One: Introduction	1
Chapter Two: Literature Review	4
Outcomes Following Child Abuse.....	4
Predictors of Child Abuse Potential.....	6
Statement of the Problem.....	11
Chapter Three: Method	14
Participants.....	14
Measures	15
Child Abuse Potential	16
Personality.....	18
Psychological Functioning.....	19
Hypotheses.....	20
Summary of Scales Used in Analyses	21
Primary Statistical Analyses	22
Secondary Analyses and Group Designation.....	23
Rationale for Group Designation	23
Chapter Four: Results	25
Results for Secondary Analyses.....	28
Chapter Five: Discussion	29
Discussion of Secondary Analyses	31
Limitations of the Present Study	31
References.....	33
Appendices.....	43
Appendix A: Examples of CAP Clinical Scale Items.....	44
Appendix B: Sample MMPI-2-RF Profile.....	45
Appendix C: Sample ASEBA-ASR Form	46

LIST OF TABLES

Table	Page
1. Sample Demographics	15
2. Descriptive Statistics.....	25
3. Results of Higher vs. Lower Risk T-Tests.....	26
4. Results of Gender T-Tests	26
5. Results of Bivariate Correlation.....	27
6. Results of Multiple Regression.....	28

LIST OF ABBREVIATIONS

Abbreviation	Terminology
ASEBA	Achenbach System of Empirically Based Assessment
BXD	Behavioral/Externalizing Dysfunction
CAP	Child Abuse Potential Inventory
CPS	Child and Protective Services
EID	Emotional/Internalizing Dysfunction
LOC	Locus of control
MMPI-2-RF	Minnesota Multiphasic Personality Inventory – Second Edition, Restructured Form
THD	Thought Dysfunction

ABSTRACT

PREDICTING CHILD ABUSE POTENTIAL FROM THE MMPI-2-RF HIGHER ORDER SCALES AND THE ASEBA WITHIN A SAMPLE OF CARE GIVERS REFERRED FOR EVALUATION

Valerie J. Russell, M. A.

Western Carolina University (March, 2012)

Director: Dr. Kia A. Asberg

The purpose of the current study is to examine the association between the higher-order scales of the Minnesota Multiphasic Personality Inventory, Second Edition, Restructured Form (MMPI-2-RF) and the DSM-oriented scales of the Achenbach System of Empirically Based Assessment (ASEBA), Adult Self-Report with physical child abuse potential, as measured by the Child Abuse Potential Inventory (CAP). Abuse and neglect has been shown to have serious and long-lasting negative effects on children's mental health. Current research has identified a variety of predictors of child abuse potential. However, no previous studies could be found that have examined the correlation between scores on the MMPI-2-RF and the ASEBA with child abuse potential. The participants were 177 parents and caregivers who were court-ordered by the Georgia Division of Family and Children Services to receive a psychiatric evaluation in north Atlanta. Results show that males and females significantly differed on several of the predictor variables, and CAP scores were significantly correlated with all of the variables except the Drug and Alcohol Use Scales. The results of a multiple regression analysis indicate

that the overall model did significantly predict CAP score [$F(10,61) = 27.50, p < .001$] with an R^2 of .844. However, only Depressive Problems ($Beta = .300, p < .05$) and Emotional/Internalizing Dysfunction ($Beta = .620, p < .001$) were significantly predictive of child abuse potential. Findings of this study suggest that depression and other emotional disorders could be used as a “red flag” when assessing child abuse potential. In addition, it may be that internalizing disorders such as depression may be more predictive of child abuse potential than externalizing disorders (e.g., substance use).

CHAPTER ONE: INTRODUCTION

Although statistics show that the incidence of child maltreatment, especially physical and sexual abuse, has been declining since the 1990s (Jones, Finkelhor, & Halter, 2006), abuse continues to be a reality for a significant number of children. For example, in the United States, the Department of Health and Human Services (2010) reported that, in 2008, there were 3.3 million reports of children being abused or neglected and 355,500 children were determined through investigations or assessments of these reports to be confirmed victims of child abuse or neglect. This number is most likely an underestimation as many cases of child abuse go unreported. Also, the secretive nature of child abuse can make it difficult to identify. In addition, many individuals are unaware of the extent of child abuse (i.e., do not know the prevalence of child abuse) or do not frequently think about child abuse (Polnay, 2001).

For example, a recent study found that 31% of professionals, including counselors, psychologists, and teachers, endorsed that they have suspected child abuse, but did not report the incident (Owhonda, 2010). In addition, an Ohio study utilizing vignettes found that teachers underreported 33% of abuse cases, whereas overreporting occurred in 4% of cases and correct identification (along with reports) were made in just over 60% of scenarios (Webster, O'Toole, O'Toole, & Liscal, 2005). Overall, teachers in this sample were more likely to underreport than overreport child abuse.

Further, Webster et al. (2005) noted that variables associated with *decreases* in underreporting included, among others, greater perceived knowledge of child abuse and “positive evaluation of the police in dealing with reports of child abuse” (p. 1291). Thus,

it is important to increase the understanding among professionals of what constitutes abuse, and what the risk factors for perpetration are, as well as improve the way that governmental agencies (including the police) are dealing with these types of reports.

Also, it has been shown that many people are less willing to report suspected abuse if the family lives in a neighborhood with a high degree of perceived “social disorder” (Gracia & Herrero, 2006). For example, feelings of mistrust and powerlessness and fear of retaliation in a neighborhood reduces the willingness of residents to report suspected child abuse.

Furthermore, although each state determines their legal definition of child abuse, many individuals are not familiar with the exact terms. Thus, the “definition” or “schema” (mental representation or template) of child abuse may vary from person to person. As a result, what may be considered child abuse to one person may seem like normative discipline to another. For example, a study of 199 university students and non-student adults found that perceptions of abuse were affected by several factors, including the relationship between victim and perpetrator, abuse type, and victim and perpetrator gender (Bornstein, Kaplan, & Perry, 2007). Similarly, Sherrill, Renk, Sims, and Culp (2011) found that undergraduate student raters’ attributions of abuse (depicted in vignettes) were significantly impacted by the age of the perpetrator in the vignette, and the gender role adherence and sexual attitudes of the rater.

Also, the definition of “reasonable suspicion” (i.e., what is needed to report abuse) concerning child abuse also varies by state, which may compromise identification and reporting of abuse. Specifically, professionals living in states with clear definitions of reasonable suspicion have been found to be more confident in reporting child abuse

than professionals living in states with vague definitions (Flieger, 1999). Further, different forms of abuse are also more difficult to identify. Physical abuse may leave marks whereas the signs from sexual and emotional often are hidden or not visible. Thus, it is imperative that state departments of family and child services have adequate measures of predicting child abuse (e.g., child abuse potential) in order to prevent further abuse from occurring in families who have been reported. Furthermore, children who are maltreated are at a greater risk of having poorer psychological adjustment relative to their non-abused counterparts (e.g., McGloin & Widom, 2001), which suggests more research is needed to better understand what factors contribute to abuse.

To that end, the present study aimed to provide a review of the literature on potential outcomes in children who have experienced abuse, the key individual and family characteristics of perpetrators that contribute to abuse, and address the need for investigations of child abuse potential (Munz, Wilson, & D'Enbeau, 2010) *within* groups of care takers that have been identified by Child Protective Services after an incident of abuse or neglect.

CHAPTER TWO: LITERATURE REVIEW

Outcomes Following Child Abuse

To better understand the importance of predicting child abuse potential among perpetrators, one must also understand and acknowledge that the effects of abuse on children are wide-ranging and often severe. The abuse of infants and toddlers has been shown to result in a heightened risk for developmental delays in adaptive behavior, cognition, and communication (Scarborough, Lloyd, & Barth, 2009). In addition, child abuse has been linked to a 50% to 60% chance of developing some form of psychopathology in adulthood (McGloin & Widom, 2001), with substance abuse being one of the most prevalent problems following maltreatment, especially physical abuse (Lo & Cheng, 2007). Another study of parents and their college-age children indicated that boys and girls who had been physically abused by their mothers or fathers, and especially by both parents, displayed more aggressive behavior (Muller & Diamond, 1999). In addition, severity of child sexual abuse predicts also the risk of involvement with the criminal justice system (i.e., arrests, incarceration; Asberg & Renk, 2012).

In addition to externalizing symptoms, child abuse has also been shown to predict internalizing symptoms, including posttraumatic symptoms, depression, and anxiety (Naar-King, Silvern, Ryan, & Sebring, 2002). For example, data from the World Mental Health Survey suggested that childhood sexual abuse is associated with lifetime mood and anxiety disorders, while childhood physical abuse is associated with lifetime anxiety disorders, and any type of abuse or maltreatment is associated with both lifetime mood- and 12-month anxiety disorders (Gal, Levav, & Gross, 2011).

Furthermore, the results of a comparison between sexually or physically abused mental-health-center clients and non-abused clients indicate that clients who were physically abused as children were significantly more likely to have auditory and tactile hallucinations, and clients who experienced any type of childhood abuse or partner aggression had significantly higher rates of hallucinations, delusions, and thought disorder relative to their non-abused counterparts (Read, Agar, Argyle, & Aderhold, 2003). Sexual, verbal, physical, and fear of physical abuse have also been correlated with obesity (Williamson, Thompson, Anda, Dietz, & Felitti, 2002). Obesity is also a mediating factor in the association between early child abuse and risk of type 2 diabetes among adult women (Rich-Edwards et al., 2010), suggesting that child abuse has far reaching negative outcomes that involve both mental and physical health.

Perhaps one of the most detrimental effects of child abuse is the greater likelihood of the abused to become abusive or violent in adolescence and adulthood (Gómez, 2011). A cycle of violence may develop that is difficult to interrupt (Parkes, 2008). Specifically, an analysis of data from the National Longitudinal Study of Adolescent Health found that adolescents who experienced violence in the form of child abuse or adolescent dating violence were 97% more likely to become perpetrators of intimate partner violence in young adulthood (Gómez, 2011). Previous experiences of childhood abuse have also been shown to be predictive of child abuse perpetration (Medley & Sachs-Ericsson, 2009). It should be noted, however, that only a small fraction of children who suffer maltreatment develop into perpetrators of abuse (Heyman & Sleps, 2002).

Overall, children who experience abuse and neglect are at a higher risk of a wide range of psychopathology and poor adjustment (Thornberry, Henry, Ireland, & Smith,

2010), but outcomes vary (Mullen, Martin, Anderson, Romans, & Herbison, 1994) depending on a variety of ameliorating circumstances (e.g., support) and individual characteristics (Banyard & Williams, 2007). Also, despite intervention by Child Protective Services, a majority of high risk families will end up back in the system, suggesting that abuse is a perpetual problem (DePanfilis & Zuravin, 1998). Thus, there is a need to better understand predictors of child abuse, and the usefulness of assessment tools that are currently available, in order to prevent the occurrence of such abuse or, in cases where abuse has occurred, to prevent re-victimization.

Predictors of Child Abuse Potential

Numerous attempts have been made by researchers to identify predictors of child abuse. On a family level, husbands' and wives' partner aggression have been found to be strongly connected with mothers' and fathers' parent aggression (Slep & O'Leary, 2005). Specifically, partner aggression has been found to be correlated with parent aggression toward children, with 45% of families reporting both parent and partner aggression, including 5% reporting *severe* parent and partner aggression. Similarly, Appel and Holden (1998) found that 40% of violent families experienced co-occurring partner and child abuse, suggesting that violence within families take many forms that can be detrimental to children.

Moreover, a study of 62 women and their children at a domestic violence shelter found that level of partner-child aggression prior to entering the shelter, level of partner-mother intimate partner violence after leaving the shelter, and frequency of contact between the children and the partners after departure each significantly predicted post

shelter partner-child aggression (McDonald, Jouriles, Rosenfield, & Corbitt-Shindler, 2011). These findings are in line with the cycle of violence described above.

Further, poor relationship quality, marital violence, and low marital satisfaction have been shown to be predictive of child abuse (Agathonos-Georgopoulou & Brown, 1997; O'Keefe, 1995), possibly by ways of increasing stress (Guterman, Lee, Taylor, & Rathouz, 2009). Also, parental happiness with the parent-child relationship, as measured by the Parent Satisfaction with Youth Survey, has been correlated with child abuse potential after controlling for social desirability (Bradshaw, Donohue, Cross, Urgelles, & Allen, 2011).

On an individual level, maternal characteristics have been shown to predict child abuse potential (Hien, Cohen, Caldeira, Flom, & Wasserman, 2010). Specifically, Hien and colleagues (2010) found that a non-clinical sample of urban mothers ($N = 152$) who reported high levels of anger arousal and reactivity, as indicated by responses to the Novaco Anger Inventory, were more likely to have a high abuse potential. The authors of the study used the definition provided by Cloitre, Koenen, Cohen, and Han (2002) that describes reactivity as “affect dysregulation,” which is characterized by “the tendency to have low threshold, high intensity emotional reactions followed by slow return to baseline” (p. 1067). A highly reactive individual becomes upset easily, is unable to calm down and self-soothe, and allows their emotions, especially anger, to control his or her behavior. In addition, parents with a high level of reactivity do not reason logically and have little control of their anger or behavior.

Also, cognitive processes such as stress, avoidant coping, irritability, and an external locus of control (LOC) have been found to be predictive of abuse potential and

disciplinary style among care takers (Rodriguez, 2010). For example, Rodriguez (2010) describes avoidant coping as a style of problem-solving that is characterized by avoidance of the problem, resignation, seeking alternative rewards, and lashing out at others, whereas approach coping involves logically analyzing the problem, seeking support and information, and taking action to evaluate different solutions. In other words, parents who use the avoidant coping style do not take positive steps to solve problematic parent-child relationships and are more likely to lash out at their children.

Similarly, parental LOC, along with ability to empathize with the child and level of frustration tolerance, has also been correlated with child physical abuse risk in a sample of mothers of children with externalizing behavior problems (McElroy & Rodriguez, 2008). LOC refers to the perceptions an individual holds regarding the cause of events that affect him or her. Parents with an external LOC believe they are not in control of parent-child interactions, whereas an internal LOC indicates that the parent feels they are in control. It may be that mothers with external LOC feel less responsible for what happens to them or believe that the child is in control of his or her misbehavior, resulting in a perceived detachment from the consequences of child maltreatment. Overall, avoidant coping and external LOC may predict a care giver's risk of engaging in child maltreatment. In addition, it has been illustrated that lower perceived social support (which is related to higher perceived stress) and a childhood history of physical abuse are significantly related to adult child abuse potential (Crouch, Milner, & Caliso, 1995).

Also, a recent study of home-based family support and child maltreatment prevention services found that intimate partner psychological aggression, depression, and substance use were risk factors for attrition in such programs (Damashek, Doughty,

Ware, & Silovsky, 2011). Such attrition is problematic because it increases the risk of re-abuse. Moreover, studies find that depressive symptoms have a direct, negative impact on effective parenting; however, trauma often co-occurs along with other factors, such as substance use and mental disorders, that have been shown to be predictive of child abuse potential (Rinehart et al., 2005). Emotional problems and insecure attachment styles have also been significantly and positively correlated with child abuse potential in a sample of domestic violence victims, with depression and anxiety as the strongest predictors (Rodriguez, 2006). Additionally, insecure attachment style in childhood has been correlated with child abuse potential in adulthood, while controlling for abuse history, in an at-risk sample of mothers raising children with behavioral problems (Rodriguez & Tucker, 2011).

Furthermore, depression and other trauma symptomology, such as PTSD, anxiety, and anger/irritability, as well as intravenous drug use, have also been found to account for significant variance in scores on the Child Abuse Potential Inventory (CAP; Milner & Wimberley, 1979) among pregnant alcohol and other drug abusing women (Erickson & Tonigan, 2008). Hien et al. (2010) speculate that substance use is the mediating factor between distressing emotional states and high child abuse potential. Specifically, parents who cope with their negative emotions by using alcohol and other drugs are less likely to utilize the decision making process necessary for effective parenting. Substance use in response to stress can also be conceptualized as a form of avoidance coping (e.g., Banyard & Williams, 2007). In one of the few studies to utilize logistic regression to examine substantiation of child maltreatment, Wekerle and colleagues (2007) found that although “the total number of caregiver vulnerabilities [depression, history of trauma]

was a far more robust predictor of maltreatment substantiation than any specific vulnerability”(p. 438), substance abuse was the strongest individual predictor. Also, parental substance abuse has been linked to neglect recidivism (see Wekerle et al., 2007, for a review) and physical abuse perpetration (Walsh, MacMillan, & Jamieson, 2003). Overall, substance use may be an important variable to consider in the context of child abuse potential, and it is also important to consider from an intervention standpoint, as substance using parents who abuse their children often are excluded from receiving services specifically tailored to their co-occurring problems (Donohue, Romero, & Hill, 2005).

Other predictors of child abuse that are personal characteristics of parents include parental stress and anger expression (Rodriguez & Green, 1997) as well as mental health problems, adverse life experiences, and neglect of the child’s hygiene (Agathonos-Georgopoulou & Browne, 1997). Moreover, one study that examined the scores of physically abusive parents on the Minnesota Multiphasic Personality Inventory – Second Edition (MMPI-2) was conducted by Stredny, Archer, and Mason (2006). The highest elevations (relative to other scales) were found on the psychopathic deviate and paranoia scales, but the mean scores on all scales were within normal limits. In addition, an examination of the characteristics of domestic violence perpetrators found that men who were attending court-mandated domestic violence treatment programs had no clinical elevations on any scale (Scott, Flowers, Bulnes, Olmsted, & Carbajal-Madrid, 2009), but were significantly different from the control group on scales pertaining to antisocial/psychopathic tendencies and symptoms associated with serious disturbances or “faking bad” (endorsing answers to several test items that were infrequently endorsed by

the sample used to standardize the MMPI-2). One interpretation of these findings, or the lack of clinical elevation, may be that it is not the clinical elevation per se that determines the utility of the violence predictor, but whether or not the predictor can differentiate between confirmed perpetrators of violence and non-violent individuals, as well as distinguish between high and low risk individuals. No published study, however, could be found that explored child abuse predictors from the MMPI – 2 – Restructured Form (MMPI-2-RF) (Ben-Porath & Tellegen, 2008).

Statement of the Problem

Given that millions of children are abused each year (Trickett, Negriff, Ji, & Peckins, 2011) and the probability of re-abuse following intervention by child protective services is high (around 85% for high-risk families; DePanfilis & Zuravin, 1998), it is of the utmost importance to examine the variables that may predict re-abuse. Also, just as there has been a recently emerging movement to identify risk and resilience variables *within* samples of abuse *survivors* (e.g., Asberg & Renk, 2012; Banyard & Williams, 2007), there is a call for examining such variables among perpetrators as well. For example, studies have examined substantiation of abuse reports (Wekerle, Wall, Leung, & Trocmé, 2007) and perpetration leading to fatalities (Yampolskaya, Greenbaum, & Berson, 2009) among caregivers referred or investigated for child maltreatment, but more research is needed to illuminate key variables to target for intervention. Also, relative to studies on differences between perpetrators and non-perpetrators, far fewer studies have investigated heightened child abuse potential among caregivers involved with, and referred for evaluation by, Child Protective Services.

The present study is an attempt to expand upon the existing literature by identifying the most important variables that predict child abuse (as measured by the CAP) from the higher order scales of the MMPI-2-RF and the Adult Self-Report (ASR) form of the Achenbach System of Empirically Based Assessment (ASEBA) among parents who were referred by child protective services for a parental fitness evaluation after their children were removed from the home.

Previous research has examined the correlations between the MMPI-2 and child abuse and interpersonal violence (Stredny et al., 2006; Scott et al., 2009), and interpersonal violence has been shown to correlate with child abuse (Slep & O'Leary, 2005; Appel & Holden, 1998; McDonald et al., 2011), but to date no published study has examined the correlations between the MMPI-2-RF and child abuse potential. Furthermore, previous studies have identified predictor variables that differentiate between abusers and non-abusers, whereas the present study explored and identified the variables that differentiated between high- and low-risk individuals within a clinical sample that have already been determined by state child and protective services (CPS) to have abused or neglected their children. Such predictor variables may have important practical implications, including the use of more serious intervention for high-risk individuals, the distribution of resources by CPS, and reduction of the potential for re-abuse through education of families and those in charge of providing interventions.

It should be noted that although several characteristics of the children themselves may predict their risk of being abused (e.g., delinquency, sociopathy, internalizing problems; Todd & Gesten, 1999), the present study focused on parental characteristics that predict elevations on a well-established measure of child abuse potential.

Furthermore, some variables may be correlated with child abuse potential without being “red flags” in and of themselves (e.g., poverty). Such variables were not directly assessed in this study, which may present a limitation. It is unlikely, however, that they would be directly related to the probability of child abuse and, therefore, are perhaps insufficient in the prediction of child abuse potential. Instead, variables related to stress, maladaptive coping, and psychopathology, which are often seen to a higher degree among impoverished groups (see Wekerle et al., 2007, for a review) were assessed. To address the overall goal of the study, the present analysis compared relevant variables to determine which were the most important predictors of child abuse potential within a clinically referred/identified care-giver sample. Although it was hypothesized a priori that select MMPI-2-RF scales (e.g., Behavioral/Externalizing Dysfunction, Emotional/Internalizing Dysfunction, and Thought Dysfunction) and ASEBA scales (e.g., Depressive Problems, Anxiety Problems, Avoidant Personality Problems, Antisocial Personality Problems, and Alcohol and Drug Substance Use) would correlate significantly with participants’ CAP scores (higher risk vs. lower risk), a multiple regression identified the most robust predictors of child abuse potential. For more specific details on the analyses, please see the method section.

CHAPTER THREE: METHOD

Participants

The participants that comprised the overall sample used in this study were 177 parents and primary caretakers who were court-ordered by Georgia's Division of Family and Children Services to receive a psychiatric evaluation. The de-identified data was provided by a private practice group in Atlanta, Georgia, where the evaluations were conducted. About 70% (124) of the participants were female and about 30% (53) were male. The overwhelming majority of the sample (148/83%) was White, whereas 14 participants (8%) were Black, two (1%) were Filipino, and one was Latina (0.5%). Data on race were missing for 12 participants. In terms of marital status, 61 (34.5%) of the participants endorsed that they were married, 44 (25%) were single, 30 (17%) were separated, 23 (13%) were divorced, and four (2.3%) were widowed. Data on marital status were missing for 15 participants. Ages of participants ranged from 18 to 59-years ($M = 33.39$, $SD = 9.03$). Data on age were missing for eight participants. The specific types of abuse perpetrated by these individuals are unknown; however, different forms of child maltreatment, such as physical, emotional, sexual, and psychological abuse, as well as neglect, often co-occur (Dong et al., 2004), thus the examination of child abuse potential, regardless of abuse type, may still be relevant.

We examined demographic variables for four subdivisions of participants. The first group represents the entire sample. The second group represents only the participants who had exact scores and excludes participants with categorical data (discussed below). The third group had exact scores and elevated CAP scores (i.e.,

higher than 129). The last group had exact scores and CAP scores that were non-elevated. Demographic information for the overall sample ($n = 177$), the subsample with exact scores ($n = 62$), participants with elevated scores ($n = 26$), and participants with non-elevated scores ($n = 36$) are shown in Table 1.

Table 1 – Sample Demographics				
Demographic Variable	Overall Sample	Subsample with Exact Scores	Subsample with Elevated Scores	Subsample with Non-Elevated Scores
Mean Age	33.4	33.2	30.8	34.9
Gender (n)				
<i>Female</i>	124 (70.1%)	46 (74.2%)	25 (96.2%)	21 (58.3%)
<i>Male</i>	53 (29.9%)	16 (25.8%)	1 (3.8%)	15 (41.7%)
Race (n)				
<i>White</i>	148 (89.7%)	54 (90.0%)	20 (83.3%)	34 (94.4%)
<i>Black</i>	14 (8.5%)	5 (8.3%)	3 (12.5%)	2 (5.6%)
<i>Filipino</i>	2 (1.2%)	1 (1.7%)	1 (4.2%)	0 (0.0%)
<i>Latina</i>	1 (0.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Marital Status (n)				
<i>Married</i>	61 (37.7%)	20 (34.5%)	9 (40.9%)	11 (30.6%)
<i>Single</i>	44 (27.2%)	16 (27.6%)	5 (22.7%)	11 (30.6%)
<i>Separated</i>	30 (18.5%)	12 (20.7%)	3 (13.6%)	9 (25.0%)
<i>Divorced</i>	23 (14.2%)	8 (13.8%)	5 (22.7%)	3 (8.3%)
<i>Widowed</i>	4 (2.5%)	2 (3.5%)	0 (0.0%)	2 (5.6%)

Measures

The measures used in the court-ordered evaluations included the Minnesota Multiphasic Personality Inventory, Second Edition (MMPI-2; Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989), the Child Abuse Potential Inventory (CAP; Milner & Wimberley, 1979), and the Adult Self-Report (ASR) form of the Achenbach System of Empirically Based Assessment (ASEBA; Achenbach & Rescorla, 2003). It should be noted, however, that the dataset for the present study consisted of MMPI-2-

Restructured Form scores (MMPI-2-RF; Ben-Porath & Tellegen, 2008), which had been extracted previously from the MMPI-2 protocols. Elevated scores on the validity scales for the MMPI-2-RF resulted in the removal of 23 participants from the analysis. This number of invalid responses (13% of the 177 total), is similar to that of Scott et al. (2009), who found invalid MMPI-2 profiles (due to high rates of endorsing infrequent responses) among 16.7% of their sample of domestic violence perpetrators. The following were criteria for removal in the present study: CNS > 18, Fp-r > 100, VRIN-r > 80, or TRIN-r > 80, with meeting any of these criteria resulting in exclusion. After the elimination of 23 participants with invalid profiles, 9 participants without CAP scores, and 83 participants without *exact* CAP scores (only a designation of elevated or non-elevated scores), analyses were conducted on a remaining sample of 62 participants. The decision to use only those participants for which exact scores on the outcome measure (CAP) was available is based, in part, on the assumption that a) data can more easily be examined for outliers, b) results will be easier to interpret if actual scores are used, and c) it is more appropriate for our methodology and use of multiple regression (where the dependent variable must be continuous).

Child Abuse Potential. The CAP is a 160-item screening instrument for physical child abuse potential. It is a self-report questionnaire used with individuals who are 18-year-old and older. The CAP was constructed on the basis of personality traits reported in the literature to be “characteristic of individuals who abuse and neglect children” and a factor analysis resulted in the predictive dimensions of loneliness, rigidity, problems, and control (Milner & Wimberley, 1979). It contains 10 scales, including a 77-item clinical Abuse scale, six factor scales that go under the Abuse scale (Distress, Rigidity,

Unhappiness, Problems with Child and Self, Problems with Family, and Problems with Others), and three validity scales. Respondents answer “agree” or “disagree” for each item and scores range from 0 to 486. Respondents with scores above 166 are considered to be at medium risk for physical child abuse and respondents with scores above 215 are considered to be at high risk for abuse. Many of the items in the Distress, Rigidity, and Unhappiness scales concern mood and anxiety symptoms and the Problems with Child and Self and Problems with Family scales involve interpersonal or interactional problems.

Research has been conducted to examine the construct, convergent, discriminant, and predictive validity of the CAP. In a study of undergraduates, the CAP was administered with an abbreviated MMPI and the Marlowe-Crowne Social Desirability Scale. There was a significant inverse relationship between CAP scores and the MMPI measure of ego-strength, which suggests that the CAP has high construct validity (Robertson & Milner, 1983). In addition, a comparison of CAP scores with the Mental Health Index (MHI) resulted in a positive correlation between CAP scores and MHI measures of psychological distress and a negative correlation between CAP scores and MHI measures of psychological well-being, thus supporting the convergent validity of the CAP (Milner, Charlesworth, Gold, Gold, & Friesen, 1988). Another study of the convergent and discriminant validity of the CAP reported positive relationships between abuse and apprehension, tension, and anxiety and a negative relationship between abuse and stability (Robertson & Milner, 1985).

However, the CAP has been shown to have limited predictive validity, perhaps due to unaccounted protective factors (Chaffin & Valle, 2003). For example, in a study

of female parents who were enrolled in an at-risk parent-child program it was found that all of the parents who were later reported to a suspected child abuse and neglect team had previously scored above the CAP cutoff score for abuse, but the majority of parents with CAP scores above the cutoff did not subsequently abuse (Milner, Gold, Ayoub, & Jacewitz, 1984).

Personality. The MMPI-2-RF was derived from the MMPI-2, which is the most widely used measure of personality in the world (Nichols, 2011). It was developed to assess personality in a variety of settings (Ben-Porath & Tellegen, 2008). The MMPI-2-RF was designed to identify and separate the common “patienthood” factor found in many clinical disorders, called demoralization, from the clinical scales of the MMPI-2 in order to make them more unidimensional. It also eliminated invalid “subtle” items that were originally intended to identify underlying factors associated with a syndrome. Ben-Porath and Tellegen used factor analysis to remove demoralization from the clinical scales and standardized the resulting Restructured Clinical (RC) scales using data from 2,276 individuals randomly chosen from the MMPI-2 normative sample.

The MMPI-2-RF has 338 true/false items and provides a set of validity scales, three Higher-Order scales, and nine clinical syndrome scales, as well as 23 Specific Problems Scales and two Interest Scales, with a standard score range of 20 to 120 for each scale. Of particular interest to the present study were the Higher Order scales, which consist of Behavioral/Externalizing Dysfunction (BXD), Emotional/Internalizing Dysfunction (EID), and Thought Dysfunction (THD). Sample items for these three scales, respectively, are: “I have never done anything dangerous for the thrill of it”

(scored false), “I am a very sociable person” (scored false), and “I believe I am being plotted against” (scored true).

Psychological Functioning. The Achenbach System of Empirically Based Assessment – Adult Self Report (ASEBA-ASR; Achenbach & Rescorla, 2003) is a measure of social, emotional, and behavioral function in adults ages 18-59-years. It especially targets problems for the previous six months and includes scales for adaptive functioning, empirically based syndromes, substance use, Internalizing, Externalizing, and Total Problems, DSM-oriented scales, and a Critical Items scale. Responses to items include “Not True,” “Somewhat or Sometimes True,” and “Very True or Often True”, which are rated on a 4-point Likert-type scale. The ASEBA-ASR consists of 138 items and standard scores for each scale range from 50 to 100. Of particular interest to the present study are the substance use and DSM-oriented scales. The substance use scale items inquire about the number of times per day the respondent used tobacco (including smokeless tobacco), was drunk, and used drugs for nonmedical purposes (including marijuana, cocaine, and other drugs, except alcohol and nicotine). The DSM-oriented scales include Depressive Problems, Anxiety Problems, Somatic Problems, Avoidant Personality Problems, Attention Deficit/Hyperactivity Problems, and Antisocial Personality Problems. The DSM-oriented scales include items such as “Cries a lot,” “Worries about his/her future,” “Feels dizzy or lightheaded,” “Doesn’t get along with other people,” “Is too forgetful,” and “Argues a lot.”

Achenbach and Rescorla (2003) analyzed numerous studies in order to determine the reliability and validity of the ASEBA adult forms. They found that the 1-week test-retest reliability was high for most scales, the internal consistency was high for the ASR

empirically based problem scales and the DSM-oriented scales, cross-informant agreement was modest for substance use, the empirically based problem scales, and the DSM-oriented scales, and the scale scores were substantially stable. They also concluded that the problem items had good content validity, the criterion-related validity of scale scores was good, and the construct validity of the scales was supported by predicting ASEBA adult scores from ASEBA child and adolescent scores, associations between the scales and diagnostic assessment, associations with the Beck Depression Inventory, the Beck Anxiety Inventory, the MMPI, and the Symptom Checklist-90-Revised, and associations with a prior intervention and with scores on the Child Depression Inventory completed at age 11 (Achenbach & Rescorla, 2003).

Overall, scales were included in the analysis if their predictive value of child abuse potential has been supported in the literature, resulting in the following list of potential predictors: the BXD, EID, and THD scales of the MMPI-2-RF and the Depressive Problems, Anxiety Problems, Avoidant Personality Problems, and Antisocial Personality Problems DSM-Oriented scales as well as the Alcohol Substance Use scale and Drug Substance Use scale of the ASEBA, resulting in a total of nine predictors.

Hypotheses

Based on the literature, the following hypotheses were generated:

1. Individuals who experience emotional (as measured by scores on the Emotional/Internalizing Dysfunction scale of the MMPI-2-RF) or cognitive (as measured by the Thought Dysfunction scale of the MMPI-2-RF) dysfunction are at higher risk for re-abuse (i.e., higher scores on the CAP).

2. Individuals who exhibit more aggressive or antisocial behavior (as measured by the Behavioral/Externalizing Dysfunction scale of the MMPI-2-RF) are at higher risk for re-abuse (i.e., higher scores on the CAP).
3. Individuals who endorse more frequent use and abuse substances (as measured by the Drug Use and Alcohol Use scales of the ASEBA) are at higher risk for re-abuse.
4. Individuals who endorse more depressive (as measured by the Depressive Problems scale of ASEBA) or anxious (as measured by the Anxiety Problems scale of the ASEBA) symptoms are at higher risk for re-abuse (i.e., higher scores on the CAP).
5. Individuals who use avoidance as a coping strategy more frequently (as measured by the Avoidant Personality Problems scale of the ASEBA) are at higher risk for re-abuse (i.e., higher scores on the CAP).
6. Individuals who have antisocial traits (as measured by scores on the Antisocial Personality Problems of the ASEBA) are at higher risk for re-abuse (i.e., higher scores on the CAP).
7. The combination of the aforementioned variables/subscales will predict significantly re-abuse potential.

Summary of Scales Used in Analyses

To test the aforementioned hypotheses, the Emotional/Internalizing Dysfunction (EID), Thought Dysfunction (THD), and Behavioral/Externalizing Dysfunction (BXD) scales from the MMPI-2-RF were included in the analysis (Hypotheses 1 – 2). In addition, the following ASEBA scales were chosen to be included in the analysis: the

Alcohol Use and Drug Use scales and the Depressive Problems, Anxiety Problems, Avoidant Personality Problems, and Antisocial Personality Problems of the DSM-Oriented scales (Hypotheses 3 – 6). An overall model predicting child abuse potential (Hypothesis 7) was also examined using all of the aforementioned predictors/scales.

Overall, the aforementioned analyses served the purpose of exploring 1) bi-variate relationships among study variables (correlations); 2) group differences between upper and lower CAP groups (t-tests); and 3) predicting child abuse potential (multiple regression) within a sample of parents referred for evaluation after CPS involvement. Findings may aid in the identification of those care givers who are at an elevated risk for re-abusing their child following a substantiated instance of child abuse. Findings may also enhance our understanding of which predictor variables are important within a sample of confirmed or substantiated perpetrators of child maltreatment.

Primary Statistical Analyses

First, means and standard deviations for the overall sample ($N = 62$) were calculated for all study measures (relevant subscales only). Also, t-tests of sex differences on subscales were conducted for the *overall* sample ($N = 62$) in order to determine whether or not sex needed to be included as a predictor variable in the prediction model. Finally, in order to predict higher CAP scores from MMPI-2-RF and ASEBA scores, a multiple regression was used. Multiple regression is appropriate to use when predicting a continuous variable from a variety of continuous (subscale scores) and/or dichotomous (sex, minority status) variables. For the multiple regression, participants' continuous score on the CAP was the dependent variable. Scores on the

MMPI-2-RF higher-order scales and the relevant scales of the ASEBA-ASR were the predictor variables.

Secondary Analysis and Group Designation

By definition, this sample of parents/care givers that were identified by CPS can be considered at risk for perpetrating abuse against a child, however, the present study sought to also identify “higher risk” parents *within* the sample. Specifically, group differences between ‘higher’ and ‘lower’ risk were assessed with t-tests (and discussed in the results below). For the t-tests, high risk for child abuse is represented by a score above the sample mean on the CAP, whereas a score below the mean indicates low risk. In this study, the mean CAP score for the 62 participants, i.e., CAP = 129, was used as the cutoff point for an “elevated score”, i.e., scores at or above 129 were considered “higher risk” for abuse and scores below 129 were considered “lower risk” within this sample. Unfortunately, only one individual in the elevated subsample was male, which likely minimized chances of sex being a significant predictor of abuse perpetration in subsequent analyses.

Rationale for Group Designation. Although most studies use a less stringent cutoff of either 166 or 215 as recommended by the creators of the scale, our relatively low estimate may be appropriate given our sample of confirmed perpetrators of child maltreatment. For example, Holden, Willis, and Foltz (1989) suggest that the more liberal cutoff noted above could be used to identify parents “at risk for maltreatment before the occurrence of documented abuse rather than after the abuse has occurred” (p. 66). They report further that abuse potential cutoff scores should be interpreted cautiously “when the CAP is administered to samples containing subjects displaying

chronic problematic parenting” (p. 66). For example, CAP scores for physical or mixed physical/sexual abuse perpetrators ($N = 37$) in their sample ($M = 145$; $SD = 85.4$) were not significantly different from CAP scores of parents referred for reasons other than child abuse ($M = 168$, $SD = 80.1$). In other words, utilizing a more stringent cutoff (increasing the likelihood of participants being deemed “higher risk”) within this sample of confirmed perpetrators of some form of child maltreatment is in line with the recommendation to exercise caution. Consequently, the elevated and non-elevated groups for the present study were comprised of those above and below the CAP sample mean, respectively. Based on this cutoff, 26 participants comprised the high-risk group and 36 participants made up the low-risk group. Seven participants were missing data for the DSM-oriented scales and for the Alcohol and Drug Substance Use scales of the ASEBA, and one participant was missing data for the Alcohol and Drug Substance Use scales only. Mean substitutions using raw scores were used in cases of missing data. Individuals whose scores place them in the high risk range will be labeled “1” and those in the low risk range will be labeled “0” to indicate group belonging and allow for correlational analysis.

CHAPTER FOUR: RESULTS

Means and standard deviations for all scales are shown in Table 2 below. An independent samples t-test conducted for age, the only continuous demographic variable, indicated that the elevated (mean age = 30.77, SD = 7.79) and non-elevated (mean age = 34.86, SD = 9.30) groups (as indicated by CAP scores) did not significantly differ on this variable, $p = 0.446$.

Table 2 – Descriptive Statistics		
Scale	Mean Score	Standard Deviation
Age	33.15	8.87
CAP	128.97	102.16
Alcohol Use	51.97	4.38
Drug Use	54.49	8.49
Depressive Problems	57.43	9.35
Anxiety Problems	56.81	7.55
Avoidant Personality Problems	55.59	8.08
Antisocial Personality Problems	55.89	7.17
Emotional/Internalizing Dysfunction	51.38	14.48
Thought Dysfunction	50.17	11.28
Behavioral Externalizing Dysfunction	50.98	11.81

T-tests were conducted to examine the differences between higher and lower risk groups on the nine subscales. The results show that the higher risk group had significantly higher scores on Depressive Problems ($F = 16.57, p < .001$), Avoidant Personality Problems ($F = 11.57, p < .05$), and Emotional/Internalizing Dysfunction ($F = 5.37, p < .05$) than the lower risk group (see Table 3 below).

Table 3 – Results of Higher vs. Lower Risk T-Tests		
Scale	F	p
Alcohol Use	.01	.920
Drug Use	2.43	.125
Depressive Problems	16.57	.000**
Anxiety Problems	3.26	.076
Avoidant Personality Problems	11.57	.001*
Antisocial Personality Problems	3.61	.062
Emotional/Internalizing Dysfunction	5.37	.024*
Behavioral/Externalizing Dysfunction	.16	.687
Thought Dysfunction	2.68	.107

* $p < .05$, ** $p < .001$

T-tests were also conducted to assess for differences between males and females on the subscales. The results show that women's scores were significantly higher on Depressive Problems ($t = -3.34, p < .001$), Anxiety Problems ($t = -2.51, p = .006$), Avoidant Personality Problems ($t = -2.49, p = .001$), Antisocial Personality Problems ($t = -2.87, p < .001$), and EID ($t = -2.90, p = .027$) (see Table 3 below). The sexes did not significantly differ on the Drug Use ($t = -1.38, p = .084$), Alcohol Use ($t = -.18, p = .905$), THD ($t = -.61, p = .961$), or BXD ($t = 1.35, p = .230$) scales.

Table 4 – Results of Gender T-Tests					
Scale	Mean		Standard Deviation		p value
	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>	
Drug Use	51.98	55.36	4.94	9.31	.084
Alcohol Use	51.79	52.03	3.83	4.59	.905
Depressive Problems	51.21	59.59	2.51	9.89	.000**
Anxiety Problems	52.90	58.17	5.26	7.79	.006*
Avoidant Personality Problems	51.43	57.04	4.72	8.53	.001*
Antisocial Personality Problems	51.70	57.35	2.52	7.69	.000**
Emotional/Internalizing Dysfunction	42.84	54.35	8.96	14.92	.027*
Behavioral/Externalizing Dysfunction	54.39	49.79	13.32	1.64	.230
Thought Dysfunction	48.68	50.70	10.34	11.65	.961

* $p < .05$, ** $p < .001$

Next, a correlation matrix was examined to assess the bi-variate relationship between the nine independent variables and CAP scores. The results show that all but the substance abuse scales (Alcohol Use and Drug Use) correlated significantly with scores on the CAP (see Table 4 below). Depressive Problems ($r = .835, p < .001$), Anxiety Problems, ($r = .763, p < .001$), Avoidant Personality Problems ($r = .669, p < .001$), Antisocial Personality Problems ($r = .637, p < .001$), EID ($r = .899, p < .001$), THD ($r = .445, p < .001$), and BXD ($r = .338, p = .007$) were significantly positively correlated with scores on the CAP whereas Alcohol Use ($r = .108, p = .403$) and Drug Use ($r = .173, p = .178$) were not associated with CAP scores.

Table 5 – Results of Bivariate Correlation		
Scale	<i>r</i>	<i>p</i>
Depressive Problems	.835	.000**
Anxiety Problems	.763	.000**
Avoidant Personality Problems	.669	.000**
Antisocial Personality Problems	.637	.000*
EID	.899	.000**
THD	.445	.000**
BXD	.338	.007*
Alcohol Use	.108	.403
Drug Use	.173	.178

* $p < .05$, ** $p < .001$

Given the significant differences between males and females on five of the nine predictor variables, sex was included as a predictor in the multiple regression analysis. The results of the regression suggested that the overall model (consisting of 10 predictors) significantly predicted child abuse potential, $F(10,61) = 27.50, p < .001$. The model had an R^2 of .844, indicating that the variables explain 84.4% of the variance in CAP scores in this sample. More specifically, however, only Depressive Problems (*Beta*

$= .300, p < .05$) and Emotional/Internalizing Dysfunction ($Beta = .620, p < .001$) were significant predictors of child abuse potential in the model (see Table 5 below). Overall, results suggest that although several variables correlate with child abuse potential (CAP scores), depressive problems (Depressive Problems of the ASEBA-ASR) and emotional/internalizing dysfunction (Emotional/Internalizing Dysfunction of the MMPI-2-RF) contribute unique variance to a model of child abuse potential when variables are entered together in a regression equation.

Table 6 – Results of Multiple Regression		
Predictor Variable	Beta	p
Sex	.008	.903
Drug Use	-.064	.369
Alcohol Use	.010	.875
Depressive Problems	.300	.032*
Anxiety Problems	.001	.993
Avoidant Personality Problems	.007	.942
Antisocial Personality Problems	.034	.731
Emotional/Internalizing Dysfunction	.620	.000**
Behavioral/Externalizing Dysfunction	.055	.498
Thought Dysfunction	.006	.930

* $p < .05$, ** $p < .001$

Results for Secondary Analyses

To compare parents identified as “high risk” to those identified as “low risk” within the group of caregivers, a series of t-tests were conducted. The results of t-tests indicate that the high risk group (i.e., participants with CAP scores higher than 129) had more depressive ($M = 65.85$ vs. $M = 51.34$) and other internalizing symptoms ($M = 64.17$ vs. $M = 42.15$) and tend to be more shy and avoid people more frequently ($M = 60.80$ vs. $M = 51.83$) relative to the low risk group, $p < .05$.

CHAPTER FIVE: DISCUSSION

Given the continued concern that millions of children are abused and maltreated each year in the United States (Department of Health and Human Services, 2010) and the increased risks of future maladjustment that is experienced by these children (Thornberry, Henry, Ireland, & Smith, 2010), more research is needed to identify predictors of child abuse potential. To that end, this study examined predictors of child abuse potential in a sample of parents and caregivers involved with child protective services.

Findings indicated that women in this sample of parents and caregivers were significantly more depressed and anxious, and endorsed more problems pertaining to avoidant and antisocial personality relative to males. Women also endorsed more emotional/internalizing symptoms relative to their male counterparts. These results are mostly consistent with the literature on sex differences in these areas. Past research has also found that women tend to have higher rates of depression (De Coster, 2005), internalizing problems (Tompkins, Hockett, Abraibesh, & Witt, 2011), and anxiety disorder (Kessler et al., 1994). However, an examination of the National Comorbidity Survey (Kessler et al., 1994) found that males had higher rates of antisocial personality disorder than females, which contradicts the findings in the current analysis. In addition, no evidence could be found in the literature for sex differences in the prevalence of avoidant personality disorder.

In partial support of our hypotheses, findings also indicated that depression, anxiety, avoidant personality, antisocial personality, emotional dysfunction, behavioral dysfunction, and thought dysfunction were linked to higher child abuse potential in this

sample. However, participants' drug and alcohol use were not associated with potential for child maltreatment. It may be that substance use is mainly a predictor of abuse potential if used to "self-medicate" internalizing symptoms and other emotional distress (Hien et al., 2010). It is also possible that parents in this clinically referred sample under-reported their substance use.

Finally, it was hypothesized that high scores on select scales from the MMPI-2-RF and the ASEBA-ASR would be predictive of high scores on the CAP and, thus, that measures of personality and social/emotional/behavioral functioning could be used to predict physical child abuse potential. More specifically, a multiple regression equation was examined to determine whether depression, anxiety, avoidant personality, antisocial personality, drug use, alcohol use, externalizing behaviors, emotional/internalizing problems, or thought problems could be used to predict CAP scores in a sample of parents and caregivers with substantiated cases of abuse or neglect. The analysis indicated that the regression model is highly predictive of CAP scores (84% of variance explained); however, only depression and emotional/internalizing dysfunction were significant predictors. This finding may suggest that internalizing problems, such as depression, more strongly predict child abuse potential relative to externalizing problems (including substance abuse). These results contradict previous findings that both internalizing and externalizing problems can contribute independently to parental physical abuse potential (Medley & Sachs-Ericsson, 2009). It is possible, however, that parents were more forthcoming about their internalizing symptoms than externalizing symptoms. Access to corroborating information (e.g., regarding substance use) may prove useful and could be considered for future studies.

Furthermore, findings also suggested that although anxiety, avoidant personality, antisocial personality, drug or alcohol use, externalizing behaviors, and thought problems correlate with child abuse potential, they no longer contribute unique variance in the prediction of child abuse potential when depression and emotional/internalizing dysfunction is accounted for. Overall, findings suggest that depression and other emotional problems could possibly serve as a red flag when assessing a parent's potential for child maltreatment, and that these variables should be targeted for intervention to possibly prevent or lower the risk for re-abuse.

Discussion of Secondary Analyses

To compare parents identified as "high risk" to those identified as "low risk" within the group of caregivers, a series of t-tests were conducted. Findings indicate that the high risk group (i.e., participants with CAP scores higher than 129) had more depressive and other internalizing symptoms and tend to be more shy and avoid people more frequently relative to the low risk group. These findings are consistent with previous studies that have found higher potential for child maltreatment in parents with depression or other emotional problems (Damashek et al., 2011; Rodriguez, 2006) and avoidant personality (Rodriguez, 2010). These variables may be important in predicting child abuse in general, but may be especially salient as predictors of high risk parents within a sample of substantiated perpetrators of child maltreatment.

Limitations of the Present Study

The present study relied on self-reports from parents and caregivers who have had their children removed from the home by state social services and may, consciously or unconsciously, distort their responses in order to present themselves in a more favorable

light. In this study, the probability of abuse was determined with a questionnaire rather than with actual substantiated reports to social services. Future studies may employ a longitudinal design and/or identify high risk parents (prior to involvement with CPS) to assess the utility of these variables in predicting first time abuse, re-abuse, and substantiation of abuse. Similarly, this study focused on the probability of abuse potential for referred/substantiated cases (i.e., re-abuse potential), not first-time abuse. Therefore, the factors identified in this study as significant predictors of *re-abuse* potential (i.e., depression and emotional/internalizing dysfunction) may not be the most important predictors of first-time abuse. Moreover, the present study did not account for specific types of abuse, which may have impacted the results. Future studies may wish to gain access to a larger sample and information regarding various abuse types (neglect, sexual abuse, physical abuse) to assess the extent to which predictor variables are helpful in identifying parents who are at high risk for different types of abuse.

Despite these limitations, the strengths of this study include the use of a clinically referred sample of parents and care givers with CPS involvement as well as the use of psychometrically sound measures. Findings may be viewed as lending support for interventions that target care givers' depressive- and other internalizing symptoms, which may be particularly important in predicting risk of (re-)abuse among high risk parents.

References

- Achenbach, T. M., & Rescorla, L. A. (2003). *Manual for the ASEBA Adult Forms and Profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, and Families.
- Agathonos-Georgopoulou, H., & Browne, K. D. (1997). The prediction of child maltreatment in Greek families. *Child Abuse and Neglect*, 21(8), 721-735.
- Appel, A. E., & Holden, G. W. (1998). The co-occurrence of spouse and physical abuse: A review and appraisal. *Journal of Family Psychology*, 12(4), 578-599.
- Asberg, K., & Renk, K. (2012). Comparing incarcerated and college student women with a history of childhood sexual abuse: The role of abuse severity, support, and substance use. *Psychological Trauma: Theory, Research, Practice, and Policy*. Advance online publication. doi: 10.1037/a0027162
- Banyard, V. L., & Williams, L. M. (2007). Women's voices on recovery: A multi-method study of the complexity of recovery from child sexual abuse. *Child Abuse and Neglect*, 31(3), 275-290.
- Ben-Porath, Y. S., & Tellegen, A. (2008). *MMPI-2-RF (Minnesota Multiphasic Personality Inventory-2 Restructured Form): Manual for administration, scoring, and interpretation*. Minneapolis: University of Minnesota Press.
- Bornstein, B. H., Kaplan, D. L., & Perry, A. R. (2007). Child abuse in the eyes of the beholder: Lay perceptions of child sexual and physical abuse. *Child Abuse and Neglect*, 31(4), 375-391.

- Bradshaw, K. M., Donohue, B., Cross, C., Urgelles, J., & Allen, D. N. (2011). Examination of the relationship between parental satisfaction and child maltreatment potential while considering social desirability. *Journal of Family Violence*, 26(7), 545-549.
- Butcher, J. N., Dahlstrom, W. G., Graham, J. R., Tellegen, A., & Kaemmer, B. (1989). *Manual for the restandardized Minnesota Multiphasic Personality Inventory: MMPI-2. An administrative and interpretive guide*. Minneapolis: University of Minnesota Press.
- Chaffin, M., & Valle, L. A. (2003). Dynamic prediction characteristics of the Child Abuse Potential Inventory. *Child Abuse and Neglect*, 27(5), 463-481.
- Cloitre, M., Koenen, K. C., Cohen, L. R., & Han, H. (2002). Skills training in affective and interpersonal regulation followed by exposure: A phase-based treatment for PTSD related to childhood abuse. *Journal of Consulting and Clinical Psychology*, 70(5), 1067-1074.
- Crouch, J. L., Milner, J. S., & Caliso, J. A. (1995). Childhood physical abuse, perceived social support, and socioemotional status in adult women. *Violence and Victims*, 10(4), 273-283.
- Damashek, A., Doughty, D., Ware, L., & Silovsky, J. (2011). Predictors of client engagement and attrition in home-based child maltreatment prevention services. *Child Maltreatment*, 16(1), 9-20.
- De Coster, S. (2005). Depression and law violation: Gendered responses to gendered stresses. *Sociological Perspectives*, 48(2), 155-187.

- DePanfilis, D., & Zuravin, S. J. (1998). Rates, patterns, and frequency of child maltreatment recurrences among families known to CPS. *Child Maltreatment*, 3(1), 27-42.
- Donohue, B., Romero, V., & Hill, H. H. (2005). Treatment of co-occurring child maltreatment and substance abuse. *Aggression and Violent Behavior*, 11(6), 626-640.
- Dong, M., Anda, R. F., Felitti, V. J., Dube, S. R., Williamson, D. F., Thompson, T. J., ... Giles, W. H. (2004). The interrelatedness of multiple forms of childhood abuse, neglect, and household dysfunction. *Child Abuse and Neglect*, 28(7), 771-784.
- Erickson, S. J. & Tonigan, J. S. (2008). Trauma and intravenous drug use among pregnant alcohol/other drug abusing women: Factors in predicting child abuse potential. *Alcoholism Treatment Quarterly*, 26(3), 313-332.
- Flieger, C. L. (1999). Reporting child physical abuse: The effects of varying legal definitions of reasonable suspicion on psychologists' child abuse reporting behavior. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 60(2-B), 827.
- Gal, G., Levav, I., & Gross, R. (2011). Psychopathology among adults abused during childhood or adolescence: Results from the Israel-based world mental health survey. *Journal of Nervous and Mental Disease*, 199(4), 222-229.
- Gómez, A. M. (2011). Testing the cycle of violence hypothesis: Child abuse and adolescent dating violence as predictors of intimate partner violence in young adulthood. *Youth and Society*, 43(1), 171-192.

- Gracia, E., & Herrero, J. (2006). Perceived neighborhood social disorder and residents' attitudes toward reporting child physical abuse. *Child Abuse and Neglect, 30*(4), 357-365.
- Guterman, N. B., Lee, S. J., Taylor, C. A., & Rathouz, P. J. (2009). Parental perceptions of neighborhood processes, stress, personal control, and risk for physical child abuse and neglect. *Child Abuse and Neglect, 33*(12), 897-906.
- Heyman, R. E., & Sleps (2002). Do child abuse and interparental violence lead to adulthood family violence? *Journal of Marriage and Family, 64*(4), 864-870.
- Hien, D., Cohen, L. R., Caldeira, N. A., Flom, P., & Wasserman, G. (2010). Depression and anger as risk factors underlying the relationship between maternal substance involvement and child abuse potential. *Child Abuse and Neglect, 34*(2), 105-113.
- Holden, E. W., Willis, D. J., & Foltz, L. (1989). Child abuse potential and parenting stress: Relationships in maltreating parents. *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 1*(1), 64-67.
- Jones, L. M., Finkelhor, D., & Halter, S. (2006). Maltreatment trends in the 1990s: Why does neglect differ from sexual and physical abuse? *Child Maltreatment, 11*(2), 107-120.
- Kessler, R. C., McGonagle, K. A., Zhao, S., Nelson, C. B., Hughes, M., Eshleman, S., Wittchen, H., & Kendler, K. S. (1994). Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: Results from the National Comorbidity Survey. *Archives of General Psychiatry, 51*(1), 8-19.

- Lo, C. C., & Cheng, T. C. (2007). The impact of childhood maltreatment on young adults' substance abuse. *The American Journal of Drug and Alcohol Abuse*, 33(1), 139-146.
- McDonald, R., Jouriles, E. N., Rosenfield, D., & Corbitt-Shindler, D. (2011). Predictors of domestically violent men's aggression toward children: A prospective study. *Journal of Family Psychology*, 25(1), 11-18.
- McElroy, E. M. & Rodriguez, C. M. (2008). Mothers of children with externalizing behavior problems: Cognitive risk factors for abuse potential and discipline style and practices. *Child Abuse and Neglect*, 32(8), 774-784.
- McGloin, J. M., & Widom, C. S. (2001). Resilience among abused and neglected children grown up. *Development and Psychopathology*, 13, 1021–1038.
- Medley, A. & Sachs-Ericsson, N. (2009). Predictors of parental physical abuse: The contribution of internalizing and externalizing disorders and childhood experiences of abuse. *Journal of Affective Disorders*, 113(3), 244-254.
- Milner, J. S., Charlesworth, J. R., Gold, R. G., Gold, S. R., & Friesen, M. R. (1988). Convergent validity of the Child Abuse Potential Inventory. *Journal of Clinical Psychology*, 44(2), 281-285.
- Milner, J. S., Gold, R. G., Ayoub, C., & Jacewitz, M. M. (1984). Predictive validity of the Child Abuse Potential Inventory. *Journal of Consulting and Clinical Psychology*, 52(5), 879-884.
- Milner, J. S. & Wimberley, R. C. (1979). An inventory for the identification of child abusers. *Journal of Clinical Psychology*, 35(1), 95-100.

- Mullen, P. E., Martin, J. L., Anderson, J. C., Romans, S. E., & Herbison, G. P. (1994). The effect of child sexual abuse on social, interpersonal, and sexual function in adult life. *British Journal of Psychiatry, 165*, 35-47.
- Muller, R. T., & Diamond, T. (1999). Father and mother physical abuse and child aggressive behaviour in two generations. *Canadian Journal of Behavioural Science, 31*(4), 221-228.
- Munz, E. A., Wilson, S. R., & D'Enbeau, S. (2010). The reach of child abuse potential: Its relationship with features of parenting at home. *Journal of Family Communication, 10*(4), 256-277.
- Naar-King, S., Silvern, V., Ryan., V., & Sebring, D. (2002). Type and severity of abuse as predictors of psychiatric symptoms in adolescence. *Journal of Family Violence, 17*(2), 133-149.
- Nichols, D. S. (2011). *Essentials of MMPI-2 assessment* (2nd ed.). Hoboken, NJ: John Wiley & Sons Inc.
- O'Keefe, M. (1995). Predictors of child abuse in maritally violent families. *Journal of Interpersonal Violence, 10*(1), 3-25.
- Owhonda, G. A. (2010). The role of ethnicity and case characteristics in professionals' in training identification and reporting of child abuse. *Dissertation Abstracts International Section A: Humanities and Social Sciences, 70*(9-A), 3355.
- Parkes, C. M. (2008). *Making and breaking cycles of violence*. Amityville, NY: Baywood Publishing Co.
- Polnay, J. 2001. *Child Protection in Primary Care*. Oxford: Radcliff Medical Press.

- Read, J., Agar, K., Argyle, N., & Aderhold, V. (2003). Sexual and physical abuse during childhood and adulthood as predictors of hallucinations, delusions and thought disorder. *Psychology and Psychotherapy: Theory, Research and Practice*, 76(1), 1-22.
- Rich-Edwards, J. W., Spiegelman, D., Hibert, E. N. L., Jun, H., Todd, T. J., Kawachi, I., & Wright, R. J. (2010). Abuse in childhood and adolescence as a predictor of type 2 diabetes in adult women. *American Journal of Preventative Medicine*, 39(6), 529-536.
- Rinehart, D. J., Becker, M. A., Buckley, P. R., Dailey, K., Reichardt, C. S., Graeber, C., ... Brown, E. (2005). The relationship between mothers' child abuse potential and current mental health symptoms: Implications for screening and referral. *The Journal of Behavioral Health Services and Research*, 32(2), 155-166.
- Robertson, K. R., & Milner, J. S. (1983). Construct validity of the Child Abuse Potential inventory. *Journal of Clinical Psychology*, 39(3), 426-429.
- Robertson, K. R., & Milner, J. S. (1985). Convergent and discriminant validity of the Child Abuse Potential Inventory. *Journal of Personality Assessment*, 49(1), 86-88.
- Rodriguez, C. M. (2006). Emotional functioning, attachment style, and attributions as predictors of child abuse potential in domestic violence victims. *Violence and Victims*, 21(2), 199-212.
- Rodriguez, C. M. (2010). Personal contextual characteristics and cognitions: Predicting child abuse potential and disciplinary style. *Journal of Interpersonal Violence*, 25(2), 315-335.

- Rodriguez, C. M., & Green, A. J. (1997). Parenting stress and anger expression as predictors of child abuse potential. *Child Abuse and Neglect*, 21(4), 367-377.
- Rodriguez, C. M., & Tucker, M. C. (2011). Behind the cycle of violence, beyond abuse history: A brief report on the association of parental attachment to physical child abuse potential. *Violence and Victims*, 26(1), 246-256.
- Scarborough, A. A., Lloyd, E. C., & Barth, R. P. (2009). Maltreated infants and toddlers: Predictors of developmental delay. *Journal of Developmental and Behavioral Pediatrics*, 30(6), 489-498.
- Scott, R. L., Flowers, J. V., Bulnes, A., Olmsted, E., & Carbajal-Madrid, P. (2009). English-speaking and Spanish-speaking domestic violence perpetrators: An MMPI-2 assessment. *Journal of Interpersonal Violence*, 24(11), 1859-1874.
- Sherrill, A., Renk, K., Sims, V., & Culp, A. (2011). Undergraduate students' attributions of depicted adult – adolescent and adolescent – adolescent sexual interactions. *Journal of Child Sexual Abuse Research: Research, Treatment, and Program Innovations for Victims, Survivors, and Offenders*, 20(2), 157-181.
- Slep, A. M. S. & O'Leary, S. G. (2005). Parent and partner violence in families with young children: Rates, patterns, and connections. *Journal of Consulting and Clinical Psychology*, 73(3), 435-444.
- Stredny, R. V., Archer, R. P., & Mason, J. A. (2006). MMPI-2 and MCMI-III characteristics of parental competency examinees. *Journal of Personality Assessment*, 87(1), 113-115.

- Thornberry, T. P., Henry, K. L., Ireland, T. O., & Smith, C. A. (2010). The causal impact of childhood-limited maltreatment and adolescent maltreatment on early adult adjustment. *Journal of Adolescent Health, 46*(4), 359-365.
- Todd, M. K., & Gesten, E. L. (1999). Predictors of child abuse potential in at-risk adolescents. *Journal of Family Violence, 14*, 417-436.
- Tompkins, T. L., Hockett, A. R., Abraibesh, N., & Witt, J. L. (2011). A closer look at co-rumination: Gender, coping, peer functioning and internalizing/externalizing problems. *Journal of Adolescence, 34*(5), 801-811.
- Trickett, P. K., Negriff, S., Ji, J., & Peckins, M. (2011). Child maltreatment and adolescent development. *Journal of Research on Adolescence, 21*(1), 3-20.
- U.S. Department of Health and Human Services, Administration on Children, Youth and Families. (2010). *Child maltreatment 2008*. Washington, DC: U.S. Government Printing Office.
- Walsh, C., MacMillan, H. L., & Jamieson, E. (2003). The relationship between parental substance abuse and child maltreatment: Findings from the Ontario Health Supplement, *Child Abuse and Neglect, 27*, 1409-1425.
- Webster, S. W., O'Toole, R., O'Toole, A. W., & Lucal, B. (2005). Overreporting and underreporting of child abuse: Teacher's use of professional discretion. *Child Abuse and Neglect, 29*(11), 1281-1296.
- Wekerle, C., Wall, A., Leung, E., & Trocmé, N. (2007). Cumulative stress and substantiated maltreatment: The importance of caregiver vulnerability and adult partner violence. *Child Abuse and Neglect, 31*(4), 427-443.

- Williamson, D. F., Thompson, T. J., Anda, R. F., Dietz, W. H., & Felitti, V. (2002). Body weight and obesity in adults and self-reported abuse in childhood. *International Journal of Obesity, 26*(8), 1075-1082.
- Yampolskaya, S., Greenbaum, P. E., & Berson, I. R. (2009). Profiles of child maltreatment perpetrators and risk for fatal assault: A latent class analysis. *Journal of Family Violence, 24*, 337-348.

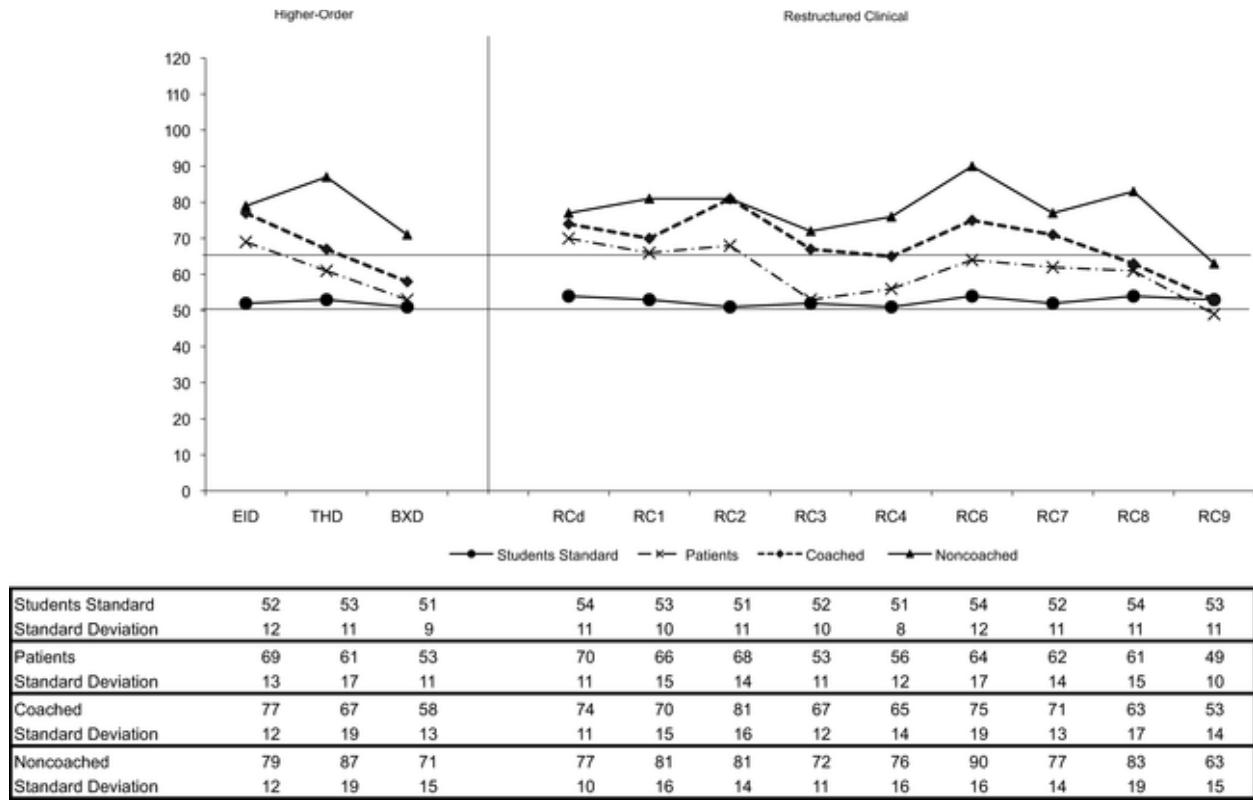
APPENDICES

Appendix A: Examples of CAP Clinical Scale Items

❖ Child Abuse Scale

- Distress Scale
 - “I sometimes wish that my father would have loved me more.”
- Rigidity Scale
 - “People expected too much of me.”
- Unhappiness Scale
 - “I have several close friends in my neighborhood.”
- Problems with Child and Self Scale
 - “I have always been strong and healthy.”
- Problems with Family Scale
 - “My family has problems getting along.”
- Problems with Others Scale
 - “You cannot depend on others.”

Appendix B: Sample MMPI-2-RF Profile



Appendix C: Sample ASEBA-ASR Form

 Please print your answers.			ADULT SELF-REPORT FOR AGES 18-59		For office use only ID# _____
YOUR First Middle Last FULL NAME			YOUR USUAL TYPE OF WORK, even if not working now. Please be specific—for example, auto mechanic; high school teacher; homemaker; laborer; lathe operator; shoe salesman; army sergeant; student (indicate what you are studying & what degree you expect).		
YOUR GENDER	YOUR AGE	ETHNIC GROUP OR RACE	Your work _____ Spouse or partner's work _____		
<input type="checkbox"/> Male <input type="checkbox"/> Female					
TODAY'S DATE Mo. ____ Date ____ Yr. ____		YOUR BIRTHDATE Mo. ____ Date ____ Yr. ____		PLEASE CHECK YOUR HIGHEST EDUCATION	
				<input type="checkbox"/> 1. No high school diploma and no GED <input type="checkbox"/> 7. Some graduate school but no graduate degree <input type="checkbox"/> 2. General Equivalency Diploma (GED) <input type="checkbox"/> 8. Master's Degree <input type="checkbox"/> 3. High school graduate <input type="checkbox"/> 9. Doctoral or Law Degree <input type="checkbox"/> 4. Some college but no college degree <input type="checkbox"/> Other education (specify): _____ <input type="checkbox"/> 5. Associate's Degree <input type="checkbox"/> 6. Bachelor's or RN Degree	
Please fill out this form to reflect your views, even if other people might not agree. You need not spend a lot of time on any item. Feel free to print additional comments. Be sure to answer all items.					

I. FRIENDS:

A. About how many close friends do you have? (Do not include family members.)

 None 1 2 or 3 4 or more

B. About how many times a month do you have contact with any of your close friends? (Include in-person contacts, phone, letters, e-mail.)

 Less than 1 1 or 2 3 or 4 5 or more

C. How well do you get along with your close friends?

 Not as well as I'd like Average Above average Far above average

D. About how many times a month do any friends or family visit you?

 Less than 1 1 or 2 3 or 4 5 or more**II. SPOUSE OR PARTNER:**

What is your marital status? Never been married Married but separated from spouse
 Married, living with spouse Divorced
 Widowed Other—please describe: _____

At any time in the past 6 months, did you live with your spouse or with a partner?

 No—please skip to page 2. Yes—Circle 0, 1, or 2 beside items A-H to describe your relationship during the past 6 months:

0 = Not True 1 = Somewhat or Sometimes True 2 = Very True or Often True

- 0 1 2 A. I get along well with my spouse or partner
 0 1 2 B. My spouse or partner and I have trouble sharing responsibilities
 0 1 2 C. I feel satisfied with my spouse or partner
 0 1 2 D. My spouse or partner and I enjoy similar activities

- 0 1 2 E. My spouse or partner and I disagree about living arrangements, such as where we live
 0 1 2 F. I have trouble with my spouse or partner's family
 0 1 2 G. I like my spouse or partner's friends
 0 1 2 H. My spouse or partner's behavior annoys me

*Please be sure you have answered all items.
Then see other side.*